Appendix D

Laboratory Reports

ARCADIS

Borrow Source Samples

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

July 12, 2013

Project: Mayflower, AR Pipeline Incident

Submittal Date: 07/10/2013
Group Number: 1402818
SDG: PEI90
PO Number: 4510076246
Release Number: MAYFLOWER 1406
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
SO-RM-BF-001 Grab Soil	7121776
SO-TS-BF-001 Grab Soil	7121777
SO-BF-TB-070913 Water	7121778

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	ARCADIS	Attn: Stephen Barrick
ELECTRONIC COPY TO	ARCADIS	Attn: Lyndi Mott
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael J. Firth
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	ExxonMobil	Attn: Julie Foster
ELECTRONIC COPY TO	ExxonMobil	Attn: Carl Wideman

Respectfully Submitted,

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LLI Group #: 1402818

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260B, GC/MS Volatiles

Sample #s: 7121776, 7121777

2-Chloroethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.

SW-846 8260B 25mL purge, GC/MS Volatiles

Batch #: C131911AA (Sample number(s): 7121778 UNSPK: P119864)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: 1,2,4-Trichlorobenzene

SW-846 8270C, GC/MS Semivolatiles

Batch #: 13191SLD026 (Sample number(s): 7121776-7121777 UNSPK: 7121776)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Benzidine

SW-846 8270C SIM, GC/MS Semivolatiles

Batch #: 13191SLC026 (Sample number(s): 7121776-7121777 UNSPK: 7121776)

The recovery(ies) for the following analyte(s) in the LCS exceeded the acceptance window indicating a positive bias: 1-Methylnaphthalene

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Acenaphthene, Phenanthrene

SW-846 8081A, Pesticides/PCBs

Batch #: 131920022A (Sample number(s): 7121776-7121777 UNSPK: 7121776)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Gamma BHC - Lindane

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Alpha BHC, Gamma BHC - Lindane, Delta BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate

SW-846 8151A, Herbicides

Batch #: 131910007A (Sample number(s): 7121776-7121777 UNSPK: P115381)

The recovery(ies) for the following analyte(s) in the LCS exceeded the acceptance window indicating a positive bias: Pentachlorophenol

SW-846 6010B, Metals

Batch #: 131915708002 (Sample number(s): 7121776-7121777 UNSPK: P121925 BKG: P121925)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Chromium, Vanadium

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Antimony, Chromium, Silver

SM 2540 G-1997, Wet Chemistry

Batch #: 13191820001B (Sample number(s): 7121776-7121777 BKG: P113903)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Moisture

Sample Description: SO-RM-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121776
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 10:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

RM-BF SDG#: PEI90-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	N.D.		8	23	0.97
10237	Acrolein	107-02-8	N.D.		23	110	0.97
10237	Acrylonitrile	107-13-1	N.D.		5	23	0.97
10237	Allyl Chloride	107-05-1	N.D.		1	6	0.97
10237	Benzene	71-43-2	3	J	0.6	6	0.97
10237	Bromobenzene	108-86-1	N.D.		1	6	0.97
10237	Bromochloromethane	74-97-5	N.D.		1	6	0.97
10237	Bromodichloromethane	75-27-4	N.D.		1	6	0.97
10237	Bromoform	75-25-2	N.D.		1	6	0.97
10237	Bromomethane	74-83-9	N.D.		2	6	0.97
10237	2-Butanone	78-93-3	N.D.		5	11	0.97
10237	n-Butylbenzene	104-51-8	N.D.		1	6	0.97
10237	sec-Butylbenzene	135-98-8	N.D.		1	6	0.97
10237	tert-Butylbenzene	98-06-6	N.D.		1	6	0.97
10237	Carbon Tetrachloride	56-23-5	N.D.		1	6	0.97
10237	Chlorobenzene	108-90-7	N.D.		1	6	0.97
10237	Chloroethane	75-00-3	N.D.		2	6	0.97
10237	Chloroform	67-66-3	N.D.		1	6	0.97
10237	Chloromethane	74-87-3	N.D.		2	6	0.97
10237	2-Chlorotoluene	95-49-8	N.D.		1	6	0.97
10237	4-Chlorotoluene	106-43-4	N.D.		1	6	0.97
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2	6	0.97
10237	Dibromochloromethane	124-48-1	N.D.		1	6	0.97
10237	1,2-Dibromoethane	106-93-4	N.D.		1	6	0.97
10237	Dibromomethane	74-95-3	N.D.		1	6	0.97
10237	1,2-Dichlorobenzene	95-50-1	N.D.		1	6	0.97
10237	1,3-Dichlorobenzene	541-73-1	N.D.		1	6	0.97
10237	1,4-Dichlorobenzene	106-46-7	N.D.		1	6	0.97
10237	Dichlorodifluoromethane	75-71-8	N.D.		2	6	0.97
10237	1,1-Dichloroethane	75-34-3	N.D.		1	6	0.97
10237	1,2-Dichloroethane	107-06-2	N.D.		1	6	0.97
10237	1,1-Dichloroethene	75-35-4	N.D.		1	6	0.97
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		1	6	0.97
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		1	6	0.97
10237	Dichlorofluoromethane	75-43-4	N.D.		2	6	0.97
10237	1,2-Dichloropropane	78-87-5	N.D.		1	6	0.97
10237	1,3-Dichloropropane	142-28-9	N.D.		1	6	0.97
10237	2,2-Dichloropropane	594-20-7	N.D.		1	6	0.97
10237	1,1-Dichloropropene	563-58-6	N.D.		1	6	0.97
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	6	0.97
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	6	0.97
10237	Ethyl Ether	60-29-7	N.D.		1	6	0.97
10237	Ethylbenzene	100-41-4	2	J	1	6	0.97
10237	Freon 113	76-13-1	N.D.		2	11	0.97
10237	Hexachlorobutadiene	87-68-3	N.D.		2	6	0.97
10237	Isopropylbenzene	98-82-8	N.D.		1	6	0.97
10237	p-Isopropyltoluene	99-87-6	N.D.		1	6	0.97
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.6	6	0.97
10237	4-Methyl-2-pentanone	108-10-1	N.D.		3	11	0.97
10237	Methylene Chloride	75-09-2	N.D.		2	6	0.97

*=This limit was used in the evaluation of the final result

Sample Description: SO-RM-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121776
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 10:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

RM-BF SDG#: PEI90-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	n-Propylbenzene	103-65-1	N.D.	1	6	0.97
10237	Styrene	100-42-5	N.D.	1	6	0.97
10237	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	1	6	0.97
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	6	0.97
10237	Tetrachloroethene	127-18-4	N.D.	1	6	0.97
10237	Tetrahydrofuran	109-99-9	N.D.	5	6	0.97
10237	Toluene	108-88-3	3 J	1	6	0.97
10237	1,2,3-Trichlorobenzene	87-61-6	N.D.	1	6	0.97
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	6	0.97
10237	1,1,1-Trichloroethane	71-55-6	N.D.	1	6	0.97
10237	1,1,2-Trichloroethane	79-00-5	N.D.	1	6	0.97
10237	Trichloroethene	79-01-6	N.D.	1	6	0.97
10237	Trichlorofluoromethane	75-69-4	N.D.	2	6	0.97
10237	1,2,3-Trichloropropane	96-18-4	N.D.	1	6	0.97
10237	1,2,4-Trimethylbenzene	95-63-6	N.D.	1	6	0.97
10237	1,3,5-Trimethylbenzene	108-67-8	N.D.	1	6	0.97
10237	Vinyl Chloride	75-01-4	N.D.	1	6	0.97
10237	Xylene (Total)	1330-20-7	N.D.	1	6	0.97
	2-Chloroethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.					
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	Benzidine	92-87-5	N.D.	810	3,900	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	19	39	1
10727	Butylbenzylphthalate	85-68-7	N.D.	78	190	1
10727	Di-n-butylphthalate	84-74-2	N.D.	78	190	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	19	39	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	19	39	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	19	39	1
10727	bis(2-Chloroisopropyl)ether	39638-32-9	N.D.	19	39	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	2-Chloronaphthalene	91-58-7	N.D.	8	38	1
10727	2-Chlorophenol	95-57-8	N.D.	19	39	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	19	39	1
10727	1,2-Dichlorobenzene	95-50-1	N.D.	19	39	1
10727	1,3-Dichlorobenzene	541-73-1	N.D.	19	39	1
10727	1,4-Dichlorobenzene	106-46-7	N.D.	19	39	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	120	390	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	19	39	1
10727	Diethylphthalate	84-66-2	N.D.	78	190	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	19	39	1
10727	Dimethylphthalate	131-11-3	N.D.	78	190	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	190	580	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	350	1,200	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.	78	190	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.	19	39	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-RM-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121776
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 10:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

RM-BF SDG#: PEI90-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	1,2-Diphenylhydrazine	122-66-7	N.D.		19	39	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		78	200	1
10727	Hexachlorobenzene	118-74-1	N.D.		4	20	1
10727	Hexachlorobutadiene	87-68-3	N.D.		19	39	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		190	580	1
10727	Hexachloroethane	67-72-1	N.D.		39	190	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		4	20	1
10727	Isophorone	78-59-1	N.D.		19	39	1
10727	Nitrobenzene	98-95-3	N.D.		19	39	1
10727	2-Nitrophenol	88-75-5	N.D.		19	39	1
10727	4-Nitrophenol	100-02-7	N.D.		190	580	1
10727	N-Nitrosodimethylamine	62-75-9	N.D.		78	190	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		19	39	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		19	39	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		78	190	1
10727	Pentachlorophenol	87-86-5	N.D.		39	200	1
10727	Phenol	108-95-2	N.D.		19	39	1
10727	1,2,4-Trichlorobenzene	120-82-1	N.D.		19	39	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		19	39	1
GC/MS Semivolatiles	**SW-846 8270C SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
10725	Acenaphthene	83-32-9	N.D.		0.78	1.9	1
10725	Acenaphthylene	208-96-8	N.D.		0.39	1.9	1
10725	Anthracene	120-12-7	N.D.		0.39	1.9	1
10725	Benzo(a)anthracene	56-55-3	N.D.		0.78	1.9	1
10725	Benzo(a)pyrene	50-32-8	N.D.		0.78	1.9	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.		0.78	1.9	1
10725	Benzo(g,h,i)perylene	191-24-2	N.D.		0.78	1.9	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.		0.78	1.9	1
10725	Chrysene	218-01-9	N.D.		0.39	1.9	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.		0.78	1.9	1
10725	Fluoranthene	206-44-0	N.D.		0.78	1.9	1
10725	Fluorene	86-73-7	N.D.		0.78	1.9	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.78	1.9	1
10725	1-Methylnaphthalene	90-12-0	N.D.		0.78	1.9	1
10725	2-Methylnaphthalene	91-57-6	N.D.		0.78	1.9	1
10725	Naphthalene	91-20-3	1.4	J	0.78	1.9	1
10725	Phenanthrene	85-01-8	N.D.		0.78	1.9	1
10725	Pyrene	129-00-0	N.D.		0.78	1.9	1
Herbicides	**SW-846 8151A**		**ug/kg**		**ug/kg**	**ug/kg**	
10401	2,4-D	94-75-7	N.D.		14	42	1
10401	Dalapon	75-99-0	N.D.		51	100	1
10401	2,4-DB	94-82-6	N.D.		7.2	20	1
10401	Dicamba	1918-00-9	N.D.		4.7	14	1
10401	Dinoseb	88-85-7	N.D.		10	28	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-RM-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121776
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Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 10:00 by BL

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ExxonMobil
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PO Box 4416
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RM-BF SDG#: PEI90-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Herbicides	**SW-846 8151A**		**ug/kg**	**ug/kg**	**ug/kg**	
	The QC window for dinoseb is advisory due to the erratic performance of the analyte using this method.					
10401	2,4-DP (Dichloroprop)	120-36-5	N.D.	10	20	1
10401	MCPA	94-74-6	N.D.	880	2,900	1
10401	MCPP (Mecoprop)	93-65-2	N.D.	870	2,900	1
10401	Pentachlorophenol	87-86-5	N.D.	0.38	2.0	1
10401	2,4,5-T	93-76-5	N.D.	0.95	2.0	1
10401	2,4,5-TP	93-72-1	N.D.	0.87	2.0	1
Pesticides/PCBs	**SW-846 8081A**		**ug/kg**	**ug/kg**	**ug/kg**	
10738	Aldrin	309-00-2	N.D.	0.20	0.97	1
10738	Alpha BHC	319-84-6	N.D.	0.20	0.97	1
10738	Beta BHC	319-85-7	N.D.	0.35	1.2	1
10738	Gamma BHC - Lindane	58-89-9	N.D.	0.20	0.97	1
10738	Chlordane	57-74-9	N.D.	4.7	20	1
10738	p,p-DDD	72-54-8	N.D.	0.38	2.0	1
10738	p,p-DDE	72-55-9	N.D.	0.38	2.0	1
10738	p,p-DDT	50-29-3	N.D.	0.41	2.0	1
10738	Delta BHC	319-86-8	N.D.	0.52	0.97	1
10738	Dieldrin	60-57-1	N.D.	0.38	2.0	1
10738	Endosulfan I	959-98-8	N.D.	0.26	0.97	1
10738	Endosulfan II	33213-65-9	N.D.	0.38	2.0	1
10738	Endosulfan Sulfate	1031-07-8	N.D.	0.38	2.0	1
10738	Endrin	72-20-8	N.D.	0.38	2.0	1
10738	Endrin Aldehyde	7421-93-4	N.D.	0.38	2.0	1
10738	Heptachlor	76-44-8	N.D.	0.20	0.97	1
10738	Heptachlor Epoxide	1024-57-3	N.D.	0.20	0.97	1
10738	Methoxychlor	72-43-5	N.D.	2.0	7.8	1
10738	Toxaphene	8001-35-2	N.D.	16	38	1
Pesticides/PCBs	**SW-846 8082**		**ug/kg**	**ug/kg**	**ug/kg**	
10736	PCB-1016	12674-11-2	N.D.	4.2	20	1
10736	PCB-1221	11104-28-2	N.D.	5.3	20	1
10736	PCB-1232	11141-16-5	N.D.	9.3	20	1
10736	PCB-1242	53469-21-9	N.D.	3.8	20	1
10736	PCB-1248	12672-29-6	N.D.	3.8	20	1
10736	PCB-1254	11097-69-1	N.D.	3.8	20	1
10736	PCB-1260	11096-82-5	N.D.	5.7	20	1
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06944	Antimony	7440-36-0	0.835 J	0.835	2.26	1
06935	Arsenic	7440-38-2	4.88	0.790	2.26	1
06946	Barium	7440-39-3	47.0	0.0373	0.564	1
06947	Beryllium	7440-41-7	0.383 J	0.0756	0.564	1
06949	Cadmium	7440-43-9	N.D.	0.0858	0.564	1
06951	Chromium	7440-47-3	10.7	0.181	1.69	1
06953	Copper	7440-50-8	5.62	0.327	1.13	1
06955	Lead	7439-92-1	5.33	0.564	1.69	1
06961	Nickel	7440-02-0	9.24	0.147	1.13	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-RM-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121776
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 10:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

RM-BF SDG#: PEI90-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06936	Selenium	7782-49-2	N.D.	0.903	2.26	1
06966	Silver	7440-22-4	N.D.	0.192	0.564	1
06925	Thallium	7440-28-0	N.D.	0.587	3.39	1
06971	Vanadium	7440-62-2	18.2	0.147	0.564	1
06972	Zinc	7440-66-6	21.2	0.226	2.26	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0110	0.110	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.21	0.58	1
	SW-846 9066		**mg/kg**	**mg/kg**	**mg/kg**	
05912	Phenols (solids)	n.a.	N.D.	1.4	4.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	14.0	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

Volatiles by 8260 were collected as a grab sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	Mayflower VOCs 8260	SW-846 8260B	1	X131911AA	07/10/2013 20:05	Chelsea B Stong	0.97
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201319131661	07/09/2013 10:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201319131661	07/09/2013 10:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201319131661	07/09/2013 10:00	Client Supplied	1
10727	PP Semivolatiles (no PAHs)	SW-846 8270C	1	13191SLD026	07/11/2013 06:49	Brian K Graham	1
10725	18 PAHs 8270C SIM	SW-846 8270C SIM	1	13191SLC026	07/11/2013 04:59	Brian K Graham	1
10809	BNA Soil Microwave	SW-846 3546	1	13191SLD026	07/10/2013 19:00	Sally L Appleyard	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	13191SLC026	07/10/2013 19:00	Sally L Appleyard	1
10401	Herbicides 8151A Soil	SW-846 8151A	1	131910007A	07/11/2013 10:26	Matthew S Listner	1

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Sample Description: SO-RM-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121776
LL Group # 1402818
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Project Name: Mayflower, AR Pipeline Incident

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ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

RM-BF SDG#: PEI90-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10738	PPL Pesticides 8081A Soil	SW-846 8081A	1	131920022A	07/11/2013 20:36	Lisa A Reinert	1
10736	PCBs 8082 Soil	SW-846 8082	1	131910006A	07/11/2013 12:02	Monica M Souders	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	131910006A	07/10/2013 18:30	Sally L Appleyard	1
10496	PPL Pest. Microwave Extraction	SW-846 3546	2	131920022A	07/11/2013 14:00	Wanda F Oswald	1
04181	Herbicide Soil Extraction	SW-846 3550B/SW-846 8151A	1	131910007A	07/10/2013 20:00	Elaine F Stoltzfus	1
06944	Antimony	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	131915708002	07/11/2013 08:13	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	131915711001	07/11/2013 07:34	Damary Valentin	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	131915708002	07/10/2013 22:19	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131915711001	07/11/2013 02:20	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13192102201B	07/11/2013 16:14	Venia B McFadden	1
05912	Phenols (solids)	SW-846 9066	1	13192113201A	07/11/2013 13:36	Joseph E McKenzie	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13192102201B	07/11/2013 10:15	Nancy J Shoop	1
05911	Phenol Distillation (solids)	SW-846 9065 modified	1	13192113201A	07/11/2013 10:00	Nancy J Shoop	1
00111	Moisture	SM 2540 G-1997	1	13191820001B	07/10/2013 21:09	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-TS-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121777
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 15:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TS-BF SDG#: PEI90-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	10	J	8	24	1.02
10237	Acrolein	107-02-8	N.D.		24	120	1.02
10237	Acrylonitrile	107-13-1	N.D.		5	24	1.02
10237	Allyl Chloride	107-05-1	N.D.		1	6	1.02
10237	Benzene	71-43-2	N.D.		0.6	6	1.02
10237	Bromobenzene	108-86-1	N.D.		1	6	1.02
10237	Bromochloromethane	74-97-5	N.D.		1	6	1.02
10237	Bromodichloromethane	75-27-4	N.D.		1	6	1.02
10237	Bromoform	75-25-2	N.D.		1	6	1.02
10237	Bromomethane	74-83-9	N.D.		2	6	1.02
10237	2-Butanone	78-93-3	N.D.		5	12	1.02
10237	n-Butylbenzene	104-51-8	N.D.		1	6	1.02
10237	sec-Butylbenzene	135-98-8	N.D.		1	6	1.02
10237	tert-Butylbenzene	98-06-6	N.D.		1	6	1.02
10237	Carbon Tetrachloride	56-23-5	N.D.		1	6	1.02
10237	Chlorobenzene	108-90-7	N.D.		1	6	1.02
10237	Chloroethane	75-00-3	N.D.		2	6	1.02
10237	Chloroform	67-66-3	N.D.		1	6	1.02
10237	Chloromethane	74-87-3	N.D.		2	6	1.02
10237	2-Chlorotoluene	95-49-8	N.D.		1	6	1.02
10237	4-Chlorotoluene	106-43-4	N.D.		1	6	1.02
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2	6	1.02
10237	Dibromochloromethane	124-48-1	N.D.		1	6	1.02
10237	1,2-Dibromoethane	106-93-4	N.D.		1	6	1.02
10237	Dibromomethane	74-95-3	N.D.		1	6	1.02
10237	1,2-Dichlorobenzene	95-50-1	N.D.		1	6	1.02
10237	1,3-Dichlorobenzene	541-73-1	N.D.		1	6	1.02
10237	1,4-Dichlorobenzene	106-46-7	N.D.		1	6	1.02
10237	Dichlorodifluoromethane	75-71-8	N.D.		2	6	1.02
10237	1,1-Dichloroethane	75-34-3	N.D.		1	6	1.02
10237	1,2-Dichloroethane	107-06-2	N.D.		1	6	1.02
10237	1,1-Dichloroethene	75-35-4	N.D.		1	6	1.02
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		1	6	1.02
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		1	6	1.02
10237	Dichlorofluoromethane	75-43-4	N.D.		2	6	1.02
10237	1,2-Dichloropropane	78-87-5	N.D.		1	6	1.02
10237	1,3-Dichloropropane	142-28-9	N.D.		1	6	1.02
10237	2,2-Dichloropropane	594-20-7	N.D.		1	6	1.02
10237	1,1-Dichloropropene	563-58-6	N.D.		1	6	1.02
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	6	1.02
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	6	1.02
10237	Ethyl Ether	60-29-7	N.D.		1	6	1.02
10237	Ethylbenzene	100-41-4	N.D.		1	6	1.02
10237	Freon 113	76-13-1	N.D.		2	12	1.02
10237	Hexachlorobutadiene	87-68-3	N.D.		2	6	1.02
10237	Isopropylbenzene	98-82-8	N.D.		1	6	1.02
10237	p-Isopropyltoluene	99-87-6	N.D.		1	6	1.02
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.6	6	1.02
10237	4-Methyl-2-pentanone	108-10-1	N.D.		4	12	1.02
10237	Methylene Chloride	75-09-2	N.D.		2	6	1.02

*=This limit was used in the evaluation of the final result

Sample Description: SO-TS-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121777
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 15:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TS-BF SDG#: PEI90-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	n-Propylbenzene	103-65-1	N.D.	1	6	1.02
10237	Styrene	100-42-5	N.D.	1	6	1.02
10237	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	1	6	1.02
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	6	1.02
10237	Tetrachloroethene	127-18-4	N.D.	1	6	1.02
10237	Tetrahydrofuran	109-99-9	N.D.	5	6	1.02
10237	Toluene	108-88-3	N.D.	1	6	1.02
10237	1,2,3-Trichlorobenzene	87-61-6	N.D.	1	6	1.02
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	6	1.02
10237	1,1,1-Trichloroethane	71-55-6	N.D.	1	6	1.02
10237	1,1,2-Trichloroethane	79-00-5	N.D.	1	6	1.02
10237	Trichloroethene	79-01-6	N.D.	1	6	1.02
10237	Trichlorofluoromethane	75-69-4	N.D.	2	6	1.02
10237	1,2,3-Trichloropropane	96-18-4	N.D.	1	6	1.02
10237	1,2,4-Trimethylbenzene	95-63-6	N.D.	1	6	1.02
10237	1,3,5-Trimethylbenzene	108-67-8	N.D.	1	6	1.02
10237	Vinyl Chloride	75-01-4	N.D.	1	6	1.02
10237	Xylene (Total)	1330-20-7	N.D.	1	6	1.02
	2-Chloroethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.					
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	Benzidine	92-87-5	N.D.	810	3,900	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	19	39	1
10727	Butylbenzylphthalate	85-68-7	N.D.	77	190	1
10727	Di-n-butylphthalate	84-74-2	N.D.	77	190	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	19	39	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	19	39	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	19	39	1
10727	bis(2-Chloroisopropyl)ether	39638-32-9	N.D.	19	39	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	2-Chloronaphthalene	91-58-7	N.D.	8	38	1
10727	2-Chlorophenol	95-57-8	N.D.	19	39	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	19	39	1
10727	1,2-Dichlorobenzene	95-50-1	N.D.	19	39	1
10727	1,3-Dichlorobenzene	541-73-1	N.D.	19	39	1
10727	1,4-Dichlorobenzene	106-46-7	N.D.	19	39	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	120	390	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	19	39	1
10727	Diethylphthalate	84-66-2	N.D.	77	190	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	19	39	1
10727	Dimethylphthalate	131-11-3	N.D.	77	190	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	190	580	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	350	1,200	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.	77	190	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.	19	39	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-TS-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121777
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 15:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TS-BF SDG#: PEI90-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	**ug/kg**	
10727	1,2-Diphenylhydrazine	122-66-7	N.D.		19	39	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		77	200	1
10727	Hexachlorobenzene	118-74-1	N.D.		4	20	1
10727	Hexachlorobutadiene	87-68-3	N.D.		19	39	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.		190	580	1
10727	Hexachloroethane	67-72-1	N.D.		39	190	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		4	20	1
10727	Isophorone	78-59-1	N.D.		19	39	1
10727	Nitrobenzene	98-95-3	N.D.		19	39	1
10727	2-Nitrophenol	88-75-5	N.D.		19	39	1
10727	4-Nitrophenol	100-02-7	N.D.		190	580	1
10727	N-Nitrosodimethylamine	62-75-9	N.D.		77	190	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.		19	39	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.		19	39	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10727	Di-n-octylphthalate	117-84-0	N.D.		77	190	1
10727	Pentachlorophenol	87-86-5	N.D.		39	200	1
10727	Phenol	108-95-2	N.D.		19	39	1
10727	1,2,4-Trichlorobenzene	120-82-1	N.D.		19	39	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.		19	39	1
GC/MS Semivolatiles	**SW-846 8270C SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
10725	Acenaphthene	83-32-9	N.D.		0.77	1.9	1
10725	Acenaphthylene	208-96-8	N.D.		0.39	1.9	1
10725	Anthracene	120-12-7	N.D.		0.39	1.9	1
10725	Benzo(a)anthracene	56-55-3	N.D.		0.77	1.9	1
10725	Benzo(a)pyrene	50-32-8	N.D.		0.77	1.9	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.		0.77	1.9	1
10725	Benzo(g,h,i)perylene	191-24-2	N.D.		0.77	1.9	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.		0.77	1.9	1
10725	Chrysene	218-01-9	0.58	J	0.39	1.9	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.		0.77	1.9	1
10725	Fluoranthene	206-44-0	N.D.		0.77	1.9	1
10725	Fluorene	86-73-7	N.D.		0.77	1.9	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.77	1.9	1
10725	1-Methylnaphthalene	90-12-0	N.D.		0.77	1.9	1
10725	2-Methylnaphthalene	91-57-6	N.D.		0.77	1.9	1
10725	Naphthalene	91-20-3	0.90	J	0.77	1.9	1
10725	Phenanthrene	85-01-8	N.D.		0.77	1.9	1
10725	Pyrene	129-00-0	N.D.		0.77	1.9	1
Herbicides	**SW-846 8151A**		**ug/kg**		**ug/kg**	**ug/kg**	
10401	2,4-D	94-75-7	N.D.		14	42	1
10401	Dalapon	75-99-0	N.D.		51	100	1
10401	2,4-DB	94-82-6	N.D.		7.2	20	1
10401	Dicamba	1918-00-9	N.D.		4.6	14	1
10401	Dinoseb	88-85-7	N.D.		10	28	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-TS-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121777
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 15:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TS-BF SDG#: PEI90-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Herbicides	**SW-846 8151A**		**ug/kg**	**ug/kg**	**ug/kg**	
	The QC window for dinoseb is advisory due to the erratic performance of the analyte using this method.					
10401	2,4-DP (Dichloroprop)	120-36-5	N.D.	10	20	1
10401	MCPA	94-74-6	N.D.	880	2,900	1
10401	MCPP (Mecoprop)	93-65-2	N.D.	870	2,900	1
10401	Pentachlorophenol	87-86-5	N.D.	0.38	2.0	1
10401	2,4,5-T	93-76-5	N.D.	0.95	2.0	1
10401	2,4,5-TP	93-72-1	N.D.	0.87	2.0	1
Pesticides/PCBs	**SW-846 8081A**		**ug/kg**	**ug/kg**	**ug/kg**	
10738	Aldrin	309-00-2	N.D.	0.20	0.96	1
10738	Alpha BHC	319-84-6	N.D.	0.20	0.96	1
10738	Beta BHC	319-85-7	N.D.	0.35	1.2	1
10738	Gamma BHC - Lindane	58-89-9	N.D.	0.20	0.96	1
10738	Chlordane	57-74-9	N.D.	4.6	20	1
10738	p,p-DDD	72-54-8	N.D.	0.38	2.0	1
10738	p,p-DDE	72-55-9	N.D.	0.38	2.0	1
10738	p,p-DDT	50-29-3	N.D.	0.41	2.0	1
10738	Delta BHC	319-86-8	N.D.	0.52	0.96	1
10738	Dieldrin	60-57-1	N.D.	0.38	2.0	1
10738	Endosulfan I	959-98-8	N.D.	0.26	0.96	1
10738	Endosulfan II	33213-65-9	N.D.	0.38	2.0	1
10738	Endosulfan Sulfate	1031-07-8	N.D.	0.38	2.0	1
10738	Endrin	72-20-8	N.D.	0.38	2.0	1
10738	Endrin Aldehyde	7421-93-4	N.D.	0.38	2.0	1
10738	Heptachlor	76-44-8	N.D.	0.20	0.96	1
10738	Heptachlor Epoxide	1024-57-3	N.D.	0.20	0.96	1
10738	Methoxychlor	72-43-5	N.D.	2.0	7.8	1
10738	Toxaphene	8001-35-2	N.D.	16	38	1
Pesticides/PCBs	**SW-846 8082**		**ug/kg**	**ug/kg**	**ug/kg**	
10736	PCB-1016	12674-11-2	N.D.	4.2	20	1
10736	PCB-1221	11104-28-2	N.D.	5.3	20	1
10736	PCB-1232	11141-16-5	N.D.	9.3	20	1
10736	PCB-1242	53469-21-9	N.D.	3.8	20	1
10736	PCB-1248	12672-29-6	N.D.	3.8	20	1
10736	PCB-1254	11097-69-1	N.D.	3.8	20	1
10736	PCB-1260	11096-82-5	N.D.	5.7	20	1
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06944	Antimony	7440-36-0	0.866 J	0.842	2.27	1
06935	Arsenic	7440-38-2	5.23	0.796	2.27	1
06946	Barium	7440-39-3	76.3	0.0375	0.569	1
06947	Beryllium	7440-41-7	0.473 J	0.0762	0.569	1
06949	Cadmium	7440-43-9	N.D.	0.0864	0.569	1
06951	Chromium	7440-47-3	11.3	0.182	1.71	1
06953	Copper	7440-50-8	6.48	0.330	1.14	1
06955	Lead	7439-92-1	6.70	0.569	1.71	1
06961	Nickel	7440-02-0	8.95	0.148	1.14	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-TS-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121777
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 15:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TS-BF SDG#: PEI90-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06936	Selenium	7782-49-2	N.D.	0.910	2.27	1
06966	Silver	7440-22-4	N.D.	0.193	0.569	1
06925	Thallium	7440-28-0	N.D.	0.591	3.41	1
06971	Vanadium	7440-62-2	20.8	0.148	0.569	1
06972	Zinc	7440-66-6	23.9	0.227	2.27	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0111	0.111	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.21	0.58	1
	SW-846 9066		**mg/kg**	**mg/kg**	**mg/kg**	
05912	Phenols (solids)	n.a.	N.D.	1.4	4.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	13.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

Volatiles by 8260 were collected as a grab sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	Mayflower VOCs 8260	SW-846 8260B	1	X131911AA	07/10/2013 20:29	Chelsea B Stong	1.02
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201319131661	07/09/2013 15:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201319131661	07/09/2013 15:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201319131661	07/09/2013 15:00	Client Supplied	1
10727	PP Semivolatiles (no PAHs)	SW-846 8270C	1	13191SLD026	07/11/2013 07:58	Brian K Graham	1
10725	18 PAHs 8270C SIM	SW-846 8270C SIM	1	13191SLC026	07/11/2013 06:36	Brian K Graham	1
10809	BNA Soil Microwave	SW-846 3546	1	13191SLD026	07/10/2013 19:00	Sally L Appleyard	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	13191SLC026	07/10/2013 19:00	Sally L Appleyard	1
10401	Herbicides 8151A Soil	SW-846 8151A	1	131910007A	07/11/2013 10:53	Matthew S Listner	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-TS-BF-001 Grab Soil
Mayflower, AR
Pipeline Incident

LL Sample # SW 7121777
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 15:00 by BL

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TS-BF SDG#: PEI90-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10738	PPL Pesticides 8081A Soil	SW-846 8081A	1	131920022A	07/11/2013 21:22	Lisa A Reinert	1
10736	PCBs 8082 Soil	SW-846 8082	1	131910006A	07/11/2013 12:12	Monica M Souders	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	131910006A	07/10/2013 18:30	Sally L Appleyard	1
10496	PPL Pest. Microwave Extraction	SW-846 3546	2	131920022A	07/11/2013 14:00	Wanda F Oswald	1
04181	Herbicide Soil Extraction	SW-846 3550B/SW-846 8151A	1	131910007A	07/10/2013 20:00	Elaine F Stoltzfus	1
06944	Antimony	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06935	Arsenic	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06946	Barium	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06947	Beryllium	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06949	Cadmium	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06951	Chromium	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06953	Copper	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06955	Lead	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06961	Nickel	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06936	Selenium	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06966	Silver	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06925	Thallium	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06971	Vanadium	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
06972	Zinc	SW-846 6010B	1	131915708002	07/11/2013 08:16	Joanne M Gates	1
00159	Mercury	SW-846 7471A	1	131915711001	07/11/2013 07:36	Damary Valentin	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	131915708002	07/10/2013 22:19	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131915711001	07/11/2013 02:20	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13192102201B	07/11/2013 16:11	Venia B McFadden	1
05912	Phenols (solids)	SW-846 9066	1	13192113201A	07/11/2013 13:39	Joseph E McKenzie	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13192102201B	07/11/2013 10:15	Nancy J Shoop	1
05911	Phenol Distillation (solids)	SW-846 9065 modified	1	13192113201A	07/11/2013 10:00	Nancy J Shoop	1
00111	Moisture	SM 2540 G-1997	1	13191820001B	07/10/2013 21:09	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-BF-TB-070913 Water
Mayflower, AR
Pipeline Incident

LL Sample # WW 7121778
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 09:00

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TB-BF SDG#: PEI90-03TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l	ug/l	ug/l	
02898	Acetone	67-64-1	N.D.	3.0	5.0	1
02898	Acrolein	107-02-8	N.D.	5.0	25	1
02898	Acrylonitrile	107-13-1	N.D.	1.0	5.0	1
02898	Allyl Chloride	107-05-1	N.D.	0.1	0.5	1
02898	Benzene	71-43-2	N.D.	0.1	0.5	1
02898	Bromobenzene	108-86-1	N.D.	0.1	0.5	1
02898	Bromochloromethane	74-97-5	N.D.	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
02898	Bromoform	75-25-2	N.D.	0.1	0.5	1
02898	Bromomethane	74-83-9	N.D.	0.1	0.5	1
02898	2-Butanone	78-93-3	N.D.	1.0	5.0	1
02898	n-Butylbenzene	104-51-8	N.D.	0.1	0.5	1
02898	sec-Butylbenzene	135-98-8	N.D.	0.1	0.5	1
02898	tert-Butylbenzene	98-06-6	N.D.	0.1	0.5	1
02898	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
02898	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
02898	Chloroethane	75-00-3	N.D.	0.1	0.5	1
02898	Chloroform	67-66-3	N.D.	0.1	0.5	1
02898	Chloromethane	74-87-3	N.D.	0.2	0.5	1
02898	2-Chlorotoluene	95-49-8	N.D.	0.1	0.5	1
02898	4-Chlorotoluene	106-43-4	N.D.	0.1	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
02898	Dibromomethane	74-95-3	N.D.	0.1	0.5	1
02898	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
02898	Dichlorofluoromethane	75-43-4	N.D.	0.2	0.5	1
02898	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
02898	1,3-Dichloropropane	142-28-9	N.D.	0.1	0.5	1
02898	2,2-Dichloropropane	594-20-7	N.D.	0.1	0.5	1
02898	1,1-Dichloropropene	563-58-6	N.D.	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
02898	Ethyl ether	60-29-7	N.D.	0.1	0.5	1
02898	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
02898	Freon 113	76-13-1	N.D.	0.2	0.5	1
02898	Hexachlorobutadiene	87-68-3	N.D.	0.1	0.5	1
02898	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
02898	p-Isopropyltoluene	99-87-6	N.D.	0.1	0.5	1
02898	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: SO-BF-TB-070913 Water
Mayflower, AR
Pipeline Incident

LL Sample # WW 7121778
LL Group # 1402818
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2013 09:00

Submitted: 07/10/2013 09:25
Reported: 07/12/2013 11:03

ExxonMobil
Mobil Pipeline Company
PO Box 4416
Houston TX 77210-4416

TB-BF SDG#: PEI90-03TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		ug/l	ug/l	ug/l	
02898	4-Methyl-2-Pentanone	108-10-1	N.D.	1.0	5.0	1
02898	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
02898	n-Propylbenzene	103-65-1	N.D.	0.1	0.5	1
02898	Styrene	100-42-5	N.D.	0.1	0.5	1
02898	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	N.D.	0.1	0.5	1
02898	Tetrahydrofuran	109-99-9	N.D.	2.0	5.0	1
02898	Toluene	108-88-3	N.D.	0.1	0.5	1
02898	1,2,3-Trichlorobenzene	87-61-6	N.D.	0.1	0.5	1
02898	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
02898	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
02898	1,2,3-Trichloropropane	96-18-4	N.D.	0.3	1.0	1
02898	1,2,4-Trimethylbenzene	95-63-6	N.D.	0.1	0.5	1
02898	1,3,5-Trimethylbenzene	108-67-8	N.D.	0.1	0.5	1
02898	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
02898	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	EPA SW846/8260 (water-25ml) #1	SW-846 8260B 25mL purge	1	C131911AA	07/10/2013 14:31	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	C131911AA	07/10/2013 14:31	Kerri E Legerlotz	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C131911AA	Sample number(s): 7121778								
Acetone	N.D.	3.0	5.0	ug/l	107	122	73-135	14	30
Acrolein	N.D.	5.0	25	ug/l	86	96	10-158	12	30
Acrylonitrile	N.D.	1.0	5.0	ug/l	101	118	69-136	15	30
Allyl Chloride	N.D.	0.1	0.5	ug/l	87	85	61-130	2	30
Benzene	N.D.	0.1	0.5	ug/l	106	103	80-120	2	30
Bromobenzene	N.D.	0.1	0.5	ug/l	100	101	80-120	0	30
Bromochloromethane	N.D.	0.1	0.5	ug/l	114	111	80-125	3	30
Bromodichloromethane	N.D.	0.1	0.5	ug/l	105	103	80-120	2	30
Bromoform	N.D.	0.1	0.5	ug/l	106	108	63-132	2	30
Bromomethane	N.D.	0.1	0.5	ug/l	95	92	38-146	3	30
2-Butanone	N.D.	1.0	5.0	ug/l	100	117	70-130	16	30
n-Butylbenzene	N.D.	0.1	0.5	ug/l	103	100	80-120	3	30
sec-Butylbenzene	N.D.	0.1	0.5	ug/l	103	101	80-120	2	30
tert-Butylbenzene	N.D.	0.1	0.5	ug/l	98	100	80-120	1	30
Carbon Tetrachloride	N.D.	0.1	0.5	ug/l	120	115	74-133	4	30
Chlorobenzene	N.D.	0.1	0.5	ug/l	111	110	80-120	1	30
Chloroethane	N.D.	0.1	0.5	ug/l	94	90	67-124	4	30
Chloroform	N.D.	0.1	0.5	ug/l	110	108	80-120	2	30
Chloromethane	N.D.	0.2	0.5	ug/l	81	79	55-135	3	30
2-Chlorotoluene	N.D.	0.1	0.5	ug/l	104	104	80-120	1	30
4-Chlorotoluene	N.D.	0.1	0.5	ug/l	107	105	80-120	1	30
1,2-Dibromo-3-chloropropane	N.D.	0.2	0.5	ug/l	106	121	57-141	13	30
Dibromochloromethane	N.D.	0.1	0.5	ug/l	110	111	80-126	1	30
1,2-Dibromoethane	N.D.	0.1	0.5	ug/l	106	105	80-120	0	30
Dibromomethane	N.D.	0.1	0.5	ug/l	106	103	80-120	2	30
1,2-Dichlorobenzene	N.D.	0.1	0.5	ug/l	105	104	80-120	1	30
1,3-Dichlorobenzene	N.D.	0.1	0.5	ug/l	104	104	80-120	0	30
1,4-Dichlorobenzene	N.D.	0.1	0.5	ug/l	105	105	80-112	1	30
Dichlorodifluoromethane	N.D.	0.1	0.5	ug/l	68	64	39-120	6	30
1,1-Dichloroethane	N.D.	0.1	0.5	ug/l	106	104	80-120	2	30
1,2-Dichloroethane	N.D.	0.1	0.5	ug/l	107	105	80-127	2	30
1,1-Dichloroethene	N.D.	0.1	0.5	ug/l	114	111	80-123	2	30
cis-1,2-Dichloroethene	N.D.	0.1	0.5	ug/l	108	106	80-120	2	30
trans-1,2-Dichloroethene	N.D.	0.1	0.5	ug/l	115	109	80-120	5	30
Dichlorofluoromethane	N.D.	0.2	0.5	ug/l	120	117	63-149	2	30
1,2-Dichloropropane	N.D.	0.1	0.5	ug/l	108	107	80-120	1	30
1,3-Dichloropropane	N.D.	0.1	0.5	ug/l	102	100	80-120	2	30
2,2-Dichloropropane	N.D.	0.1	0.5	ug/l	114	111	75-122	3	30
1,1-Dichloropropene	N.D.	0.1	0.5	ug/l	111	108	80-121	3	30
cis-1,3-Dichloropropene	N.D.	0.1	0.5	ug/l	91	91	74-120	0	30
trans-1,3-Dichloropropene	N.D.	0.1	0.5	ug/l	94	95	73-126	1	30
Ethyl ether	N.D.	0.1	0.5	ug/l	97	94	59-130	3	30
Ethylbenzene	N.D.	0.1	0.5	ug/l	106	103	80-120	3	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Freon 113	N.D.	0.2	0.5	ug/l	119	114	78-132	4	30
Hexachlorobutadiene	N.D.	0.1	0.5	ug/l	99	95	61-125	4	30
Isopropylbenzene	N.D.	0.1	0.5	ug/l	106	103	80-120	3	30
p-Isopropyltoluene	N.D.	0.1	0.5	ug/l	103	100	80-120	3	30
Methyl Tertiary Butyl Ether	N.D.	0.1	0.5	ug/l	92	94	80-125	2	30
4-Methyl-2-Pentanone	N.D.	1.0	5.0	ug/l	89	90	69-135	1	30
Methylene Chloride	N.D.	0.2	0.5	ug/l	111	109	80-120	1	30
n-Propylbenzene	N.D.	0.1	0.5	ug/l	102	100	80-120	2	30
Styrene	N.D.	0.1	0.5	ug/l	110	108	80-120	2	30
1,1,1,2-Tetrachloroethane	N.D.	0.1	0.5	ug/l	114	112	80-120	1	30
1,1,2,2-Tetrachloroethane	N.D.	0.1	0.5	ug/l	98	99	80-125	1	30
Tetrachloroethene	N.D.	0.1	0.5	ug/l	111	108	80-120	3	30
Tetrahydrofuran	N.D.	2.0	5.0	ug/l	106	118	65-131	10	30
Toluene	N.D.	0.1	0.5	ug/l	108	106	80-120	2	30
1,2,3-Trichlorobenzene	N.D.	0.1	0.5	ug/l	82	82	63-120	0	30
1,2,4-Trichlorobenzene	N.D.	0.1	0.5	ug/l	83	84	70-120	0	30
1,1,1-Trichloroethane	N.D.	0.1	0.5	ug/l	113	109	79-127	3	30
1,1,2-Trichloroethane	N.D.	0.1	0.5	ug/l	107	105	80-120	2	30
Trichloroethene	N.D.	0.1	0.5	ug/l	110	107	80-120	2	30
Trichlorofluoromethane	N.D.	0.1	0.5	ug/l	101	95	77-132	6	30
1,2,3-Trichloropropane	N.D.	0.3	1.0	ug/l	102	100	80-120	2	30
1,2,4-Trimethylbenzene	N.D.	0.1	0.5	ug/l	104	102	80-120	2	30
1,3,5-Trimethylbenzene	N.D.	0.1	0.5	ug/l	104	102	80-120	2	30
Vinyl Chloride	N.D.	0.1	0.5	ug/l	87	86	65-127	1	30
Xylene (Total)	N.D.	0.1	0.5	ug/l	108	107	80-120	1	30
Batch number: X131911AA	Sample number(s): 7121776-7121777								
Acetone	N.D.	7.	20	ug/kg	88	90	18-197	3	30
Acrolein	N.D.	20.	100	ug/kg	93	84	50-137	11	30
Acrylonitrile	N.D.	4.	20	ug/kg	79	79	60-133	0	30
Allyl Chloride	N.D.	1.	5	ug/kg	98	94	55-169	4	30
Benzene	N.D.	0.5	5	ug/kg	89	86	80-120	4	30
Bromobenzene	N.D.	1.	5	ug/kg	96	93	79-120	3	30
Bromochloromethane	N.D.	1.	5	ug/kg	116	114	82-133	2	30
Bromodichloromethane	N.D.	1.	5	ug/kg	87	84	75-114	4	30
Bromoform	N.D.	1.	5	ug/kg	95	92	70-120	3	30
Bromomethane	N.D.	2.	5	ug/kg	92	88	32-162	4	30
2-Butanone	N.D.	4.	10	ug/kg	82	83	38-146	1	30
n-Butylbenzene	N.D.	1.	5	ug/kg	95	92	72-120	3	30
sec-Butylbenzene	N.D.	1.	5	ug/kg	103	99	75-120	4	30
tert-Butylbenzene	N.D.	1.	5	ug/kg	98	94	75-120	4	30
Carbon Tetrachloride	N.D.	1.	5	ug/kg	96	91	69-122	5	30
Chlorobenzene	N.D.	1.	5	ug/kg	98	95	80-120	3	30
Chloroethane	N.D.	2.	5	ug/kg	88	84	37-154	4	30
Chloroform	N.D.	1.	5	ug/kg	92	89	80-120	4	30
Chloromethane	N.D.	2.	5	ug/kg	80	76	56-120	4	30
2-Chlorotoluene	N.D.	1.	5	ug/kg	99	94	78-120	5	30
4-Chlorotoluene	N.D.	1.	5	ug/kg	98	95	79-120	3	30
1,2-Dibromo-3-chloropropane	N.D.	2.	5	ug/kg	89	90	55-128	1	30
Dibromochloromethane	N.D.	1.	5	ug/kg	93	90	77-120	2	30
1,2-Dibromoethane	N.D.	1.	5	ug/kg	96	96	80-120	0	30
Dibromomethane	N.D.	1.	5	ug/kg	89	86	80-120	3	30
1,2-Dichlorobenzene	N.D.	1.	5	ug/kg	99	96	80-120	3	30
1,3-Dichlorobenzene	N.D.	1.	5	ug/kg	99	95	80-120	5	30
1,4-Dichlorobenzene	N.D.	1.	5	ug/kg	99	96	80-120	3	30
Dichlorodifluoromethane	N.D.	2.	5	ug/kg	84	79	32-120	7	30

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloroethane	N.D.	1.	5	ug/kg	86	82	80-120	5	30
1,2-Dichloroethane	N.D.	1.	5	ug/kg	88	86	72-126	3	30
1,1-Dichloroethene	N.D.	1.	5	ug/kg	80	77	73-129	4	30
cis-1,2-Dichloroethene	N.D.	1.	5	ug/kg	93	88	80-120	6	30
trans-1,2-Dichloroethene	N.D.	1.	5	ug/kg	91	87	79-120	5	30
Dichlorofluoromethane	N.D.	2.	5	ug/kg	94	90	43-148	5	30
1,2-Dichloropropane	N.D.	1.	5	ug/kg	89	88	77-120	2	30
1,3-Dichloropropane	N.D.	1.	5	ug/kg	89	87	80-120	2	30
2,2-Dichloropropane	N.D.	1.	5	ug/kg	87	83	72-123	4	30
1,1-Dichloropropene	N.D.	1.	5	ug/kg	94	88	77-120	7	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/kg	87	85	74-120	3	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/kg	86	85	77-120	1	30
Ethyl Ether	N.D.	1.	5	ug/kg	73	74	36-144	1	30
Ethylbenzene	N.D.	1.	5	ug/kg	97	94	80-120	4	30
Freon 113	N.D.	2.	10	ug/kg	85	82	64-137	4	30
Hexachlorobutadiene	N.D.	2.	5	ug/kg	98	96	46-130	2	30
Isopropylbenzene	N.D.	1.	5	ug/kg	102	98	76-120	4	30
p-Isopropyltoluene	N.D.	1.	5	ug/kg	103	98	75-120	4	30
Methyl Tertiary Butyl Ether	N.D.	0.5	5	ug/kg	84	83	74-121	1	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/kg	68	70	52-125	2	30
Methylene Chloride	N.D.	2.	5	ug/kg	88	85	76-124	3	30
n-Propylbenzene	N.D.	1.	5	ug/kg	101	97	77-120	4	30
Styrene	N.D.	1.	5	ug/kg	97	93	76-120	4	30
1,1,1,2-Tetrachloroethane	N.D.	1.	5	ug/kg	95	93	80-120	2	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/kg	94	91	71-123	3	30
Tetrachloroethene	N.D.	1.	5	ug/kg	105	99	78-126	6	30
Tetrahydrofuran	N.D.	4.	5	ug/kg	100	94	71-132	7	30
Toluene	N.D.	1.	5	ug/kg	96	93	80-120	4	30
1,2,3-Trichlorobenzene	N.D.	1.	5	ug/kg	95	94	64-120	1	30
1,2,4-Trichlorobenzene	N.D.	1.	5	ug/kg	95	93	68-113	2	30
1,1,1-Trichloroethane	N.D.	1.	5	ug/kg	86	82	71-125	5	30
1,1,2-Trichloroethane	N.D.	1.	5	ug/kg	95	94	80-120	1	30
Trichloroethene	N.D.	1.	5	ug/kg	96	92	80-120	3	30
Trichlorofluoromethane	N.D.	2.	5	ug/kg	100	94	58-133	5	30
1,2,3-Trichloropropane	N.D.	1.	5	ug/kg	97	98	71-123	1	30
1,2,4-Trimethylbenzene	N.D.	1.	5	ug/kg	100	96	79-120	4	30
1,3,5-Trimethylbenzene	N.D.	1.	5	ug/kg	101	97	78-120	4	30
Vinyl Chloride	N.D.	1.	5	ug/kg	86	83	53-120	3	30
Xylene (Total)	N.D.	1.	5	ug/kg	98	94	80-120	3	30

Batch number: 13191SLC026 Sample number(s): 7121776-7121777

Acenaphthene	N.D.	0.67	1.7	ug/kg	101	69-114
Acenaphthylene	N.D.	0.33	1.7	ug/kg	90	71-113
Anthracene	N.D.	0.33	1.7	ug/kg	96	75-116
Benzo(a)anthracene	N.D.	0.67	1.7	ug/kg	94	76-115
Benzo(a)pyrene	N.D.	0.67	1.7	ug/kg	96	76-117
Benzo(b)fluoranthene	N.D.	0.67	1.7	ug/kg	101	77-129
Benzo(g,h,i)perylene	N.D.	0.67	1.7	ug/kg	96	64-120
Benzo(k)fluoranthene	N.D.	0.67	1.7	ug/kg	96	71-120
Chrysene	N.D.	0.33	1.7	ug/kg	94	78-111
Dibenz(a,h)anthracene	N.D.	0.67	1.7	ug/kg	90	65-124
Fluoranthene	N.D.	0.67	1.7	ug/kg	99	68-119
Fluorene	N.D.	0.67	1.7	ug/kg	99	75-123
Indeno(1,2,3-cd)pyrene	N.D.	0.67	1.7	ug/kg	88	66-122
1-Methylnaphthalene	N.D.	0.67	1.7	ug/kg	118*	74-113
2-Methylnaphthalene	N.D.	0.67	1.7	ug/kg	108	78-121

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Naphthalene	N.D.	0.67	1.7	ug/kg	99		64-120		
Phenanthrene	N.D.	0.67	1.7	ug/kg	88		72-110		
Pyrene	N.D.	0.67	1.7	ug/kg	88		71-120		
Batch number: 13191SLD026	Sample number(s): 7121776-7121777								
Benzidine	N.D.	700.	3,300	ug/kg	49		25-94		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	102		79-117		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	99		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	98		79-112		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	99		80-124		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	92		77-112		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	94		77-115		
bis(2-Chloroisopropyl)ether	N.D.	17.	33	ug/kg	92		64-114		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	115		56-144		
2-Chlorophenol	N.D.	17.	33	ug/kg	102		80-122		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	98		79-110		
1,2-Dichlorobenzene	N.D.	17.	33	ug/kg	98		79-112		
1,3-Dichlorobenzene	N.D.	17.	33	ug/kg	94		79-113		
1,4-Dichlorobenzene	N.D.	17.	33	ug/kg	93		79-112		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	59		20-111		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	102		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	98		82-113		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	100		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	98		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	78		56-132		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	56		26-145		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	99		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	101		83-120		
1,2-Diphenylhydrazine	N.D.	17.	33	ug/kg	105		68-127		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	100		75-124		
Hexachlorobenzene	N.D.	3.	17	ug/kg	100		74-118		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	92		76-115		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	100		66-135		
Hexachloroethane	N.D.	33.	170	ug/kg	92		76-109		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	98		77-122		
Isophorone	N.D.	17.	33	ug/kg	96		76-112		
Nitrobenzene	N.D.	17.	33	ug/kg	94		73-118		
2-Nitrophenol	N.D.	17.	33	ug/kg	100		81-114		
4-Nitrophenol	N.D.	170.	500	ug/kg	73		49-136		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	94		70-113		
N-Nitrosodimethylamine	N.D.	67.	170	ug/kg	94		67-116		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	100		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	103		75-136		
Pentachlorophenol	N.D.	33.	170	ug/kg	84		56-132		
Phenol	N.D.	17.	33	ug/kg	105		69-126		
1,2,4-Trichlorobenzene	N.D.	17.	33	ug/kg	98		80-109		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	100		81-123		
Batch number: 131910007A	Sample number(s): 7121776-7121777								
2,4-D	N.D.	12.	36	ug/kg	94		59-122		
Dalapon	N.D.	44.	90	ug/kg	86		25-100		
2,4-DB	N.D.	6.2	17	ug/kg	102		54-131		
Dicamba	N.D.	4.0	12	ug/kg	100		60-123		
Dinoseb	N.D.	9.0	24	ug/kg	14		10-36		
2,4-DP (Dichloroprop)	N.D.	9.0	17	ug/kg	119		65-158		
MCPA	N.D.	760.	2,500	ug/kg	84		60-127		

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
MCPP (Mecoprop)	N.D.	750.	2,500	ug/kg	102		54-134		
Pentachlorophenol	N.D.	0.33	1.7	ug/kg	113*		52-102		
2,4,5-T	N.D.	0.82	1.7	ug/kg	99		58-135		
2,4,5-TP	N.D.	0.75	1.7	ug/kg	114		63-130		
Batch number: 131910006A	Sample number(s): 7121776-7121777								
PCB-1016	N.D.	3.6	17	ug/kg	99		77-121		
PCB-1221	N.D.	4.6	17	ug/kg					
PCB-1232	N.D.	8.0	17	ug/kg					
PCB-1242	N.D.	3.3	17	ug/kg					
PCB-1248	N.D.	3.3	17	ug/kg					
PCB-1254	N.D.	3.3	17	ug/kg					
PCB-1260	N.D.	4.9	17	ug/kg	113		77-127		
Batch number: 131920022A	Sample number(s): 7121776-7121777								
Aldrin	N.D.	0.17	0.83	ug/kg	83		73-119		
Alpha BHC	N.D.	0.17	0.83	ug/kg	93		72-126		
Beta BHC	N.D.	0.30	1.0	ug/kg	84		76-123		
Gamma BHC - Lindane	N.D.	0.17	0.83	ug/kg	88		72-128		
Chlordane	N.D.	4.0	17	ug/kg					
p,p-DDD	N.D.	0.33	1.7	ug/kg	95		76-138		
p,p-DDE	N.D.	0.33	1.7	ug/kg	84		76-126		
p,p-DDT	N.D.	0.35	1.7	ug/kg	83		72-131		
Delta BHC	N.D.	0.45	0.83	ug/kg	78		73-128		
Dieldrin	N.D.	0.33	1.7	ug/kg	92		78-135		
Endosulfan I	N.D.	0.22	0.83	ug/kg	86		62-125		
Endosulfan II	N.D.	0.33	1.7	ug/kg	83		68-128		
Endosulfan Sulfate	N.D.	0.33	1.7	ug/kg	87		80-137		
Endrin	N.D.	0.33	1.7	ug/kg	88		75-130		
Endrin Aldehyde	N.D.	0.33	1.7	ug/kg	76		68-128		
Heptachlor	N.D.	0.17	0.83	ug/kg	88		69-125		
Heptachlor Epoxide	N.D.	0.17	0.83	ug/kg	82		78-125		
Methoxychlor	N.D.	1.7	6.7	ug/kg	89		64-131		
Toxaphene	N.D.	14.	33	ug/kg					
Batch number: 131915708002	Sample number(s): 7121776-7121777								
Antimony	N.D.	0.740	2.00	mg/kg	107		80-120		
Arsenic	N.D.	0.700	2.00	mg/kg	102		80-120		
Barium	N.D.	0.0330	0.500	mg/kg	103		80-120		
Beryllium	N.D.	0.0670	0.500	mg/kg	104		80-120		
Cadmium	N.D.	0.0760	0.500	mg/kg	102		80-120		
Chromium	N.D.	0.160	1.50	mg/kg	101		80-120		
Copper	N.D.	0.290	1.00	mg/kg	104		80-120		
Lead	N.D.	0.500	1.50	mg/kg	102		80-120		
Nickel	N.D.	0.130	1.00	mg/kg	105		80-120		
Selenium	N.D.	0.800	2.00	mg/kg	103		80-120		
Silver	N.D.	0.170	0.500	mg/kg	116		80-120		
Thallium	N.D.	0.520	3.00	mg/kg	108		80-120		
Vanadium	N.D.	0.130	0.500	mg/kg	104		80-120		
Zinc	0.345 J	0.200	2.00	mg/kg	105		80-120		
Batch number: 131915711001	Sample number(s): 7121776-7121777								
Mercury	N.D.	0.0100	0.100	mg/kg	106		80-120		
Batch number: 13192102201B	Sample number(s): 7121776-7121777								
Total Cyanide (solid)	N.D.	0.18	0.50	mg/kg	96		90-110		

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 13192113201A	Sample number(s): 7121776-7121777								
Phenols (solids)	N.D.	1.2	3.5	mg/kg	96		80-120		
Batch number: 13191820001B	Sample number(s): 7121776-7121777								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: C131911AA	Sample number(s): 7121778 UNSPK: P119864								
Acetone	116	110	57-163	5	30				
Acrolein	95	92	29-149	3	30				
Acrylonitrile	109	111	56-161	1	30				
Allyl Chloride	83	90	67-139	7	30				
Benzene	97	109	87-126	11	30				
Bromobenzene	91	110	80-123	19	30				
Bromochloromethane	105	115	82-125	9	30				
Bromodichloromethane	94	113	82-133	18	30				
Bromoform	98	122	60-138	22	30				
Bromomethane	89	100	41-145	11	30				
2-Butanone	103	109	63-146	5	30				
n-Butylbenzene	96	115	83-131	19	30				
sec-Butylbenzene	95	115	84-128	19	30				
tert-Butylbenzene	94	115	84-135	20	30				
Carbon Tetrachloride	112	126	81-148	12	30				
Chlorobenzene	101	121	78-133	18	30				
Chloroethane	91	101	70-139	10	30				
Chloroform	100	114	86-136	13	30				
Chloromethane	76	84	55-152	10	30				
2-Chlorotoluene	94	114	81-120	19	30				
4-Chlorotoluene	97	117	82-119	19	30				
1,2-Dibromo-3-chloropropane	118	126	43-143	6	30				
Dibromochloromethane	99	121	79-125	21	30				
1,2-Dibromoethane	92	110	84-127	17	30				
Dibromomethane	92	109	83-126	16	30				
1,2-Dichlorobenzene	95	114	83-117	18	30				
1,3-Dichlorobenzene	94	115	81-118	19	30				
1,4-Dichlorobenzene	95	114	79-120	19	30				
Dichlorodifluoromethane	62	68	28-136	11	30				
1,1-Dichloroethane	97	106	88-136	9	30				
1,2-Dichloroethane	99	109	82-135	9	30				
1,1-Dichloroethene	109	119	83-150	9	30				
cis-1,2-Dichloroethene	98	109	82-129	10	30				
trans-1,2-Dichloroethene	105	117	88-127	11	30				
Dichlorofluoromethane	118	130	59-176	10	30				
1,2-Dichloropropane	98	113	91-126	14	30				
1,3-Dichloropropane	89	106	80-127	18	30				
2,2-Dichloropropane	107	118	80-134	10	30				

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1-Dichloropropene	104	116	86-139	10	30				
cis-1,3-Dichloropropene	82	95	74-132	15	30				
trans-1,3-Dichloropropene	86	102	71-128	17	30				
Ethyl ether	86	91	67-127	6	30				
Ethylbenzene	95	116	80-140	19	30				
Freon 113	113	125	87-158	10	30				
Hexachlorobutadiene	94	113	65-128	19	30				
Isopropylbenzene	97	119	81-133	20	30				
p-Isopropyltoluene	95	113	84-124	18	30				
Methyl Tertiary Butyl Ether	82	90	82-132	9	30				
4-Methyl-2-Pentanone	77	99	69-149	25	30				
Methylene Chloride	100	110	84-122	9	30				
n-Propylbenzene	94	112	79-131	18	30				
Styrene	99	120	63-151	20	30				
1,1,1,2-Tetrachloroethane	102	125	87-126	21	30				
1,1,2,2-Tetrachloroethane	86	109	75-131	23	30				
Tetrachloroethene	104	120	75-129	14	30				
Tetrahydrofuran	105	107	56-154	2	30				
Toluene	97	115	83-127	17	30				
1,2,3-Trichlorobenzene	75	93	73-125	22	30				
1,2,4-Trichlorobenzene	75*	95	77-120	24	30				
1,1,1-Trichloroethane	105	117	85-140	11	30				
1,1,2-Trichloroethane	94	114	85-129	19	30				
Trichloroethene	101	116	85-131	14	30				
Trichlorofluoromethane	99	110	67-161	10	30				
1,2,3-Trichloropropane	91	109	76-120	17	30				
1,2,4-Trimethylbenzene	95	115	87-126	19	30				
1,3,5-Trimethylbenzene	95	115	89-129	19	30				
Vinyl Chloride	86	94	65-151	9	30				
Xylene (Total)	99	119	81-137	19	30				

Batch number: X131911AA Sample number(s): 7121776-7121777 UNSPK: P121327

Acetone	96	31-195
Acrolein	80	10-165
Acrylonitrile	94	48-139
Allyl Chloride	83	55-154
Benzene	89	55-143
Bromobenzene	102	43-139
Bromochloromethane	114	60-137
Bromodichloromethane	93	53-136
Bromoform	104	38-124
Bromomethane	85	42-168
2-Butanone	101	37-163
n-Butylbenzene	97	30-146
sec-Butylbenzene	107	33-157
tert-Butylbenzene	102	41-152
Carbon Tetrachloride	98	45-153
Chlorobenzene	101	49-135
Chloroethane	72	39-152
Chloroform	97	61-142
Chloromethane	71	36-143
2-Chlorotoluene	100	42-146

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
4-Chlorotoluene	101		39-145						
1,2-Dibromo-3-chloropropane	104		30-139						
Dibromochloromethane	100		51-128						
1,2-Dibromoethane	105		54-129						
Dibromomethane	97		57-130						
1,2-Dichlorobenzene	99		36-133						
1,3-Dichlorobenzene	100		34-134						
1,4-Dichlorobenzene	100		35-136						
Dichlorodifluoromethane	80		26-151						
1,1-Dichloroethane	85		63-142						
1,2-Dichloroethane	102		49-150						
1,1-Dichloroethene	88		61-149						
cis-1,2-Dichloroethene	92		49-153						
trans-1,2-Dichloroethene	95		51-153						
Dichlorofluoromethane	86		48-177						
1,2-Dichloropropane	89		48-145						
1,3-Dichloropropane	97		45-150						
2,2-Dichloropropane	87		53-147						
1,1-Dichloropropene	101		54-145						
cis-1,3-Dichloropropene	90		35-151						
trans-1,3-Dichloropropene	92		30-149						
Ethylbenzene	99		44-141						
Freon 113	91		56-156						
Hexachlorobutadiene	99		10-155						
Isopropylbenzene	101		38-144						
p-Isopropyltoluene	104		29-152						
Methyl Tertiary Butyl Ether	71		55-129						
4-Methyl-2-pentanone	83		46-139						
Methylene Chloride	86		49-160						
n-Propylbenzene	106		39-157						
Styrene	73		35-134						
1,1,1,2-Tetrachloroethane	95		39-150						
1,1,2,2-Tetrachloroethane	104		40-152						
Tetrachloroethene	110		42-149						
Tetrahydrofuran	104		53-163						
Toluene	101		50-146						
1,2,3-Trichlorobenzene	86		10-140						
1,2,4-Trichlorobenzene	85		10-136						
1,1,1-Trichloroethane	86		43-150						
1,1,2-Trichloroethane	105		47-161						
Trichloroethene	103		53-144						
Trichlorofluoromethane	100		47-163						
1,2,3-Trichloropropane	118		45-154						
1,2,4-Trimethylbenzene	102		37-149						
1,3,5-Trimethylbenzene	102		38-150						
Vinyl Chloride	78		50-154						
Xylene (Total)	98		44-136						
Batch number: 13191SLC026	Sample number(s): 7121776-7121777 UNSPK: 7121776								
Acenaphthene	84	119	48-127	34*	30				
Acenaphthylene	75	80	49-121	6	30				
Anthracene	70	83	52-126	17	30				

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Benzo(a)anthracene	60	70	32-135	17	30				
Benzo(a)pyrene	61	71	36-138	14	30				
Benzo(b)fluoranthene	67	76	26-142	12	30				
Benzo(g,h,i)perylene	64	72	33-141	11	30				
Benzo(k)fluoranthene	61	71	47-129	14	30				
Chrysene	62	72	29-148	14	30				
Dibenz(a,h)anthracene	61	67	34-125	9	30				
Fluoranthene	66	81	47-135	20	30				
Fluorene	75	92	50-129	21	30				
Indeno(1,2,3-cd)pyrene	58	66	17-136	12	30				
1-Methylnaphthalene	103	153*	50-131	39*	30				
2-Methylnaphthalene	93	163*	28-144	55*	30				
Naphthalene	86	194*	31-148	75*	30				
Phenanthrene	65	89	29-142	31*	30				
Pyrene	58	70	26-143	19	30				
Batch number: 13191SLD026	Sample number(s): 7121776-7121777 UNSPK: 7121776								
Benzidine	30*	36	35-141	17	30				
4-Bromophenyl-phenylether	96	98	66-122	2	30				
Butylbenzylphthalate	95	96	42-146	1	30				
Di-n-butylphthalate	95	98	49-134	3	30				
4-Chloro-3-methylphenol	95	100	50-137	5	30				
bis(2-Chloroethoxy)methane	87	91	58-122	5	30				
bis(2-Chloroethyl)ether	97	96	54-128	1	30				
bis(2-Chloroisopropyl)ether	92	90	50-115	2	30				
2-Chloronaphthalene	110	98	50-140	11	30				
2-Chlorophenol	103	101	51-139	2	30				
4-Chlorophenyl-phenylether	94	99	65-117	5	30				
1,2-Dichlorobenzene	97	96	45-127	1	30				
1,3-Dichlorobenzene	96	96	46-123	1	30				
1,4-Dichlorobenzene	95	94	40-132	1	30				
3,3'-Dichlorobenzidine	43	48	10-143	11	30				
2,4-Dichlorophenol	98	102	54-135	4	30				
Diethylphthalate	95	98	53-132	4	30				
2,4-Dimethylphenol	96	100	39-147	5	30				
Dimethylphthalate	94	98	49-129	4	30				
4,6-Dinitro-2-methylphenol	61	49	10-148	21	30				
2,4-Dinitrophenol	35	28	20-143	21	30				
2,4-Dinitrotoluene	96	100	39-144	4	30				
2,6-Dinitrotoluene	97	101	65-124	4	30				
1,2-Diphenylhydrazine	99	102	59-128	3	30				
bis(2-Ethylhexyl)phthalate	96	98	38-151	1	30				
Hexachlorobenzene	94	96	46-132	2	30				
Hexachlorobutadiene	88	93	58-120	6	30				
Hexachlorocyclopentadiene	92	95	10-153	4	30				
Hexachloroethane	96	93	24-138	2	30				
Indeno(1,2,3-cd)pyrene	95	95	46-139	1	30				
Isophorone	92	97	59-122	5	30				
Nitrobenzene	92	96	46-133	4	30				
2-Nitrophenol	96	101	52-137	4	30				
4-Nitrophenol	75	78	25-142	4	30				
N-Nitroso-di-n-propylamine	93	92	45-133	1	30				

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
N-Nitrosodimethylamine	93	91	50-123	3	30				
N-Nitrosodiphenylamine	96	98	59-135	2	30				
Di-n-octylphthalate	95	99	48-155	4	30				
Pentachlorophenol	78	76	23-145	2	30				
Phenol	104	103	34-146	1	30				
1,2,4-Trichlorobenzene	93	98	66-116	5	30				
2,4,6-Trichlorophenol	95	98	41-142	3	30				
Batch number: 131910007A	Sample number(s): 7121776-7121777 UNSPK: P115381								
2,4-D	105	106	42-143	1	35				
Dalapon	65	59	19-109	9	50				
2,4-DB	140	147	10-179	5	50				
Dicamba	86	96	45-147	11	50				
Dinoseb	28	36	10-52	25	35				
2,4-DP (Dichloroprop)	128	124	32-171	3	50				
MCPA	85	86	23-169	1	50				
MCPP (Mecoprop)	130	95	24-164	31	50				
Pentachlorophenol	107	110	11-143	3	30				
2,4,5-T	122	124	12-172	2	35				
2,4,5-TP	131	121	10-142	8	35				
Batch number: 131910006A	Sample number(s): 7121776-7121777 UNSPK: 7121777								
PCB-1016	95	85	19-146	11	50				
PCB-1260	109	97	29-141	11	50				
Batch number: 131920022A	Sample number(s): 7121776-7121777 UNSPK: 7121776								
Aldrin	88	90	18-138	2	50				
Alpha BHC	21	42	14-140	68*	50				
Beta BHC	82	89	10-173	8	50				
Gamma BHC - Lindane	22*	43	30-137	64*	50				
p,p-DDD	78	88	43-149	12	50				
p,p-DDE	114	103	22-169	10	50				
p,p-DDT	53	71	12-193	30	50				
Delta BHC	19	35	13-153	58*	50				
Dieldrin	96	100	17-163	4	50				
Endosulfan I	23	45	8-137	64*	50				
Endosulfan II	21	41	10-156	65*	50				
Endosulfan Sulfate	24	47	10-181	63*	50				
Endrin	91	95	30-152	5	50				
Endrin Aldehyde	40	54	10-152	31	35				
Heptachlor	65	74	16-152	12	50				
Heptachlor Epoxide	85	89	17-167	4	50				
Methoxychlor	65	77	34-168	18	50				
Batch number: 131915708002	Sample number(s): 7121776-7121777 UNSPK: P121925 BKG: P121925								
Antimony	82	82	75-125	0	20	0.902 J	1.34 J	39* (1)	20
Arsenic	98	111	75-125	8	20	7.98	8.53	7 (1)	20
Barium	116	119	75-125	2	20	61.3	57.7	6	20
Beryllium	107	109	83-111	2	20	0.539	0.608	12 (1)	20
Cadmium	94	94	75-125	1	20	N.D.	N.D.	0 (1)	20
Chromium	124	163*	75-125	16	20	19.6	25.6	26*	20
Copper	107	110	75-125	2	20	5.22	5.58	7	20

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Lead	97	106	75-125	5	20	10.8	12.9	18	20
Nickel	103	104	75-125	0	20	8.61	8.27	4	20
Selenium	97	98	75-125	1	20	N.D.	N.D.	0 (1)	20
Silver	119	119	75-125	0	20	N.D.	0.179 J	200* (1)	20
Thallium	95	94	78-111	1	20	N.D.	N.D.	0 (1)	20
Vanadium	118	128*	75-125	6	20	25.9	26.6	3	20
Zinc	106	110	75-125	2	20	27.3	27.6	1	20
Batch number: 131915711001	Sample number(s): 7121776-7121777 UNSPK: P121950 BKG: P121950								
Mercury	106	111	80-120	4	20	0.0185 J	0.0173 J	7 (1)	20
Batch number: 13192102201B	Sample number(s): 7121776-7121777 UNSPK: 7121777 BKG: 7121777								
Total Cyanide (solid)	92		45-145			N.D.	N.D.	0 (1)	20
Batch number: 13192113201A	Sample number(s): 7121776-7121777 UNSPK: 7121776								
Phenols (solids)	89	99	19-156	11	20				
Batch number: 13191820001B	Sample number(s): 7121776-7121777 BKG: P113903								
Moisture						18.9	21.1	11*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 25-ml purge
Batch number: C131911AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7121778	111	104	99	93
Blank	111	104	98	93
LCS	105	100	103	101
LCSD	106	98	103	100
MS	105	103	103	101
MSD	105	105	103	102
Limits:	77-114	74-113	77-110	78-110

Analysis Name: 8260 Benzene and Toluene
Batch number: X131911AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7121776	103	105	96	93
7121777	109	106	97	93
Blank	101	100	98	92
LCS	100	101	101	97
LCSD	99	100	102	98
MS	99	101	102	97

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Surrogate Quality Control

Limits: 50-141 54-135 52-141 50-131

Analysis Name: SIM SVOA (microwave)
Batch number: 13191SLC026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7121776	87	88	109
7121777	68	69	87
Blank	99	102	123
LCS	97	101	118
MS	67	64	101
MSD	77	74	103
Limits:	54-129	61-134	55-129

Analysis Name: TCL 8270 (microwave)
Batch number: 13191SLD026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7121776	79	86	80	78	82	89
7121777	107	114	108	105	107	117
Blank	82	87	86	80	87	93
LCS	100	105	99	94	100	109
MS	100	106	91	90	97	105
MSD	100	105	100	96	100	108
Limits:	51-127	48-136	28-139	54-124	58-121	61-137

Analysis Name: PCBs in Soil (microwave)
Batch number: 131910006A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7121776	103	112
7121777	109	118
Blank	105	120
LCS	101	116
MS	99	117
MSD	92	108
Limits:	41-146	39-151

Analysis Name: Herbicide soils 8151A Master
Batch number: 131910007A

	2,4-Dichlorophenylacetic acid
7121776	82
7121777	73
Blank	74
LCS	99
MS	116
MSD	108
Limits:	28-152

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1402818
Reported: 07/12/13 at 11:03 AM

Surrogate Quality Control

Analysis Name: TCL Pesticides 8081A Soil
Batch number: 131920022A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7121776	79	81
7121777	99	110
Blank	89	104
LCS	92	108
MS	94	90
MSD	99	97
Limits:	36-146	45-150

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ExxonMobil Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 14739 — For Eurofins Lancaster Laboratories Environmental use only: Group # 1402818 Sample # 7121776-78

Instructions on reverse side correspond with circled numbers.

SCR#: _____

1 Client Information

Facility #/SID: May flower Pipeline Incident

Site Address: May Flower, Arkansas / Backfill Source

ExxonMobil PM: Mike Sixsmith

Cost Center/AFE:

Consultant/Office: 801 Corporate Center Drive Raleigh, NC 27607

Consultant PM: Steve Barrick

Consultant Phone #: 919-415-2287

Sampler: Brian Lovgren

2 Sample Identification / Collected

3 Grab / Composite

4 Matrix

Soil / Sediment / Water / Oil / Air / Ground / Surface / Potable / NPDES

5 Analyses Requested — Preservation Code

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	4 Matrix	Total # of Containers	5 Preservation Code: O	VOCs (8260)	Metals (6010B)	Mercury (7471A)	Cyanide (9012A)	PAH's SIM's	Pest/PCBs (8081/8082)	Herbicide (8151A)	SVOCs (8270C)	Phenols (9066)	6 Remarks
SO-RM-BF-001	7-9-13	1000	✓		Soil ☒	7	4	1	✓	✓	1	✓	✓	1	✓	Rush TAT of 24 hours
SO-TS-BF-001	7-9-13	1500	✓		Soil ☒	7	4	1	✓	✓	1	✓	✓	1	✓	
SO-BF-TB-070913	7-9-13	0900	✓		Water ✓	2										

Preservation Codes: H = HCl; T = Thiosulfate; N = HNO_3; B = NaOH; S = H_2SO_4; O = Other

6 Remarks

Rush TAT of 24 hours

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | (24 hour)

8 Data Package (circle if required)

Type I - Full
Type VI (Raw Data)
NJ Reduced
Other _____

EDD (circle if required)
Locus EIM (default)
Other _____

Relinquished by	Date	Time	Received by	Date	Time
73=3 Brian Lovgren	7-9-13	1700	FedEx	7-9-13	1700

Relinquished by Commercial Carrier: UPS ____ FedEx X Other _____

Received by: Brandy Bump — Date: 07-10-13 — Time: 925

Temperature Upon Receipt 0.9 °C

Custody Seals Intact? (Yes) No

eurofins | Lancaster Laboratories

Environmental Sample Administration Receipt Documentation Log

1402818

Client/Project: Exxon mobil

Date of Receipt: 9.10.13

Time of Receipt: 925

Source Code: SO-1

Shipping Container Sealed: (YES) NO

Custody Seal Present * : (YES) NO

* Custody seal was intact unless otherwise noted in the discrepancy section

Package: (Chilled) Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	DH21	0.4	TB	WI	Y	B	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: (0)

Paperwork Discrepancy/Unpacking Problems:

Unpacker Signature/Emp#: Brandy Barclay 2299 **Date/Time:** 9.10.13 951

Issued by Dept. 6042 Management

2174.06

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil
PO Box 4592
Houston TX 77210-4592

June 30, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 06/20/2014
Group Number: 1483338
SDG: PEO05
PO Number: 4410181435
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
061914-SIEVE-001 Composite Soil	7505943

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	ARCADIS	Attn: Rhiannon Parmalee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	Conestoga-Rovers & Associates	Attn: Chad Peltier
ELECTRONIC COPY TO	ExxonMobil c/o Arcadis	Attn: Jennifer Chandler

Respectfully Submitted,

Katherine A. Klinefelter

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1483338

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: 061914-SIEVE-001 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7505943
LL Group # 1483338
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 06/19/2014 13:30 by ZP

Submitted: 06/20/2014 08:00
Reported: 06/30/2014 14:13

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SIEVE SDG#: PEO05-01*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	97.1	0.50	0.50	1
07103	3.35 mm	n.a.	96.5	0.50	0.50	1
07103	2.36 mm	n.a.	95.5	0.50	0.50	1
07103	1.18 mm	n.a.	88.9	0.50	0.50	1
07103	0.6 mm	n.a.	77.6	0.50	0.50	1
07103	0.3 mm	n.a.	37.8	0.50	0.50	1
07103	0.15 mm	n.a.	9.0	0.50	0.50	1
07103	0.075 mm	n.a.	3.6	0.50	0.50	1
07103	0.064 mm	n.a.	2.5	0.50	0.50	1
07103	0.05 mm	n.a.	2.0	0.50	0.50	1
07103	0.02 mm	n.a.	1.0	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14171710301A	06/20/2014 20:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: ExxonMobil Group Number: 1483338
Reported: 06/30/14 at 02:13 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

ExxonMobil Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only
Acct. # 14739 Group # 1483338 Sample # 7505943
Instructions on reverse side correspond with circled numbers.

SCR#: _____

1 Client Information

Facility #/SID: Mayflower Pipeline Incident
Site Address: Mayflower, AR
ExxonMobil PM: Mike Sixsmith
Cost Center/AFE:
Consultant/Office: Arcadis
Consultant PM: Steve Barrick
Consultant Phone #:
Sampler: Zac Powers

2 Sample Identification | **Collected** Date | Time | **3** Grab | Composite | **4 Matrix** Soil | Sediment | Water: Potable | Ground | NPDES | Surface | Oil | Air | Total # of Containers | **5 Analyses Requested** Preservation Code | ASTM D 422

Sample Identification	Date	Time	Grab	Composite	Soil	Sediment	Potable	Ground	NPDES	Surface	Oil	Air	Total # of Containers	ASTM D 422
061914-SIEVE-001	6.19.14	1330	X ZP 6.19.14	X	X							1	X

Preservation Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)
Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package (circle if required)
Type I - Full
Type VI (Raw Data)
NJ Reduced
Other _____

EDD (circle if required)
Locus EIM (default)
Other _____

Relinquished by	Date	Time	Received by	Date	Time
	6.19.14	1400			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commercial Carrier: UPS ✓ FedEx ____ Other ____			Received by	Date 6/20/14	Time 0800

Temperature Upon Receipt N/A °C

Custody Seals Intact? Yes (No)

1483338

Katherine Klinefelter

From: Powers, Zachary <zpowers@craworld.com>
Sent: Monday, June 23, 2014 10:36 AM
To: Katherine Klinefelter
Cc: Peltier, Chad; Murphy, Mark; Chandler, Jennifer; Sixsmith, Michael L; Parmelee, Rhiannon
Subject: RE: Particle analysis sample

Yes.

Best,

Zac Powers
CRA Inc.
501.850.6610
501.224.1926

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Monday, June 23, 2014 9:27 AM
To: Powers, Zachary
Cc: Peltier, Chad; Murphy, Mark; Chandler, Jennifer; Sixsmith, Michael L; Parmelee, Rhiannon
Subject: RE: Particle analysis sample

Hello,

The sample was shipped to the lab at ambient temperature, not chilled with wet ice to <6 C. Per the grain size lab group leader, this should not have an impact on the analysis. Should the lab proceed with entry and analysis for grain size?

Thanks,

Kathy

Katherine Klinefelter
Principal Project Manager, Environmental Client Services

Eurofins Lancaster Laboratories
Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601
USA
Phone: +1 717-556-7256
Fax: +1 717-656-6766

1483338

Katherine,

See attached COC for the particle analysis sample.

Thanks,

Zac Powers
Conestoga-Rovers & Associates (CRA)
11719 Hinson Rd, Ste 100
Little Rock, AR 72212

Office: 501- 224-1926
Fax: 501-224-2313
Cell: 501-850-6610

zpowers@craworld.com
www.craworld.com

Think before you print

Perform every task the safe way, the right way, every time!

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Sample Administration Receipt Documentation Log

Doc Log ID: 17958

Group Number(s): 1483338

Client: Mayflower

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	06/20/2014 8:00
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	0
Custody Seal Present:	No	Trip Blank Type:	N/A
Custody Seal Intact:	N/A	Air Quality Samples Present:	No
Samples Chilled:	No	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	N/A		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Joseph Gruber (5200) at 08:34 on 06/20/2014

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

eurofins | Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil
PO Box 4592
Houston TX 77210-4592

July 25, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 07/10/2014
Group Number: 1487862
SDG: PEO11
PO Number: 4410181435
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
084949-070914-SIEVE-01 Grab Soil	7527882
084949-070914-SIEVE-02 Grab Soil	7527883
084949-070914-SIEVE-03 Grab Soil	7527884
084949-070914-SIEVE-04 Grab Soil	7527885
084949-070914-SIEVE-05 Grab Soil	7527886

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	ARCADIS	Attn: Rhiannon Parmalee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	ExxonMobil c/o Arcadis	Attn: Jennifer Chandler
ELECTRONIC COPY TO	Conestoga-Rovers & Associates	Attn: Chad Peltier

Respectfully Submitted,

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1487862

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: 084949-070914-SIEVE-01 Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7527882
LL Group # 1487862
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 08:45 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/25/2014 09:50

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SIEV1 SDG#: PEO11-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	97.4	0.50	0.50	1
07103	3.35 mm	n.a.	96.8	0.50	0.50	1
07103	2.36 mm	n.a.	95.5	0.50	0.50	1
07103	1.18 mm	n.a.	94.1	0.50	0.50	1
07103	0.6 mm	n.a.	80.0	0.50	0.50	1
07103	0.3 mm	n.a.	29.6	0.50	0.50	1
07103	0.15 mm	n.a.	4.0	0.50	0.50	1
07103	0.075 mm	n.a.	1.8	0.50	0.50	1
07103	0.064 mm	n.a.	1.0	0.50	0.50	1
07103	0.05 mm	n.a.	0.50	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14191710301A	07/10/2014 21:40	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SIEVE-02 Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7527883
LL Group # 1487862
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 08:55 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/25/2014 09:50

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SIEV2 SDG#: PEO11-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	96.9	0.50	0.50	1
07103	4.75 mm	n.a.	92.9	0.50	0.50	1
07103	3.35 mm	n.a.	91.9	0.50	0.50	1
07103	2.36 mm	n.a.	90.3	0.50	0.50	1
07103	1.18 mm	n.a.	88.7	0.50	0.50	1
07103	0.6 mm	n.a.	78.1	0.50	0.50	1
07103	0.3 mm	n.a.	43.6	0.50	0.50	1
07103	0.15 mm	n.a.	7.2	0.50	0.50	1
07103	0.075 mm	n.a.	2.5	0.50	0.50	1
07103	0.064 mm	n.a.	2.0	0.50	0.50	1
07103	0.05 mm	n.a.	1.0	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14191710301A	07/10/2014 21:40	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SIEVE-03 Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7527884
LL Group # 1487862
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:05 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/25/2014 09:50

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SIEV3 SDG#: PEO11-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	98.8	0.50	0.50	1
07103	3.35 mm	n.a.	98.0	0.50	0.50	1
07103	2.36 mm	n.a.	97.3	0.50	0.50	1
07103	1.18 mm	n.a.	88.7	0.50	0.50	1
07103	0.6 mm	n.a.	73.7	0.50	0.50	1
07103	0.3 mm	n.a.	40.4	0.50	0.50	1
07103	0.15 mm	n.a.	9.9	0.50	0.50	1
07103	0.075 mm	n.a.	2.1	0.50	0.50	1
07103	0.064 mm	n.a.	1.0	0.50	0.50	1
07103	0.05 mm	n.a.	0.50	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14191710301A	07/10/2014 21:40	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SIEVE-04 Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7527885
LL Group # 1487862
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:15 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/25/2014 09:50

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SIEV4 SDG#: PEO11-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	98.7	0.50	0.50	1
07103	3.35 mm	n.a.	98.2	0.50	0.50	1
07103	2.36 mm	n.a.	97.5	0.50	0.50	1
07103	1.18 mm	n.a.	94.1	0.50	0.50	1
07103	0.6 mm	n.a.	83.6	0.50	0.50	1
07103	0.3 mm	n.a.	39.2	0.50	0.50	1
07103	0.15 mm	n.a.	5.3	0.50	0.50	1
07103	0.075 mm	n.a.	1.7	0.50	0.50	1
07103	0.064 mm	n.a.	1.0	0.50	0.50	1
07103	0.05 mm	n.a.	0.50	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14191710301A	07/10/2014 21:40	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SIEVE-05 Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7527886
LL Group # 1487862
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:25 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/25/2014 09:50

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SIEV5 SDG#: PEO11-05*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	99.1	0.50	0.50	1
07103	3.35 mm	n.a.	98.1	0.50	0.50	1
07103	2.36 mm	n.a.	96.2	0.50	0.50	1
07103	1.18 mm	n.a.	88.7	0.50	0.50	1
07103	0.6 mm	n.a.	71.1	0.50	0.50	1
07103	0.3 mm	n.a.	36.8	0.50	0.50	1
07103	0.15 mm	n.a.	20.6	0.50	0.50	1
07103	0.075 mm	n.a.	9.7	0.50	0.50	1
07103	0.064 mm	n.a.	8.0	0.50	0.50	1
07103	0.05 mm	n.a.	6.0	0.50	0.50	1
07103	0.02 mm	n.a.	2.0	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14191710301A	07/10/2014 21:40	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487862
Reported: 07/25/14 at 09:50 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

ExxonMobil Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 14739

For Eurofins Lancaster Laboratories Environmental use only
Group # 148862 Sample # 7527882-86
Instructions on reverse side correspond with circled numbers.

SCR#:

1 Client Information

Facility #/SID: Mayflower Pipeline Incident
Site Address: Mayflower, AR
ExxonMobil PM: Mike Sixsmith
Cost Center/AFE:
Consultant/Office: Arcadis
Consultant PM: Steve Barrick
Consultant Phone #:
Sampler: Zac Powers

Preservation Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	4 Matrix: Soil	Water	Oil	Total # of Containers	5 Analyses Requested: ASTM D422	8270	8260	8081/8041	8082	8151	6010	7471	9030B/9034
084949-070914-SIEVE-01	7.9.14	0845	X		X			1	X								
084949-070914-SIEVE-02	7.9.14	0855	X		X			1	X								
084949-070914-SIEVE-03	7.9.14	0905	X		X			1	X								
084949-070914-SIEVE-04	7.9.14	0915	X		X			1	X								
084949-070914-SIEVE-05	7.9.14	0925	X		X			1	X								
ZP 7.9.14									X	X		ZP 7.9.14					
084949-070914-SANDCOMP-01	7.9.14	0930		X	X			3		X	X	X	X	X	X	X	X
084949-070914-TB-01	7-9-14	—				X		4			X						

TB vials recd @ lab + added to COC + analyzed per ZacPowers.
KAK 1885
7/10/14

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package (circle if required)

Type I - Full
Type VI (Raw Data)
NJ Reduced
Other

EDD (circle if required)
Locus EIM (default)
Other

Relinquished by	Date	Time	Received by	Date	Time
	7.9.14	1630			
Relinquished by Commercial Carrier: UPS ✓ FedEx ___ Other ___				7/10/14	0930

Temperature Upon Receipt 2.1 °C

Custody Seals Intact? Yes No

1487862

Katherine Klinefelter

From: Powers, Zachary <zpowers@craworld.com>
Sent: Friday, July 11, 2014 12:26 PM
To: Katherine Klinefelter
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

084949-070914-TB-01 Water will be just fine.

Best,

Zac Powers
CRA Inc.
501.850.6610
501.224.1926

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Friday, July 11, 2014 11:23 AM
To: Powers, Zachary
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad; Project Email Filing
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Please provide the sample ID for the Trip Blank to be added to the COC and sample entry group 1487881. Should the Trip Blank ID be entered as 084949-070914-TRIPBLANK-01 Water, or 084949-070914-TB-01 Water, or something else? An example of a previous Mayflower Trip Blank sample ID for LL sample # 7121778 is SO-BF-TB-070913 Water. Thanks!

From: Katherine Klinefelter
Sent: Thursday, July 10, 2014 4:43 PM
To: 'Powers, Zachary'
Cc: Patil, Sonal; Parmelee, Rhiannon
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Thanks Zac. Will do. It appears that 4 TB vials were received, not 3.

From: Powers, Zachary [mailto:zpowers@craworld.com]
Sent: Thursday, July 10, 2014 4:40 PM
To: Katherine Klinefelter
Cc: Patil, Sonal; Parmelee, Rhiannon
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Katherine,

Three 40mL voas should be analyzed for VOCs. My mistake for not showing that in the COC.

Best,

Zac Powers

CRA Inc.
501.850.6610
501.224.1926

1487862

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Thursday, July 10, 2014 3:23 PM
To: Powers, Zachary
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad; Project Email Filing
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Hello,

The samples were pre-entered based on the attached COC. A Trip Blank was also received with these samples but was not included on the COC. Is this Trip Blank to be added to the COC and analyzed for VOCs, or should it be discarded?

Thanks,

Kathy

Katherine Klinefelter
Principal Project Manager, Environmental Client Services

Eurofins Lancaster Laboratories
Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601
USA
Phone: +1 717-556-7256
Fax: +1 717-656-6766

Website: www.LancasterLabsEnv.com

Please note my new email address: KatherineKlinefelter@eurofinsus.com

From: Powers, Zachary [mailto:zpowers@craworld.com]
Sent: Wednesday, July 09, 2014 5:16 PM
To: Katherine Klinefelter; !US19_SA Env Entry
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad; Project Email Filing
Subject: 084949 - Mayflower sand analysis COC and tracking no

All,

See attached COC and tracking no. for Mayflower sand analysis.

Thanks,

Zac Powers
Conestoga-Rovers & Associates (CRA)
11719 Hinson Rd, Ste 100
Little Rock, AR 72212

1487862

Office: 501- 224-1926
Fax: 501-224-2313
Cell: 501-850-6610

zpowers@craworld.com
www.craworld.com

Think before you print

Perform every task the safe way, the right way, every time!

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CRA and GHD have merged! To learn more, visit www.CRAworld.com/ghd

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Sample Administration Receipt Documentation Log

Doc Log ID: 19625

Group Number(s): 1487862

Client: Mayflower

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	07/10/2014 9:30
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	AR		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	4
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	N/A		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Joseph Gruber (5200) at 11:00 on 07/10/2014

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT131	2.1	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil
PO Box 4592
Houston TX 77210-4592

July 22, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 07/10/2014
Group Number: 1487881
SDG: PEO10
PO Number: 4410181435
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
084949-070914-SANDCOMP-01 Composite Soil	7528001
084949-070914-TB-01 Water	7528002

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	ExxonMobil c/o Arcadis	Attn: Jennifer Chandler
ELECTRONIC COPY TO	ARCADIS	Attn: Rhiannon Parmalee
ELECTRONIC COPY TO	Conestoga-Rovers & Associates	Attn: Chad Peltier

Respectfully Submitted,

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1487881

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8270C, GC/MS Semivolatiles
Batch #: 14192SLF026 (Sample number(s): 7528001 UNSPK: P528860)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: 2,4-Dinitrophenol, Nitrobenzene, Hexachlorocyclopentadiene, 3,3'-Dichlorobenzidine

SW-846 8081A, Pesticides/PCBs

Sample #s: 7528001
Reporting limits were raised due to interference from the sample matrix.

SW-846 8141A, Pesticides
Batch #: 141970005A (Sample number(s): 7528001 UNSPK: 7528001)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: Malathion

SW-846 6010B, Metals
Batch #: 141955708001 (Sample number(s): 7528001 UNSPK: P530863 BKG: P530863)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Aluminum, Iron, Magnesium, Potassium, Antimony, Chromium, Manganese
Batch #: 142025708002 (Sample number(s): 7528001 UNSPK: P538755 BKG: P538755)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Calcium

SW-846 7471A, Metals
Batch #: 141955711001 (Sample number(s): 7528001 UNSPK: P528860 BKG: P528860)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Mercury

SW-846 9012B, Wet Chemistry

Batch #: 14192102201A (Sample number(s): 7528001 UNSPK: P526015 BKG: P526015)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Total Cyanide (solid)

SM 2540 G-1997, Wet Chemistry

Batch #: 14195820003B (Sample number(s): 7528001 BKG: P528860)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Moisture

Sample Description: 084949-070914-SANDCOMP-01 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7528001
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:30 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDC SDG#: PEO10-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.	7	21	1
10237	Benzene	71-43-2	N.D.	0.5	5	1
10237	Bromodichloromethane	75-27-4	N.D.	1	5	1
10237	Bromoform	75-25-2	N.D.	1	5	1
10237	Bromomethane	74-83-9	N.D.	2	5	1
10237	2-Butanone	78-93-3	N.D.	4	11	1
10237	Carbon Disulfide	75-15-0	N.D.	1	5	1
10237	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10237	Chlorobenzene	108-90-7	N.D.	1	5	1
10237	Chloroethane	75-00-3	N.D.	2	5	1
10237	Chloroform	67-66-3	N.D.	1	5	1
10237	Chloromethane	74-87-3	N.D.	2	5	1
10237	Cyclohexane	110-82-7	N.D.	1	5	1
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10237	Dibromochloromethane	124-48-1	N.D.	1	5	1
10237	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10237	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10237	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10237	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10237	Dichlorodifluoromethane	75-71-8	N.D.	2	5	1
10237	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10237	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10237	1,1-Dichloroethene	75-35-4	N.D.	1	5	1
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	1	5	1
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	1	5	1
10237	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10237	Ethylbenzene	100-41-4	N.D.	1	5	1
10237	Freon 113	76-13-1	N.D.	2	11	1
10237	2-Hexanone	591-78-6	N.D.	3	11	1
10237	Isopropylbenzene	98-82-8	N.D.	1	5	1
10237	Methyl Acetate	79-20-9	N.D.	2	5	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	5	1
10237	4-Methyl-2-pentanone	108-10-1	N.D.	3	11	1
10237	Methylcyclohexane	108-87-2	N.D.	1	5	1
10237	Methylene Chloride	75-09-2	N.D.	2	5	1
10237	Styrene	100-42-5	N.D.	1	5	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10237	Tetrachloroethene	127-18-4	N.D.	1	5	1
10237	Toluene	108-88-3	N.D.	1	5	1
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	5	1
10237	1,1,1-Trichloroethane	71-55-6	N.D.	1	5	1
10237	1,1,2-Trichloroethane	79-00-5	N.D.	1	5	1
10237	Trichloroethene	79-01-6	N.D.	1	5	1
10237	Trichlorofluoromethane	75-69-4	N.D.	2	5	1
10237	Vinyl Chloride	75-01-4	N.D.	1	5	1
10237	Xylene (Total)	1330-20-7	N.D.	1	5	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SANDCOMP-01 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7528001
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:30 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDC SDG#: PEO10-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles SW-846 8270C			**ug/kg**	**ug/kg**	**ug/kg**	
10727	Acenaphthene	83-32-9	N.D.	3	18	1
10727	Acenaphthylene	208-96-8	N.D.	3	18	1
10727	Acetophenone	98-86-2	N.D.	17	35	1
10727	Anthracene	120-12-7	N.D.	3	18	1
10727	Atrazine	1912-24-9	N.D.	35	170	1
10727	Benzaldehyde	100-52-7	N.D.	70	170	1
10727	Benzo(a)anthracene	56-55-3	N.D.	3	18	1
10727	Benzo(a)pyrene	50-32-8	N.D.	3	18	1
10727	Benzo(b)fluoranthene	205-99-2	N.D.	3	18	1
10727	Benzo(g,h,i)perylene	191-24-2	N.D.	3	18	1
10727	Benzo(k)fluoranthene	207-08-9	N.D.	3	18	1
10727	1,1'-Biphenyl	92-52-4	N.D.	17	35	1
10727	4-Bromophenyl-phenylether	101-55-3	N.D.	17	35	1
10727	Butylbenzylphthalate	85-68-7	N.D.	70	170	1
10727	Di-n-butylphthalate	84-74-2	N.D.	70	170	1
10727	Caprolactam	105-60-2	N.D.	35	170	1
10727	Carbazole	86-74-8	N.D.	17	35	1
10727	4-Chloro-3-methylphenol	59-50-7	N.D.	17	35	1
10727	4-Chloroaniline	106-47-8	N.D.	17	35	1
10727	bis(2-Chloroethoxy)methane	111-91-1	N.D.	17	35	1
10727	bis(2-Chloroethyl)ether	111-44-4	N.D.	17	35	1
10727	2-Chloronaphthalene	91-58-7	N.D.	7	35	1
10727	2-Chlorophenol	95-57-8	N.D.	17	35	1
10727	4-Chlorophenyl-phenylether	7005-72-3	N.D.	17	35	1
10727	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	17	35	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10727	Chrysene	218-01-9	N.D.	3	18	1
10727	Dibenz(a,h)anthracene	53-70-3	N.D.	3	18	1
10727	Dibenzofuran	132-64-9	N.D.	17	35	1
10727	3,3'-Dichlorobenzidine	91-94-1	N.D.	100	350	1
10727	2,4-Dichlorophenol	120-83-2	N.D.	17	35	1
10727	Diethylphthalate	84-66-2	N.D.	70	170	1
10727	2,4-Dimethylphenol	105-67-9	N.D.	17	35	1
10727	Dimethylphthalate	131-11-3	N.D.	70	170	1
10727	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	170	520	1
10727	2,4-Dinitrophenol	51-28-5	N.D.	310	1,000	1
10727	2,4-Dinitrotoluene	121-14-2	N.D.	70	170	1
10727	2,6-Dinitrotoluene	606-20-2	N.D.	17	35	1
10727	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	70	180	1
10727	Fluoranthene	206-44-0	N.D.	3	18	1
10727	Fluorene	86-73-7	N.D.	3	18	1
10727	Hexachlorobenzene	118-74-1	N.D.	3	18	1
10727	Hexachlorobutadiene	87-68-3	N.D.	17	35	1
10727	Hexachlorocyclopentadiene	77-47-4	N.D.	170	520	1
10727	Hexachloroethane	67-72-1	N.D.	35	170	1
10727	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	3	18	1
10727	Isophorone	78-59-1	N.D.	17	35	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SANDCOMP-01 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7528001
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:30 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDC SDG#: PEO10-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**	**ug/kg**	**ug/kg**	
10727	2-Methylnaphthalene	91-57-6	N.D.	3	18	1
10727	2-Methylphenol	95-48-7	N.D.	17	35	1
10727	4-Methylphenol	106-44-5	N.D.	17	35	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10727	Naphthalene	91-20-3	N.D.	3	18	1
10727	2-Nitroaniline	88-74-4	N.D.	17	35	1
10727	3-Nitroaniline	99-09-2	N.D.	70	170	1
10727	4-Nitroaniline	100-01-6	N.D.	70	170	1
10727	Nitrobenzene	98-95-3	N.D.	17	35	1
10727	2-Nitrophenol	88-75-5	N.D.	17	35	1
10727	4-Nitrophenol	100-02-7	N.D.	170	520	1
10727	N-Nitroso-di-n-propylamine	621-64-7	N.D.	17	35	1
10727	N-Nitrosodiphenylamine	86-30-6	N.D.	17	35	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10727	Di-n-octylphthalate	117-84-0	N.D.	70	170	1
10727	Pentachlorophenol	87-86-5	N.D.	35	180	1
10727	Phenanthrene	85-01-8	N.D.	3	18	1
10727	Phenol	108-95-2	N.D.	17	35	1
10727	Pyrene	129-00-0	N.D.	3	18	1
10727	2,4,5-Trichlorophenol	95-95-4	N.D.	17	35	1
10727	2,4,6-Trichlorophenol	88-06-2	N.D.	17	35	1
Herbicides	**SW-846 8151A**		**ug/kg**	**ug/kg**	**ug/kg**	
10401	2,4-D	94-75-7	N.D.	13	38	1
10401	Dalapon	75-99-0	N.D.	47	96	1
10401	2,4-DB	94-82-6	N.D.	6.6	18	1
10401	Dicamba	1918-00-9	N.D.	4.3	13	1
10401	Dinoseb	88-85-7	N.D.	9.6	26	1
	The QC window for dinoseb is advisory due to the erratic performance of the analyte using this method.					
10401	2,4-DP (Dichloroprop)	120-36-5	N.D.	9.6	18	1
10401	MCPA	94-74-6	N.D.	810	2,700	1
10401	MCPP (Mecoprop)	93-65-2	N.D.	800	2,700	1
10401	Pentachlorophenol	87-86-5	N.D.	0.35	1.8	1
10401	2,4,5-T	93-76-5	N.D.	0.87	1.8	1
10401	2,4,5-TP	93-72-1	N.D.	0.80	1.8	1
Pesticides	**SW-846 8141A**		**ug/kg**	**ug/kg**	**ug/kg**	
10408	Bolstar	35400-43-2	N.D.	23	71	1
10408	Coumaphos	56-72-4	N.D.	23	71	1
10408	Demeton-O	298-03-3	N.D.	23	71	1
10408	Demeton-S	126-75-0	N.D.	23	71	1
10408	Diazinon	333-41-5	N.D.	23	71	1
10408	Dichlorvos	62-73-7	N.D.	23	71	1
10408	Disulfoton	298-04-4	N.D.	23	71	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SANDCOMP-01 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7528001
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:30 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDC SDG#: PEO10-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Pesticides	**SW-846 8141A**		**ug/kg**	**ug/kg**	**ug/kg**	
10408	Dursban (Chlorpyrifos)	2921-88-2	N.D.	23	71	1
10408	EPN	2104-64-5	N.D.	23	71	1
10408	Ethion	563-12-2	N.D.	23	71	1
10408	Ethoprop	13194-48-4	N.D.	23	71	1
10408	Ethyl Parathion	56-38-2	N.D.	23	71	1
10408	Famphur	52-85-7	N.D.	23	71	1
10408	Fensulfothion	115-90-2	N.D.	53	210	1
10408	Fenthion	55-38-9	N.D.	23	71	1
10408	Guthion (Azinphos-methyl)	86-50-0	N.D.	32	71	1
10408	Malathion	121-75-5	N.D.	23	71	1
10408	Merphos	150-50-5	N.D.	23	71	1
10408	Methyl Parathion	298-00-0	N.D.	23	71	1
10408	Mevinphos	7786-34-7	N.D.	23	71	1
10408	Naled	300-76-5	N.D.	32	71	1
10408	Phorate	298-02-2	N.D.	23	71	1
10408	Ronnel	299-84-3	N.D.	23	71	1
10408	Stirofos	961-11-5	N.D.	23	71	1
10408	Tokuthion	34643-46-4	N.D.	23	71	1
10408	Trichloronate	327-98-0	N.D.	23	71	1
10408	Trithion	786-19-6	N.D.	23	71	1
Pesticides/PCBs	**SW-846 8081A**		**ug/kg**	**ug/kg**	**ug/kg**	
10738	Aldrin	309-00-2	N.D.	0.18	0.87	1
10738	Alpha BHC	319-84-6	N.D.	0.18	0.87	1
10738	Beta BHC	319-85-7	N.D.	0.31	1.0	1
10738	Gamma BHC - Lindane	58-89-9	N.D.	0.18	0.87	1
10738	Alpha Chlordane	5103-71-9	N.D.	0.18	0.87	1
10738	Chlordane	57-74-9	N.D.	4.2	18	1
10738	Gamma Chlordane	5103-74-2	N.D.	0.22	0.87	1
10738	o,p-DDD	53-19-0	N.D.	0.35	1.8	1
10738	p,p-DDD	72-54-8	N.D.	0.35	1.8	1
10738	o,p-DDE	3424-82-6	N.D.	0.35	1.8	1
10738	p,p-DDE	72-55-9	N.D.	0.35	1.8	1
10738	o,p-DDT	789-02-6	N.D.	0.35	1.8	1
10738	p,p-DDT	50-29-3	N.D.	0.37	1.8	1
10738	Delta BHC	319-86-8	N.D.	0.47	0.87	1
10738	Dieldrin	60-57-1	N.D.	0.35	1.8	1
10738	Endosulfan I	959-98-8	N.D.	0.23	0.87	1
10738	Endosulfan II	33213-65-9	N.D.	0.35	1.8	1
10738	Endosulfan Sulfate	1031-07-8	N.D.	0.35	1.8	1
10738	Endrin	72-20-8	N.D.	0.35	1.8	1
10738	Endrin Aldehyde	7421-93-4	N.D.	0.35	1.8	1
10738	Endrin Ketone	53494-70-5	N.D.	0.63	1.9	1
10738	Heptachlor	76-44-8	N.D.	0.18	0.87	1
10738	Heptachlor Epoxide	1024-57-3	N.D.	0.18	0.87	1
10738	Methoxychlor	72-43-5	N.D.	1.8	7.0	1
10738	Mirex	2385-85-5	N.D.	0.37	1.8	1
10738	Toxaphene	8001-35-2	N.D.	15	35	1

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SANDCOMP-01 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7528001
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:30 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDC SDG#: PEO10-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Pesticides/PCBs	**SW-846 8082**		**ug/kg**		**ug/kg**	**ug/kg**	
10736	PCB-1016	12674-11-2	N.D.		3.8	18	1
10736	PCB-1221	11104-28-2	N.D.		4.9	18	1
10736	PCB-1232	11141-16-5	N.D.		8.5	18	1
10736	PCB-1242	53469-21-9	N.D.		3.5	18	1
10736	PCB-1248	12672-29-6	N.D.		3.5	18	1
10736	PCB-1254	11097-69-1	N.D.		3.5	18	1
10736	PCB-1260	11096-82-5	N.D.		5.2	18	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	1,340		4.79	21.1	1
06944	Antimony	7440-36-0	N.D.		0.348	2.11	1
06935	Arsenic	7440-38-2	N.D.		0.675	2.11	1
06946	Barium	7440-39-3	13.1		0.0348	0.527	1
06947	Beryllium	7440-41-7	N.D.		0.0706	0.527	1
06949	Cadmium	7440-43-9	0.0612	J	0.0348	0.527	1
01650	Calcium	7440-70-2	268		3.96	20.9	1
06951	Chromium	7440-47-3	2.04		0.116	1.58	1
06952	Cobalt	7440-48-4	1.11		0.101	0.527	1
06953	Copper	7440-50-8	0.956	J	0.348	1.05	1
01654	Iron	7439-89-6	2,360		3.52	21.1	1
06955	Lead	7439-92-1	1.56	J	0.527	1.58	1
01657	Magnesium	7439-95-4	417		1.76	10.5	1
06958	Manganese	7439-96-5	37.0		0.0875	0.527	1
06961	Nickel	7440-02-0	1.99		0.158	1.05	1
01662	Potassium	7440-09-7	265		13.7	52.7	1
06936	Selenium	7782-49-2	N.D.		0.464	2.11	1
06966	Silver	7440-22-4	N.D.		0.200	0.527	1
01667	Sodium	7440-23-5	21.1	J	17.6	105	1
06925	Thallium	7440-28-0	N.D.		0.844	3.16	1
06971	Vanadium	7440-62-2	4.32		0.0960	0.527	1
06972	Zinc	7440-66-6	5.55		0.277	2.13	1
	SW-846 7471A		**mg/kg**		**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.		0.0105	0.105	1
Wet Chemistry	**SW-846 9012B**		**mg/kg**		**mg/kg**	**mg/kg**	
05898	Amenable Cyanide (solid)	n.a.	N.D.		0.18	0.51	1
05895	Total Cyanide (solid)	57-12-5	N.D.		0.19	0.53	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	6.1		0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SANDCOMP-01 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7528001
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:30 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDC SDG#: PEO10-01

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	TCL Volatiles 4.3 8260B Soil	SW-846 8260B	1	B141961AA	07/15/2014 17:14	Chelsea B Stong	1
00374	GC/MS - Bulk Soil Prep	SW-846 5035A Modified	1	201419135041	07/10/2014 15:27	Larry E Bevins	n.a.
00374	GC/MS - Bulk Soil Prep	SW-846 5035A Modified	2	201419135041	07/10/2014 15:27	Larry E Bevins	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5035A Modified	1	201419135041	07/10/2014 15:25	Larry E Bevins	n.a.
10727	TCL 4.3 SVOC 8270C Soil	SW-846 8270C	1	14192SLF026	07/15/2014 02:54	Holly Berry	1
10809	BNA Soil Microwave	SW-846 3546	1	14192SLF026	07/14/2014 08:05	Katheryne V Sponheimer	1
10401	Herbicides 8151A Soil	SW-846 8151A	1	141950001A	07/15/2014 15:43	Matthew S Listner	1
10408	OP Pesticides in Soil 8141A	SW-846 8141A	1	141970005A	07/18/2014 23:07	Richard A Shober	1
10738	8081A Full Scan minus HCB & sp	SW-846 8081A	1	141920020A	07/16/2014 19:55	Jamie L Brillhart	1
10736	PCBs 8082 Soil	SW-846 8082	1	141970008A	07/17/2014 20:32	Jessica L Miller	1
06677	OP Pesticides Solid Extraction	SW-846 3540C	1	141970005A	07/16/2014 15:15	Wanda F Oswald	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	141970008A	07/16/2014 16:20	JoElla L Rice	1
10496	PPL Pest. Microwave Extraction	SW-846 3546	1	141920020A	07/14/2014 09:00	Olivia Arosemena	1
04181	Herbicide Soil Extraction	SW-846 3550B/SW-846 8151A	1	141950001A	07/14/2014 13:20	Kelli M Barto	1
01643	Aluminum	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06944	Antimony	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06946	Barium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
01650	Calcium	SW-846 6010B	2	142025708002	07/22/2014 05:35	Tara L Snyder	1
06951	Chromium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06953	Copper	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
01654	Iron	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06955	Lead	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06958	Manganese	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06961	Nickel	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
01662	Potassium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06936	Selenium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06966	Silver	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
01667	Sodium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-SANDCOMP-01 Composite Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7528001
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014 09:30 by ZP

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDC SDG#: PEO10-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06925	Thallium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010B	1	141955708001	07/15/2014 21:50	Katlin N Cataldi	1
06972	Zinc	SW-846 6010B	1	141995708001	07/21/2014 02:43	Tara L Snyder	1
00159	Mercury	SW-846 7471A	1	141955711001	07/16/2014 13:05	Damary Valentin	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	141955708001	07/15/2014 06:55	James L Mertz	1
05708	SW SW846 ICP Digest	SW-846 3050B	2	141995708001	07/20/2014 10:43	James L Mertz	1
05708	SW SW846 ICP Digest	SW-846 3050B	3	142025708002	07/21/2014 19:47	Annamaria Kuhns	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	141955711001	07/15/2014 09:00	James L Mertz	1
05898	Amenable Cyanide (solid)	SW-846 9012B	1	14192103201A	07/14/2014 13:33	Joseph E McKenzie	1
05895	Total Cyanide (solid)	SW-846 9012B	1	14192102201A	07/14/2014 13:25	Joseph E McKenzie	1
05897	Amenable Cyanide Solid Distill	SW-846 9012B	1	14192103201A	07/11/2014 08:30	Nancy J Shoop	1
05896	Cyanide Solid Distillation	SW-846 9012B	1	14192102201A	07/11/2014 08:30	Nancy J Shoop	1
00111	Moisture	SM 2540 G-1997	1	14195820003B	07/14/2014 20:04	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-TB-01 Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7528002
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDT SDG#: PEO10-02TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
02898	Acetone	67-64-1	N.D.	3.0	5.0	1
02898	Benzene	71-43-2	N.D.	0.1	0.5	1
02898	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
02898	Bromoform	75-25-2	N.D.	0.1	0.5	1
02898	Bromomethane	74-83-9	N.D.	0.1	0.5	1
02898	2-Butanone	78-93-3	N.D.	1.0	5.0	1
02898	Carbon Disulfide	75-15-0	N.D.	0.4	0.5	1
02898	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
02898	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
02898	Chloroethane	75-00-3	N.D.	0.1	0.5	1
02898	Chloroform	67-66-3	N.D.	0.1	0.5	1
02898	Chloromethane	74-87-3	N.D.	0.2	0.5	1
02898	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
02898	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
02898	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
02898	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
02898	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
02898	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
02898	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
02898	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
02898	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
02898	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
02898	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
02898	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
02898	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
02898	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
02898	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
02898	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
02898	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
02898	Freon 113	76-13-1	N.D.	0.2	0.5	1
02898	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
02898	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
02898	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
02898	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
02898	4-Methyl-2-Pentanone	108-10-1	N.D.	1.0	5.0	1
02898	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
02898	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
02898	Styrene	100-42-5	N.D.	0.1	0.5	1
02898	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1
02898	Tetrachloroethene	127-18-4	N.D.	0.1	0.5	1
02898	Toluene	108-88-3	N.D.	0.1	0.5	1
02898	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
02898	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
02898	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
02898	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
02898	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
02898	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
02898	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-070914-TB-01 Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7528002
LL Group # 1487881
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/09/2014

Submitted: 07/10/2014 09:30
Reported: 07/22/2014 17:03

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SANDT SDG#: PEO10-02TB*

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02898	Silvertip & Mayflower VOCs8260	SW-846 8260B 25mL purge	1	I141913AA	07/11/2014 00:57	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	I141913AA	07/11/2014 00:57	Sara E Johnson	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: B141961AA	Sample number(s): 7528001								
Acetone	N.D.	7.	20	ug/kg	96	88	41-149	8	30
Benzene	N.D.	0.5	5	ug/kg	106	102	80-120	4	30
Bromodichloromethane	N.D.	1.	5	ug/kg	103	100	75-120	3	30
Bromoform	N.D.	1.	5	ug/kg	101	95	70-126	5	30
Bromomethane	N.D.	2.	5	ug/kg	87	83	32-162	4	30
2-Butanone	N.D.	4.	10	ug/kg	87	80	47-136	8	30
Carbon Disulfide	N.D.	1.	5	ug/kg	92	86	63-128	7	30
Carbon Tetrachloride	N.D.	1.	5	ug/kg	112	106	69-130	5	30
Chlorobenzene	N.D.	1.	5	ug/kg	109	106	80-120	3	30
Chloroethane	N.D.	2.	5	ug/kg	86	82	17-171	5	30
Chloroform	N.D.	1.	5	ug/kg	110	105	80-120	5	30
Chloromethane	N.D.	2.	5	ug/kg	103	97	56-120	6	30
Cyclohexane	N.D.	1.	5	ug/kg	97	92	55-125	6	30
1,2-Dibromo-3-chloropropane	N.D.	2.	5	ug/kg	90	82	50-132	9	30
Dibromochloromethane	N.D.	1.	5	ug/kg	107	104	77-120	3	30
1,2-Dibromoethane	N.D.	1.	5	ug/kg	104	101	80-120	3	30
1,2-Dichlorobenzene	N.D.	1.	5	ug/kg	111	108	80-120	3	30
1,3-Dichlorobenzene	N.D.	1.	5	ug/kg	108	103	80-120	4	30
1,4-Dichlorobenzene	N.D.	1.	5	ug/kg	109	105	80-120	3	30
Dichlorodifluoromethane	N.D.	2.	5	ug/kg	100	93	26-137	7	30
1,1-Dichloroethane	N.D.	1.	5	ug/kg	105	99	71-122	5	30
1,2-Dichloroethane	N.D.	1.	5	ug/kg	111	106	66-136	4	30
1,1-Dichloroethene	N.D.	1.	5	ug/kg	107	100	73-129	6	30
cis-1,2-Dichloroethene	N.D.	1.	5	ug/kg	107	102	80-120	5	30
trans-1,2-Dichloroethene	N.D.	1.	5	ug/kg	103	98	79-120	5	30
1,2-Dichloropropane	N.D.	1.	5	ug/kg	106	102	77-120	4	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/kg	101	98	74-120	3	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/kg	101	100	69-120	1	30
Ethylbenzene	N.D.	1.	5	ug/kg	107	103	80-120	4	30
Freon 113	N.D.	2.	10	ug/kg	102	96	64-137	7	30
2-Hexanone	N.D.	3.	10	ug/kg	71	65	40-129	9	30
Isopropylbenzene	N.D.	1.	5	ug/kg	109	105	76-120	3	30
Methyl Acetate	N.D.	2.	5	ug/kg	94	86	55-149	9	30
Methyl Tertiary Butyl Ether	N.D.	0.5	5	ug/kg	94	92	69-126	3	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/kg	74	68	43-133	8	30
Methylcyclohexane	N.D.	1.	5	ug/kg	94	88	58-134	7	30
Methylene Chloride	N.D.	2.	5	ug/kg	117	110	80-124	6	30
Styrene	N.D.	1.	5	ug/kg	108	106	76-120	2	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/kg	95	90	71-123	6	30
Tetrachloroethene	N.D.	1.	5	ug/kg	114	108	78-120	6	30
Toluene	N.D.	1.	5	ug/kg	110	105	80-120	4	30
1,2,4-Trichlorobenzene	N.D.	1.	5	ug/kg	101	99	68-120	2	30
1,1,1-Trichloroethane	N.D.	1.	5	ug/kg	105	100	63-135	4	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	N.D.	1.	5	ug/kg	104	101	80-120	3	30
Trichloroethene	N.D.	1.	5	ug/kg	108	101	80-120	6	30
Trichlorofluoromethane	N.D.	2.	5	ug/kg	105	98	58-133	8	30
Vinyl Chloride	N.D.	1.	5	ug/kg	104	98	59-120	5	30
Xylene (Total)	N.D.	1.	5	ug/kg	110	107	80-120	3	30
Batch number: I141913AA	Sample number(s): 7528002								
Acetone	N.D.	3.0	5.0	ug/l	97		60-139		
Benzene	N.D.	0.1	0.5	ug/l	96		80-120		
Bromodichloromethane	N.D.	0.1	0.5	ug/l	104		80-120		
Bromoform	N.D.	0.1	0.5	ug/l	102		72-138		
Bromomethane	N.D.	0.1	0.5	ug/l	109		62-126		
2-Butanone	N.D.	1.0	5.0	ug/l	102		63-137		
Carbon Disulfide	N.D.	0.4	0.5	ug/l	90		80-120		
Carbon Tetrachloride	N.D.	0.1	0.5	ug/l	104		80-135		
Chlorobenzene	N.D.	0.1	0.5	ug/l	99		80-120		
Chloroethane	N.D.	0.1	0.5	ug/l	107		68-120		
Chloroform	N.D.	0.1	0.5	ug/l	101		80-120		
Chloromethane	N.D.	0.2	0.5	ug/l	101		55-120		
Cyclohexane	N.D.	0.1	0.5	ug/l	77		69-120		
1,2-Dibromo-3-chloropropane	N.D.	0.2	0.5	ug/l	100		64-141		
Dibromochloromethane	N.D.	0.1	0.5	ug/l	102		80-126		
1,2-Dibromoethane	N.D.	0.1	0.5	ug/l	106		80-120		
1,2-Dichlorobenzene	N.D.	0.1	0.5	ug/l	104		80-120		
1,3-Dichlorobenzene	N.D.	0.1	0.5	ug/l	100		80-120		
1,4-Dichlorobenzene	N.D.	0.1	0.5	ug/l	103		80-120		
Dichlorodifluoromethane	N.D.	0.1	0.5	ug/l	89		27-141		
1,1-Dichloroethane	N.D.	0.1	0.5	ug/l	92		80-120		
1,2-Dichloroethane	N.D.	0.1	0.5	ug/l	99		80-127		
1,1-Dichloroethene	N.D.	0.1	0.5	ug/l	91		80-123		
cis-1,2-Dichloroethene	N.D.	0.1	0.5	ug/l	97		80-120		
trans-1,2-Dichloroethene	N.D.	0.1	0.5	ug/l	98		80-120		
1,2-Dichloropropane	N.D.	0.1	0.5	ug/l	97		80-120		
cis-1,3-Dichloropropene	N.D.	0.1	0.5	ug/l	93		80-120		
trans-1,3-Dichloropropene	N.D.	0.1	0.5	ug/l	105		80-120		
Ethylbenzene	N.D.	0.1	0.5	ug/l	100		80-120		
Freon 113	N.D.	0.2	0.5	ug/l	83		80-120		
2-Hexanone	N.D.	1.0	5.0	ug/l	106		62-128		
Isopropylbenzene	N.D.	0.1	0.5	ug/l	97		80-120		
Methyl Acetate	N.D.	0.3	1.0	ug/l	103		59-130		
Methyl Tertiary Butyl Ether	N.D.	0.1	0.5	ug/l	86		80-120		
4-Methyl-2-Pentanone	N.D.	1.0	5.0	ug/l	101		69-135		
Methylcyclohexane	N.D.	0.1	0.5	ug/l	92		80-120		
Methylene Chloride	N.D.	0.2	0.5	ug/l	99		80-120		
Styrene	N.D.	0.1	0.5	ug/l	106		80-120		
1,1,2,2-Tetrachloroethane	N.D.	0.1	0.5	ug/l	114		80-120		
Tetrachloroethene	N.D.	0.1	0.5	ug/l	90		80-120		
Toluene	N.D.	0.1	0.5	ug/l	100		80-120		
1,2,4-Trichlorobenzene	N.D.	0.1	0.5	ug/l	94		74-120		
1,1,1-Trichloroethane	N.D.	0.1	0.5	ug/l	100		80-120		
1,1,2-Trichloroethane	N.D.	0.1	0.5	ug/l	106		80-120		
Trichloroethene	N.D.	0.1	0.5	ug/l	98		80-120		
Trichlorofluoromethane	N.D.	0.1	0.5	ug/l	109		77-132		
Vinyl Chloride	N.D.	0.1	0.5	ug/l	105		59-124		
Xylene (Total)	N.D.	0.1	0.5	ug/l	99		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14192SLF026	Sample number(s): 7528001								
Acenaphthene	N.D.	3.	17	ug/kg	108		83-111		
Acenaphthylene	N.D.	3.	17	ug/kg	119		83-127		
Acetophenone	N.D.	17.	33	ug/kg	91		70-116		
Anthracene	N.D.	3.	17	ug/kg	108		82-118		
Atrazine	N.D.	33.	170	ug/kg	104		69-145		
Benzaldehyde	N.D.	67.	170	ug/kg	16		10-82		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	105		81-117		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	103		84-122		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	101		83-124		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	98		82-120		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	107		80-125		
1,1'-Biphenyl	N.D.	17.	33	ug/kg	104		76-117		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	107		84-120		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	107		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	104		84-120		
Caprolactam	N.D.	33.	170	ug/kg	99		75-118		
Carbazole	N.D.	17.	33	ug/kg	104		84-119		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	100		86-128		
4-Chloroaniline	N.D.	17.	33	ug/kg	44		10-105		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	96		71-121		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	88		77-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	115		63-146		
2-Chlorophenol	N.D.	17.	33	ug/kg	100		80-122		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	103		83-115		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	98		56-120		
Chrysene	N.D.	3.	17	ug/kg	110		77-116		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	98		81-123		
Dibenzofuran	N.D.	17.	33	ug/kg	105		85-115		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	47		10-125		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	105		81-123		
Diethylphthalate	N.D.	67.	170	ug/kg	106		82-113		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	102		83-120		
Dimethylphthalate	N.D.	67.	170	ug/kg	104		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	106		67-131		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	101		35-141		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	103		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	103		83-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	105		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	101		79-123		
Fluorene	N.D.	3.	17	ug/kg	106		86-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	101		80-121		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	94		78-121		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	134		66-159		
Hexachloroethane	N.D.	33.	170	ug/kg	95		78-114		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	94		84-121		
Isophorone	N.D.	17.	33	ug/kg	107		77-119		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	101		83-109		
2-Methylphenol	N.D.	17.	33	ug/kg	101		82-125		
4-Methylphenol	N.D.	17.	33	ug/kg	98		78-126		
Naphthalene	N.D.	3.	17	ug/kg	99		83-112		
2-Nitroaniline	N.D.	17.	33	ug/kg	102		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	93		66-128		
4-Nitroaniline	N.D.	67.	170	ug/kg	74		57-106		
Nitrobenzene	N.D.	17.	33	ug/kg	109		73-118		
2-Nitrophenol	N.D.	17.	33	ug/kg	100		83-125		

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
4-Nitrophenol	N.D.	170.	500	ug/kg	105		58-128		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	92		70-119		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	108		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	108		82-134		
Pentachlorophenol	N.D.	33.	170	ug/kg	100		57-128		
Phenanthrene	N.D.	3.	17	ug/kg	107		85-116		
Phenol	N.D.	17.	33	ug/kg	96		76-124		
Pyrene	N.D.	3.	17	ug/kg	106		81-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	100		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	106		81-123		
Batch number: 141950001A	Sample number(s): 7528001								
2,4-D	N.D.	12.	36	ug/kg	89		68-160		
Dalapon	N.D.	44.	90	ug/kg	42		13-128		
2,4-DB	N.D.	6.2	17	ug/kg	92		73-159		
Dicamba	N.D.	4.0	12	ug/kg	91		64-128		
Dinoseb	N.D.	9.0	24	ug/kg	18		10-56		
2,4-DP (Dichloroprop)	N.D.	9.0	17	ug/kg	108		86-178		
MCPA	N.D.	760.	2,500	ug/kg	80		61-123		
MCPP (Mecoprop)	N.D.	750.	2,500	ug/kg	83		59-128		
Pentachlorophenol	N.D.	0.33	1.7	ug/kg	92		64-148		
2,4,5-T	N.D.	0.82	1.7	ug/kg	93		69-157		
2,4,5-TP	N.D.	0.75	1.7	ug/kg	94		78-146		
Batch number: 141970005A	Sample number(s): 7528001								
Bolstar	N.D.	22.	67	ug/kg	104	104	85-115	1	35
Coumaphos	N.D.	22.	67	ug/kg	108	110	85-116	2	35
Demeton-O	N.D.	22.	67	ug/kg	88	87	49-115	1	35
Demeton-S	N.D.	22.	67	ug/kg	103	100	85-137	3	35
Diazinon	N.D.	22.	67	ug/kg	99	98	81-115	2	35
Dichlorvos	N.D.	22.	67	ug/kg	101	101	55-146	0	35
Disulfoton	N.D.	22.	67	ug/kg	101	101	75-116	0	35
Dursban (Chlorpyrifos)	N.D.	22.	67	ug/kg	103	102	88-115	2	35
EPN	N.D.	22.	67	ug/kg	94	97	76-118	3	35
Ethion	N.D.	22.	67	ug/kg	99	102	78-116	3	35
Ethoprop	N.D.	22.	67	ug/kg	100	101	79-115	0	35
Ethyl Parathion	N.D.	22.	67	ug/kg	101	102	81-115	0	35
Famphur	N.D.	22.	67	ug/kg	85	87	74-115	2	35
Fensulfothion	N.D.	50.	200	ug/kg	110	101	47-138	9	35
Fenthion	N.D.	22.	67	ug/kg	105	107	82-115	2	35
Guthion (Azinphos-methyl)	N.D.	30.	67	ug/kg	102	108	67-139	6	35
Malathion	N.D.	22.	67	ug/kg	103*	106*	83-102	3	35
Merphos	N.D.	22.	67	ug/kg	87	90	65-115	4	35
Methyl Parathion	N.D.	22.	67	ug/kg	104	107	85-115	2	35
Mevinphos	N.D.	22.	67	ug/kg	108	105	60-117	3	35
Naled	N.D.	30.	67	ug/kg	102	107	85-165	5	35
Phorate	N.D.	22.	67	ug/kg	102	102	85-115	1	35
Ronnel	N.D.	22.	67	ug/kg	103	103	88-109	0	35
Stirofos	N.D.	22.	67	ug/kg	111	113	84-124	2	35
Tokuthion	N.D.	22.	67	ug/kg	106	106	85-115	0	35
Trichloronate	N.D.	22.	67	ug/kg	102	101	81-115	1	35
Trithion	N.D.	22.	67	ug/kg	102	102	85-115	0	35
Batch number: 141920020A	Sample number(s): 7528001								
Aldrin	N.D.	0.17	0.83	ug/kg	100		60-118		
Alpha BHC	N.D.	0.17	0.83	ug/kg	90		55-135		

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
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Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Beta BHC	N.D.	0.30	1.0	ug/kg	85		67-129		
Gamma BHC - Lindane	N.D.	0.17	0.83	ug/kg	91		56-138		
Alpha Chlordane	N.D.	0.17	0.83	ug/kg	103		71-124		
Chlordane	N.D.	4.0	17	ug/kg					
Gamma Chlordane	N.D.	0.17	0.83	ug/kg	103		64-142		
o,p-DDD	N.D.	0.33	1.7	ug/kg					
p,p-DDD	N.D.	0.33	1.7	ug/kg	97		69-141		
o,p-DDE	N.D.	0.33	1.7	ug/kg					
p,p-DDE	N.D.	0.33	1.7	ug/kg	111		69-130		
o,p-DDT	N.D.	0.33	1.7	ug/kg					
p,p-DDT	N.D.	0.35	1.7	ug/kg	90		64-139		
Delta BHC	N.D.	0.45	0.83	ug/kg	89		59-137		
Dieldrin	N.D.	0.33	1.7	ug/kg	97		68-134		
Endosulfan I	N.D.	0.22	0.83	ug/kg	91		56-128		
Endosulfan II	N.D.	0.33	1.7	ug/kg	101		68-128		
Endosulfan Sulfate	N.D.	0.33	1.7	ug/kg	101		71-132		
Endrin	N.D.	0.33	1.7	ug/kg	93		70-132		
Endrin Aldehyde	N.D.	0.33	1.7	ug/kg	93		61-125		
Endrin Ketone	N.D.	0.60	1.8	ug/kg	99		69-126		
Heptachlor	N.D.	0.17	0.83	ug/kg	87		57-130		
Heptachlor Epoxide	N.D.	0.17	0.83	ug/kg	100		69-125		
Methoxychlor	N.D.	1.7	6.7	ug/kg	100		67-136		
Mirex	N.D.	0.35	1.7	ug/kg					
Toxaphene	N.D.	14.	33	ug/kg					
Batch number: 141970008A	Sample number(s): 7528001								
PCB-1016	N.D.	3.6	17	ug/kg	102		82-116		
PCB-1221	N.D.	4.6	17	ug/kg					
PCB-1232	N.D.	8.0	17	ug/kg					
PCB-1242	N.D.	3.3	17	ug/kg					
PCB-1248	N.D.	3.3	17	ug/kg					
PCB-1254	N.D.	3.3	17	ug/kg					
PCB-1260	N.D.	4.9	17	ug/kg	111		84-125		
Batch number: 141955708001	Sample number(s): 7528001								
Aluminum	36.6	4.54	20.0	mg/kg	119		80-120		
Antimony	N.D.	0.330	2.00	mg/kg	104		80-120		
Arsenic	N.D.	0.640	2.00	mg/kg	101		80-120		
Barium	0.0750 J	0.0330	0.500	mg/kg	102		80-120		
Beryllium	N.D.	0.0670	0.500	mg/kg	102		80-120		
Cadmium	N.D.	0.0330	0.500	mg/kg	102		80-120		
Chromium	N.D.	0.110	1.50	mg/kg	102		80-120		
Cobalt	N.D.	0.0960	0.500	mg/kg	103		80-120		
Copper	N.D.	0.330	1.00	mg/kg	104		80-120		
Iron	N.D.	3.34	20.0	mg/kg	106		80-120		
Lead	N.D.	0.500	1.50	mg/kg	104		80-120		
Magnesium	2.44 J	1.67	10.0	mg/kg	102		80-120		
Manganese	0.406 J	0.0830	0.500	mg/kg	103		80-120		
Nickel	N.D.	0.150	1.00	mg/kg	107		80-120		
Potassium	N.D.	13.0	50.0	mg/kg	102		80-120		
Selenium	N.D.	0.440	2.00	mg/kg	102		80-120		
Silver	N.D.	0.190	0.500	mg/kg	97		80-120		
Sodium	22.5 J	16.7	100	mg/kg	101		80-120		
Thallium	N.D.	0.800	3.00	mg/kg	116		80-120		
Vanadium	N.D.	0.0910	0.500	mg/kg	107		80-120		

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Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 141955711001	Sample number(s): 7528001								
Mercury	N.D.	0.0100	0.100	mg/kg	106		80-120		
Batch number: 141995708001	Sample number(s): 7528001								
Zinc	0.318 J	0.260	2.00	mg/kg	100		80-120		
Batch number: 142025708002	Sample number(s): 7528001								
Calcium	N.D.	3.79	20.0	mg/kg	101		80-120		
Batch number: 14192102201A	Sample number(s): 7528001								
Total Cyanide (solid)	N.D.	0.18	0.50	mg/kg	96		90-110		
Batch number: 14192103201A	Sample number(s): 7528001								
Amenable Cyanide (solid)	N.D.	0.18	0.50	mg/kg	0		-20-20		
Batch number: 14195820003B	Sample number(s): 7528001								
Moisture					100		99-101		

Sample Matrix Quality Control

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Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: B141961AA	Sample number(s): 7528001 UNSPK: P529632								
Acetone	89		31-195						
Benzene	112		55-143						
Bromodichloromethane	106		53-136						
Bromoform	92		50-144						
Bromomethane	106		42-168						
2-Butanone	75		37-163						
Carbon Disulfide	99		48-146						
Carbon Tetrachloride	121		51-165						
Chlorobenzene	112		49-135						
Chloroethane	105		39-152						
Chloroform	116		61-142						
Chloromethane	116		36-143						
Cyclohexane	106		57-151						
1,2-Dibromo-3-chloropropane	72		34-165						
Dibromochloromethane	106		51-128						
1,2-Dibromoethane	99		54-129						
1,2-Dichlorobenzene	104		36-133						
1,3-Dichlorobenzene	103		34-134						
1,4-Dichlorobenzene	104		35-136						
Dichlorodifluoromethane	119		26-151						
1,1-Dichloroethane	110		63-142						
1,2-Dichloroethane	112		54-143						
1,1-Dichloroethene	117		61-149						
cis-1,2-Dichloroethene	112		67-135						
trans-1,2-Dichloroethene	110		64-144						
1,2-Dichloropropane	111		54-144						
cis-1,3-Dichloropropene	102		45-137						

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Quality Control Summary

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Sample Matrix Quality Control

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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
trans-1,3-Dichloropropene	100		51-134						
Ethylbenzene	112		44-141						
Freon 113	118		56-156						
2-Hexanone	59		32-160						
Isopropylbenzene	112		38-144						
Methyl Acetate	80		48-161						
Methyl Tertiary Butyl Ether	91		55-129						
4-Methyl-2-pentanone	64		46-139						
Methylcyclohexane	96		39-168						
Methylene Chloride	123		60-149						
Styrene	107		35-134						
1,1,2,2-Tetrachloroethane	90		29-182						
Tetrachloroethene	120		42-149						
Toluene	116		50-146						
1,2,4-Trichlorobenzene	75		10-136						
1,1,1-Trichloroethane	111		52-146						
1,1,2-Trichloroethane	101		58-152						
Trichloroethene	113		53-144						
Trichlorofluoromethane	125		47-163						
Vinyl Chloride	121		50-154						
Xylene (Total)	114		44-136						
Batch number: I141913AA	Sample number(s): 7528002 UNSPK: P525820								
Acetone	99	80	57-163	18	30				
Benzene	103	104	87-126	1	30				
Bromodichloromethane	111	113	82-133	2	30				
Bromoform	98	99	60-138	1	30				
Bromomethane	115	117	66-130	1	30				
2-Butanone	104	99	56-160	5	30				
Carbon Disulfide	100	101	84-141	1	30				
Carbon Tetrachloride	115	116	81-148	1	30				
Chlorobenzene	103	103	78-133	1	30				
Chloroethane	116	118	70-139	2	30				
Chloroform	105	111	86-136	4	30				
Chloromethane	109	112	49-135	2	30				
Cyclohexane	90	92	75-122	2	30				
1,2-Dibromo-3-chloropropane	101	99	53-163	2	30				
Dibromochloromethane	103	104	79-125	1	30				
1,2-Dibromoethane	110	111	84-127	1	30				
1,2-Dichlorobenzene	106	107	83-117	1	30				
1,3-Dichlorobenzene	104	105	79-132	1	30				
1,4-Dichlorobenzene	106	107	79-120	0	30				
Dichlorodifluoromethane	100	100	28-136	0	30				
1,1-Dichloroethane	99	100	81-126	2	30				
1,2-Dichloroethane	104	104	82-135	1	30				
1,1-Dichloroethene	103	104	86-132	2	30				
cis-1,2-Dichloroethene	102	104	82-129	2	30				
trans-1,2-Dichloroethene	105	106	88-127	2	30				
1,2-Dichloropropane	102	104	91-126	2	30				
cis-1,3-Dichloropropene	99	102	74-132	3	30				
trans-1,3-Dichloropropene	109	112	71-128	3	30				
Ethylbenzene	105	106	80-140	1	30				

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Sample Matrix Quality Control

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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Freon 113	93	94	84-136	0	30				
2-Hexanone	112	115	51-149	2	30				
Isopropylbenzene	104	106	81-133	1	30				
Methyl Acetate	107	112	60-128	5	30				
Methyl Tertiary Butyl Ether	92	95	71-119	4	30				
4-Methyl-2-Pentanone	108	111	69-149	3	30				
Methylcyclohexane	108	110	88-126	2	30				
Methylene Chloride	103	104	77-135	1	30				
Styrene	108	109	71-138	1	30				
1,1,2,2-Tetrachloroethane	116	119	75-131	3	30				
Tetrachloroethene	96	97	75-129	0	30				
Toluene	105	107	83-127	2	30				
1,2,4-Trichlorobenzene	101	105	77-120	4	30				
1,1,1-Trichloroethane	110	111	85-140	1	30				
1,1,2-Trichloroethane	108	110	85-129	2	30				
Trichloroethene	105	107	85-131	2	30				
Trichlorofluoromethane	121	124	73-139	2	30				
Vinyl Chloride	118	119	62-135	1	30				
Xylene (Total)	104	105	81-137	1	30				
Batch number: 14192SLF026	Sample number(s): 7528001 UNSPK: P528860								
Acenaphthene	103	101	61-128	2	30				
Acenaphthylene	110	112	67-130	1	30				
Acetophenone	92	94	57-118	2	30				
Anthracene	101	102	41-142	0	30				
Atrazine	103	98	34-152	6	30				
Benzaldehyde	26	26	10-85	0	30				
Benzo(a)anthracene	91	91	32-150	2	30				
Benzo(a)pyrene	98	96	36-151	2	30				
Benzo(b)fluoranthene	93	87	29-150	6	30				
Benzo(g,h,i)perylene	94	86	41-147	9	30				
Benzo(k)fluoranthene	98	99	44-145	0	30				
1,1'-Biphenyl	102	101	64-120	2	30				
4-Bromophenyl-phenylether	98	102	66-122	3	30				
Butylbenzylphthalate	101	103	67-126	1	30				
Di-n-butylphthalate	100	100	70-124	0	30				
Caprolactam	88	84	34-131	6	30				
Carbazole	99	102	63-126	1	30				
4-Chloro-3-methylphenol	92	93	61-131	1	30				
4-Chloroaniline	61	57	11-114	8	30				
bis(2-Chloroethoxy)methane	93	88	58-122	6	30				
bis(2-Chloroethyl)ether	96	94	66-122	3	30				
2-Chloronaphthalene	106	102	50-140	5	30				
2-Chlorophenol	96	97	71-130	0	30				
4-Chlorophenyl-phenylether	95	95	65-117	1	30				
2,2'-oxybis(1-Chloropropane)	101	103	47-120	2	30				
Chrysene	92	90	28-146	2	30				
Dibenz(a,h)anthracene	99	93	54-142	7	30				
Dibenzofuran	96	100	65-124	3	30				
3,3'-Dichlorobenzidine	0*	0*	10-143	0	30				
2,4-Dichlorophenol	95	92	54-135	4	30				
Diethylphthalate	97	96	66-120	1	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2,4-Dimethylphenol	91	91	62-132	1	30				
Dimethylphthalate	98	101	69-119	2	30				
4,6-Dinitro-2-methylphenol	59	57	10-148	4	30				
2,4-Dinitrophenol	0*	0*	20-143	0	30				
2,4-Dinitrotoluene	91	89	39-144	3	30				
2,6-Dinitrotoluene	93	91	54-134	3	30				
bis(2-Ethylhexyl)phthalate	101	103	60-134	1	30				
Fluoranthene	95	91	30-151	5	30				
Fluorene	101	98	55-128	4	30				
Hexachlorobenzene	93	97	46-132	3	30				
Hexachlorobutadiene	94	94	65-125	1	30				
Hexachlorocyclopentadiene	0*	0*	10-153	0	30				
Hexachloroethane	100	99	24-138	2	30				
Indeno(1,2,3-cd)pyrene	88	87	44-147	2	30				
Isophorone	102	103	68-119	0	30				
2-Methylnaphthalene	97	96	39-140	2	30				
2-Methylphenol	95	96	62-133	0	30				
4-Methylphenol	96	97	59-132	0	30				
Naphthalene	100	98	44-142	3	30				
2-Nitroaniline	91	90	64-131	2	30				
3-Nitroaniline	75	73	31-145	4	30				
4-Nitroaniline	72	72	30-131	1	30				
Nitrobenzene	114	128*	63-125	11	30				
2-Nitrophenol	87	89	45-146	1	30				
4-Nitrophenol	105	93	25-142	13	30				
N-Nitroso-di-n-propylamine	94	95	58-126	0	30				
N-Nitrosodiphenylamine	100	102	59-135	0	30				
Di-n-octylphthalate	108	108	48-155	1	30				
Pentachlorophenol	79	83	23-145	4	30				
Phenanthrene	101	99	34-147	2	30				
Phenol	95	97	61-130	1	30				
Pyrene	94	90	29-148	4	30				
2,4,5-Trichlorophenol	91	91	64-131	2	30				
2,4,6-Trichlorophenol	93	92	60-136	2	30				
Batch number: 141950001A	Sample number(s): 7528001 UNSPK: P521711								
2,4-D	82	94	42-143	13	35				
Dalapon	34	35	16-98	2	50				
2,4-DB	89	98	10-179	10	50				
Dicamba	85	96	47-150	12	50				
Dinoseb	46	42	10-115	9	35				
2,4-DP (Dichloroprop)	100	124	32-171	21	50				
MCPA	72	81	54-138	12	50				
MCPP (Mecoprop)	74	83	46-138	12	50				
Pentachlorophenol	78	89	11-143	13	30				
2,4,5-T	84	99	12-172	17	35				
2,4,5-TP	82	94	65-156	13	35				
Batch number: 141970005A	Sample number(s): 7528001 UNSPK: 7528001								
Bolstar	103	103	46-142	0	35				
Coumaphos	111	110	65-151	0	35				
Demeton-O	88	88	16-100	0	35				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Demeton-S	99	99	65-145	0	35				
Diazinon	99	95	48-135	5	35				
Dichlorvos	99	100	71-138	1	35				
Disulfoton	102	104	39-129	2	35				
Dursban (Chlorpyrifos)	103	103	48-142	0	35				
EPN	96	93	39-158	3	35				
Ethion	102	102	44-139	0	35				
Ethoprop	101	100	63-112	1	35				
Ethyl Parathion	101	101	56-139	0	35				
Famphur	85	86	30-128	1	35				
Fensulfothion	100	94	36-181	7	35				
Fenthion	107	107	73-125	0	35				
Guthion (Azinphos-methyl)	109	107	25-218	3	35				
Malathion	106	105	68-119	1	35				
Merphos	83	83	10-107	0	35				
Methyl Parathion	110	108	72-146	2	35				
Mevinphos	107	102	58-121	4	35				
Naled	101	100	56-114	1	35				
Phorate	101	102	53-123	0	35				
Ronnel	103	104	78-123	1	35				
Stirofos	109	110	48-145	1	35				
Tokuthion	107	106	78-134	1	35				
Trichloronate	102	102	67-107	0	35				
Trithion	102	100	65-131	2	35				
Batch number: 141920020A	Sample number(s): 7528001 UNSPK: P521711								
Aldrin	77	80	18-138	3	50				
Alpha BHC	75	80	14-140	6	50				
Beta BHC	75	73	42-133	3	50				
Gamma BHC - Lindane	66	79	30-137	19	50				
Alpha Chlordane	80	81	10-173	1	50				
Gamma Chlordane	94	95	27-143	1	50				
p,p-DDD	96	102	43-149	6	50				
p,p-DDE	109	102	35-152	7	50				
p,p-DDT	87	92	12-193	5	50				
Delta BHC	78	83	13-153	7	50				
Dieldrin	79	78	41-153	0	50				
Endosulfan I	78	76	26-146	2	50				
Endosulfan II	80	85	34-141	6	50				
Endosulfan Sulfate	95	109	10-181	13	50				
Endrin	55	60	30-152	6	50				
Endrin Aldehyde	72	81	23-138	12	35				
Endrin Ketone	87	93	30-148	8	50				
Heptachlor	74	76	16-152	4	50				
Heptachlor Epoxide	77	84	33-144	9	50				
Methoxychlor	88	93	41-161	5	50				
Batch number: 141970008A	Sample number(s): 7528001 UNSPK: P534237								
PCB-1016	101	103	41-135	2	50				
PCB-1260	104	106	38-148	2	50				
Batch number: 141955708001	Sample number(s): 7528001 UNSPK: P530863 BKG: P530863								

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Aluminum	3537 (2)	4379 (2)	75-125	5	20	24,300	25,700	6	20
Antimony	31*	29*	75-125	8	20	0.377 J	0.370 J	2 (1)	20
Arsenic	92	94	75-125	1	20	5.96	6.13	3 (1)	20
Barium	108	101	75-125	4	20	181	188	4	20
Beryllium	104	103	83-119	2	20	0.611	0.654	7 (1)	20
Cadmium	90	90	75-120	1	20	N.D.	N.D.	0 (1)	20
Chromium	125	153*	75-125	6	20	57.3	58.6	2	20
Cobalt	94	86	78-113	8	20	14.6	16.1	10	20
Copper	107	108	75-125	0	20	34.1	33.1	3	20
Iron	2063 (2)	3064 (2)	75-125	3	20	31,400	29,800	5	20
Lead	88	85	75-125	3	20	7.99	8.15	2	20
Magnesium	188 (2)	205 (2)	75-125	1	20	5,670	5,580	2	20
Manganese	292 (2)	61 (2)	75-125	17	20	567	656	15	20
Nickel	93	96	75-125	1	20	58.9	55.2	7	20
Potassium	159*	153*	75-125	2	20	1,690	1,790	6	20
Selenium	85	82	75-125	5	20	N.D.	N.D.	0 (1)	20
Silver	97	96	75-125	2	20	N.D.	N.D.	0 (1)	20
Sodium	105	104	75-125	2	20	196	209	6 (1)	20
Thallium	100	100	78-119	1	20	2.38 J	2.78 J	15 (1)	20
Vanadium	113	113	75-125	1	20	60.7	64.2	6	20
Batch number: 141955711001	Sample number(s): 7528001 UNSPK: P528860 BKG: P528860								
Mercury	-80 (2)	81 (2)	80-120	14	20	1.86	1.88	1 (1)	20
Batch number: 141995708001	Sample number(s): 7528001 UNSPK: 7528001 BKG: 7528001								
Zinc	100	99	75-125	0	20	5.21	5.95	13 (1)	20
Batch number: 142025708002	Sample number(s): 7528001 UNSPK: P538755 BKG: P538755								
Calcium	240 (2)	287 (2)	75-125	4	20	4,000	4,070	2	20
Batch number: 14192102201A	Sample number(s): 7528001 UNSPK: P526015 BKG: P526015								
Total Cyanide (solid)	89		68-134			N.D.	0.42 J	200* (1)	20
Batch number: 14192103201A	Sample number(s): 7528001 UNSPK: P521711 BKG: P521711								
Amenable Cyanide (solid)	0		-20-20			N.D.	N.D.	0 (1)	20
Batch number: 14195820003B	Sample number(s): 7528001 BKG: P528860								
Moisture						10.5	9.1	14*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 Benzene and Toluene
Batch number: B141961AA

Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Surrogate Quality Control

7528001	103	100	101	93
Blank	105	108	100	95
LCS	104	102	102	98
LCSD	102	99	103	99
MS	103	101	105	96
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 25-ml purge
Batch number: I141913AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7528002	101	102	97	99
Blank	104	102	97	96
LCS	100	99	100	102
MS	101	101	99	103
MSD	100	101	99	102
Limits:	77-114	74-113	77-110	78-110

Analysis Name: TCL 8270 (microwave)
Batch number: 14192SLF026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7528001	94	97	90	97	99	108
Blank	90	95	94	94	99	108
LCS	93	95	94	95	100	108
MS	92	93	83	91	95	100
MSD	93	92	82	92	94	100
Limits:	52-129	51-139	36-142	60-120	69-120	66-137

Analysis Name: TCL Pesticides 8081A Soil
Batch number: 141920020A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7528001	88	105
Blank	86	103
LCS	90	104
MS	77	107
MSD	80	119
Limits:	43-127	54-143

Analysis Name: Herbicide soils 8151A Master
Batch number: 141950001A

	2,4-Dichlorophenylacetic acid
7528001	81
Blank	80
LCS	92
MS	80
MSD	87

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: ExxonMobil Group Number: 1487881
Reported: 07/22/14 at 05:03 PM

Surrogate Quality Control

Limits: 37-144

Analysis Name: OP Pesticides in Soil 8141A
Batch number: 141970005A

	2-Nitro-m-xylene
7528001	72
Blank	70
LCS	86
LCSD	82
MS	83
MSD	82
Limits:	50-140

Analysis Name: PCBs in Soil (microwave)
Batch number: 141970008A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7528001	109	125
Blank	108	113
LCS	109	119
MS	98	109
MSD	103	112
Limits:	41-146	48-151

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

ExxonMobil Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only
Acct. # 14739 Group # 1487881 Sample # 752800 1-02
Instructions on reverse side correspond with circled numbers.

SCR#: _____

1 Client Information

Facility #/SID: Mayflower Pipeline Incident
Site Address: Mayflower, AR
ExxonMobil PM: Mike Sixsmith
Cost Center/AFE:
Consultant/Office: Arcadis
Consultant PM: Steve Barrick
Consultant Phone #:
Sampler: Zac Powers

4 Matrix

Sediment ☐ Soil ☒ | Ground ☐ Potable ☐ Water | Surface ☐ NPDES ☐ | Air ☐ Oil ☐

3 Grab / Composite

2 Sample Identification | Collected Date | Collected Time | Grab | Composite | Total # of Containers | **5 Analyses Requested / Preservation Code**: ASTM D422 | 8270 | 8260 | 8081/8041 | 8082 | 8151 | 6010 | 7471 | 9030B/9034

Sample Identification	Date	Time	Grab	Composite	Soil	Water	Total # of Containers	ASTM D422	8270	8260	8081/8041	8082	8151	6010	7471	9030B/9034
084949-070914-SIEVE-01	7.9.14	0845	X		X		1	X								
084949-070914-SIEVE-02	7.9.14	0855	X		X		1	X								
084949-070914-SIEVE-03	7.9.14	0905	X		X		1	X								
084949-070914-SIEVE-04	7.9.14	0915	X		X		1	X								
084949-070914-SIEVE-05	7.9.14	0925	X		X		1	X								
ZP 7.9.14								X	X		ZP	7.9.14				
084949-070914-SANDCOMP-01	7.9.14	0930		X	X		3		X	X	X	X	X	X	X	X
084949-070914-TB-01	7-9-14	—				X	4			X						

TB Vials Reid@lab & added to COC & analyzed per Zac Powers. KAK 1885 7/10/14

Preservation Codes
H = HCl | T = Thiosulfate
N = HNO_3 | B = NaOH
S = H_2SO_4 | O = Other

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)
Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package (circle if required)
Type I - Full
Type VI (Raw Data)
NJ Reduced
Other _____

EDD (circle if required)
Locus EIM (default)
Other _____

	Relinquished by	Date	Time	Received by	Date	Time
1		7.9.14	1630			
2						
3						
Relinquished by Commercial Carrier: UPS ✓ FedEx ____ Other ____						

Temperature Upon Receipt 2.1 °C

Custody Seals Intact? Yes / No

9

1487881

Katherine Klinefelter

From: Powers, Zachary <zpowers@craworld.com>
Sent: Friday, July 11, 2014 12:26 PM
To: Katherine Klinefelter
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

084949-070914-TB-01 Water will be just fine.

Best,

Zac Powers
CRA Inc.
501.850.6610
501.224.1926

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Friday, July 11, 2014 11:23 AM
To: Powers, Zachary
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad; Project Email Filing
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Please provide the sample ID for the Trip Blank to be added to the COC and sample entry group 1487881. Should the Trip Blank ID be entered as 084949-070914-TRIPBLANK-01 Water, or 084949-070914-TB-01 Water, or something else? An example of a previous Mayflower Trip Blank sample ID for LL sample # 7121778 is SO-BF-TB-070913 Water. Thanks!

From: Katherine Klinefelter
Sent: Thursday, July 10, 2014 4:43 PM
To: 'Powers, Zachary'
Cc: Patil, Sonal; Parmelee, Rhiannon
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Thanks Zac. Will do. It appears that 4 TB vials were received, not 3.

From: Powers, Zachary [mailto:zpowers@craworld.com]
Sent: Thursday, July 10, 2014 4:40 PM
To: Katherine Klinefelter
Cc: Patil, Sonal; Parmelee, Rhiannon
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Katherine,

Three 40mL voas should be analyzed for VOCs. My mistake for not showing that in the COC.

Best,

Zac Powers

CRA Inc.
501.850.6610
501.224.1926

1487881

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Thursday, July 10, 2014 3:23 PM
To: Powers, Zachary
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad; Project Email Filing
Subject: RE: 084949 - Mayflower sand analysis COC and tracking no

Hello,

The samples were pre-entered based on the attached COC. A Trip Blank was also received with these samples but was not included on the COC. Is this Trip Blank to be added to the COC and analyzed for VOCs, or should it be discarded?

Thanks,

Kathy

Katherine Klinefelter
Principal Project Manager, Environmental Client Services

Eurofins Lancaster Laboratories
Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601
USA
Phone: +1 717-556-7256
Fax: +1 717-656-6766

Website: www.LancasterLabsEnv.com

Please note my new email address: KatherineKlinefelter@eurofinsus.com

---

From: Powers, Zachary [mailto:zpowers@craworld.com]
Sent: Wednesday, July 09, 2014 5:16 PM
To: Katherine Klinefelter; !US19_SA Env Entry
Cc: Patil, Sonal; Parmelee, Rhiannon; Chandler, Jennifer; Abbott, Kim (Kim.Abbott@arcadis-us.com); Peltier, Chad; Project Email Filing
Subject: 084949 - Mayflower sand analysis COC and tracking no

All,

See attached COC and tracking no. for Mayflower sand analysis.

Thanks,

Zac Powers
Conestoga-Rovers & Associates (CRA)
11719 Hinson Rd, Ste 100
Little Rock, AR 72212

1487881

Office: 501- 224-1926
Fax: 501-224-2313
Cell: 501-850-6610

zpowers@craworld.com
www.craworld.com

Think before you print

Perform every task the safe way, the right way, every time!

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CRA and GHD have merged! To learn more, visit www.CRAworld.com/ghd

Click here to report this email as spam.

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Sample Administration Receipt Documentation Log

Doc Log ID: 19625

Group Number(s): 1487881

Client: Mayflower

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	07/10/2014 9:30
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	AR		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	4
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	N/A		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Joseph Gruber (5200) at 11:00 on 07/10/2014

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT131	2.1	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil
PO Box 4592
Houston TX 77210-4592

October 31, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 10/18/2014
Group Number: 1512108
SDG: PEO34
PO Number: 4410181435
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
084949-101614-SIEVE-01 Grab Soil	7643051

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	ARCADIS	Attn: Rhiannon Parmelee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	Conestoga-Rovers & Associates	Attn: Chad Peltier
ELECTRONIC COPY TO	Conestoga-Rovers & Associates	Attn: Zac Powers
ELECTRONIC COPY TO	ARCADIS	Attn: Sonal Patil

Respectfully Submitted,

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1512108

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: 084949-101614-SIEVE-01 Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7643051
LL Group # 1512108
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 10/16/2014 14:00 by CP

Submitted: 10/18/2014 10:05
Reported: 10/31/2014 14:26

ExxonMobil
PO Box 4592
Houston TX 77210-4592

SIEV1 SDG#: PEO34-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	98.5	0.50	0.50	1
07103	3.35 mm	n.a.	97.4	0.50	0.50	1
07103	2.36 mm	n.a.	95.8	0.50	0.50	1
07103	1.18 mm	n.a.	90.6	0.50	0.50	1
07103	0.6 mm	n.a.	71.6	0.50	0.50	1
07103	0.3 mm	n.a.	8.9	0.50	0.50	1
07103	0.15 mm	n.a.	N.D.	0.50	0.50	1
07103	0.075 mm	n.a.	N.D.	0.50	0.50	1
07103	0.064 mm	n.a.	N.D.	0.50	0.50	1
07103	0.05 mm	n.a.	N.D.	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14291710301A	10/18/2014 12:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: ExxonMobil Group Number: 1512108
Reported: 10/31/14 at 02:26 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

ExxonMobil Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only
Acct. # 14739 Group # 157108 Sample # 764305 1
Instructions on reverse side correspond with circled numbers.

SCR#: _____

1 Client Information

Facility #/SID: Mayflower Pipeline Incident
Site Address: Mayflower AR
ExxonMobil PM: Mike Sixsmith
Cost Center/AFE:
Consultant/Office: Arcadis
Consultant PM: Steve Barrick
Consultant Phone #: 919-302-6799
Sampler: ~~Zac Powers~~ Chad Pelfrey

2 Sample Identification

3 Collected

4 Matrix

5 Analyses Requested

Preservation Code

2 Sample Identification	3 Collected Date	3 Collected Time	3 Grab	3 Composite	4 Matrix: Soil	4 Matrix: Sediment	4 Matrix: Water	4 Matrix: Ground	4 Matrix: Potable	4 Matrix: Surface	4 Matrix: NPDES	4 Matrix: Oil	4 Matrix: Air	Total # of Containers	5 Analyses Requested: ASTM D422
084949-101614-SIEVE-01	10.16.14	1400	X		X									1	X

Preservation Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

6 Remarks

24 hr TAT

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour

8 Data Package (circle if required)

Type I - Full
Type VI (Raw Data)
NJ Reduced
Other _____

EDD (circle if required)

Locus EIM (default)
Other _____

Relinquished by	Date	Time	Received by	Date	Time
Chad Pelfrey	10-16-14	1500	Zac Powers	10-16-14	1500
Zac Powers	10-17-14	1500	UPS		
Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____			Received by	10-18-14	1005

Temperature Upon Receipt N/A °C

Custody Seals Intact? (Yes) No

9

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The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7053 0713

1512108

Katherine Klinefelter

From: Parmelee, Rhiannon <Rhiannon.Parmelee@arcadis-us.com>
Sent: Tuesday, October 21, 2014 12:34 PM
To: Katherine Klinefelter; Powers, Zachary
Cc: Patil, Sonal; Peltier, Chad
Subject: RE: Mayflower sieve analysis COC and tracking

Use the same list as the waste samples. A validation data package is not required.

Email sent to ChadPeltier - Conestoga-Rovers & Associates - cpeltier@craworld.com
Email sent to MichaelLSixsmith - ExxonMobil - michael.l.sixsmith@exxonmobil.com
Email sent to RhiannonParmelee - ARCADIS - Rhiannon.Parmelee@arcadis-us.com
Email sent to SonalPatil - ARCADIS - Sonal.Patil@arcadis-us.com
Email sent to ZacPowers - Conestoga-Rovers & Associates - zpowers@craworld.com

Thanks

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Tuesday, October 21, 2014 9:53 AM
To: Parmelee, Rhiannon; Powers, Zachary
Cc: Patil, Sonal; Peltier, Chad
Subject: RE: Mayflower sieve analysis COC and tracking

Will do. To whom should the reports be sent? Please confirm that a validation data package is not required for this sample. Thanks!

From: Parmelee, Rhiannon [mailto:Rhiannon.Parmelee@arcadis-us.com]
Sent: Tuesday, October 21, 2014 11:49 AM
To: Powers, Zachary; Katherine Klinefelter
Cc: Patil, Sonal; Peltier, Chad
Subject: RE: Mayflower sieve analysis COC and tracking

Please proceed with analysis.

From: Powers, Zachary [mailto:zpowers@craworld.com]
Sent: Tuesday, October 21, 2014 9:47 AM
To: Katherine Klinefelter
Cc: Patil, Sonal; Parmelee, Rhiannon; Peltier, Chad
Subject: RE: Mayflower sieve analysis COC and tracking

Wow. I was under the impression that particle analysis did not require preservation. My mistake!

What do you think, team. Send another sample or proceed?

Best,

Zac Powers
CRA Inc.
501.850.6610
501.224.1926

1512408

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Tuesday, October 21, 2014 10:43 AM
To: Powers, Zachary
Cc: Sonal Patil; Parmelee, Rhiannon; Peltier, Chad
Subject: RE: Mayflower sieve analysis COC and tracking

The sample was submitted unchilled. Samples for grain size are normally shipped on wet ice to maintain temperature at <6C. Should the lab proceed?

From: Powers, Zachary [mailto:zpowers@craworld.com]
Sent: Monday, October 20, 2014 11:52 AM
To: Katherine Klinefelter
Cc: Sonal Patil; Parmelee, Rhiannon; Peltier, Chad
Subject: RE: Mayflower sieve analysis COC and tracking

Yes. We need it as soon as possible.

Best,

Zac Powers
CRA Inc.
501.850.6610
501.224.1926

From: Katherine Klinefelter [mailto:KatherineKlinefelter@eurofinsus.com]
Sent: Monday, October 20, 2014 10:42 AM
To: Powers, Zachary
Cc: Sonal Patil; Parmelee, Rhiannon; Peltier, Chad
Subject: RE: Mayflower sieve analysis COC and tracking

Hello,

Grain size is not available on a rush TAT. The usual TAT for grain size is 3 weeks as the sample must dry prior to sieving. For the sand matrix submitted, the lab is estimating 2 week TAT. Should the lab proceed with 2 week TAT?

Thanks,

Kathy

Katherine Klinefelter
Principal Project Manager, Environmental Client Services

Eurofins Lancaster Laboratories
Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601
USA
Phone: +1 717-556-7256
Fax: +1 717-656-6766

Website: www.LancasterLabsEnv.com

Please note my new email address: KatherineKlinefelter@eurofinsus.com

1512108

From: Powers, Zachary [mailto:zpowers@craworld.com]
Sent: Friday, October 17, 2014 5:44 PM
To: Katherine Klinefelter; !US19_SA Env Entry
Cc: Sonal Patil; Parmelee, Rhiannon; Peltier, Chad
Subject: Mayflower sieve analysis COC and tracking

Katherine,

See attached COC and tracking info for the sand sample collected yesterday. We will need a 24 hr TAT please.

Thanks,

Zac Powers
Conestoga-Rovers & Associates (CRA)
11719 Hinson Rd, Ste 100
Little Rock, AR 72212

Office: 501- 224-1926
Fax: 501-224-2313
Cell: 501-850-6610

zpowers@craworld.com
www.craworld.com

Think before you print

Perform every task the safe way, the right way, every time!

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Notify us here to report this email as spam.

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Sample Administration Receipt Documentation Log

Doc Log ID: 35306

Group Number(s): 1512108

Client: ExxonMobil

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	10/18/2014 10:05
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	No	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 10:49 on 10/18/2014

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Lancaster, PA 17605-2425

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F | 717-656-2681
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil
PO Box 4592
Houston TX 77210-4592

November 16, 2014

Project: Mayflower, AR Pipeline Incident

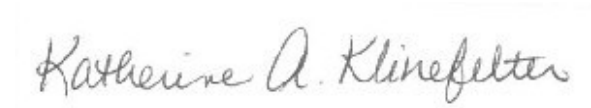
Submittal Date: 10/23/2014
Group Number: 1513247
SDG: PEO36
PO Number: 4410181435
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
084949-102214-SIEVE-01B Grab Soil	7647951
084949-102214-SIEVE-02B Grab Soil	7647952
084949-102214-SIEVE-03B Grab Soil	7647953

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	ARCADIS	Attn: Rhiannon Parmelee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	Conestoga-Rovers & Associates	Attn: Chad Peltier
ELECTRONIC COPY TO	Conestoga-Rovers & Associates	Attn: Zac Powers
ELECTRONIC COPY TO	ARCADIS	Attn: Sonal Patil

Respectfully Submitted,



Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1513247

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

ASTM D422, Wet Chemistry

Sample #s: 7647951

The grain size percent passing results are anomalous for particle sizes 0.064 mm and 0.05 mm due to matrix interference.

Batch #: 14279710301A (Sample number(s): 7647952-7647953 BKG: P648228)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: 0.064 mm

Sample Description: 084949-102214-SIEVE-01B Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7647951
LL Group # 1513247
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 10/22/2014 11:05 by ZP

Submitted: 10/23/2014 09:40
Reported: 11/16/2014 10:57

ExxonMobil
PO Box 4592
Houston TX 77210-4592

MSI1B SDG#: PEO36-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	97.2	0.50	0.50	1
07103	3.35 mm	n.a.	95.4	0.50	0.50	1
07103	2.36 mm	n.a.	91.3	0.50	0.50	1
07103	1.18 mm	n.a.	79.7	0.50	0.50	1
07103	0.6 mm	n.a.	50.7	0.50	0.50	1
07103	0.3 mm	n.a.	5.8	0.50	0.50	1
07103	0.15 mm	n.a.	N.D.	0.50	0.50	1
07103	0.075 mm	n.a.	N.D.	0.50	0.50	1
07103	0.064 mm	n.a.	N.D.	0.50	0.50	1
07103	0.05 mm	n.a.	0.50	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

The grain size percent passing results are anomalous for particle sizes 0.064 mm and 0.05 mm due to matrix interference.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14297710301A	10/24/2014 20:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-102214-SIEVE-02B Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7647952
LL Group # 1513247
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 10/22/2014 11:10 by ZP

Submitted: 10/23/2014 09:40
Reported: 11/16/2014 10:57

ExxonMobil
PO Box 4592
Houston TX 77210-4592

MSI2B SDG#: PEO36-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	98.2	0.50	0.50	1
07103	3.35 mm	n.a.	96.6	0.50	0.50	1
07103	2.36 mm	n.a.	94.2	0.50	0.50	1
07103	1.18 mm	n.a.	87.7	0.50	0.50	1
07103	0.6 mm	n.a.	49.9	0.50	0.50	1
07103	0.3 mm	n.a.	3.4	0.50	0.50	1
07103	0.15 mm	n.a.	0.75	0.50	0.50	1
07103	0.075 mm	n.a.	0.52	0.50	0.50	1
07103	0.064 mm	n.a.	0.50	0.50	0.50	1
07103	0.05 mm	n.a.	N.D.	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14279710301A	10/24/2014 20:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: 084949-102214-SIEVE-03B Grab Soil
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # SW 7647953
LL Group # 1513247
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 10/22/2014 11:15 by ZP

Submitted: 10/23/2014 09:40
Reported: 11/16/2014 10:57

ExxonMobil
PO Box 4592
Houston TX 77210-4592

MSI3B SDG#: PEO36-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**ASTM D422**		% Passing	% Passing	% Passing	
07103	75 mm	n.a.	100	0.50	0.50	1
07103	37.5 mm	n.a.	100	0.50	0.50	1
07103	19 mm	n.a.	100	0.50	0.50	1
07103	4.75 mm	n.a.	97.9	0.50	0.50	1
07103	3.35 mm	n.a.	95.8	0.50	0.50	1
07103	2.36 mm	n.a.	91.8	0.50	0.50	1
07103	1.18 mm	n.a.	79.0	0.50	0.50	1
07103	0.6 mm	n.a.	48.4	0.50	0.50	1
07103	0.3 mm	n.a.	4.8	0.50	0.50	1
07103	0.15 mm	n.a.	N.D.	0.50	0.50	1
07103	0.075 mm	n.a.	N.D.	0.50	0.50	1
07103	0.064 mm	n.a.	N.D.	0.50	0.50	1
07103	0.05 mm	n.a.	N.D.	0.50	0.50	1
07103	0.02 mm	n.a.	N.D.	0.50	0.50	1
07103	0.005 mm	n.a.	N.D.	0.50	0.50	1
07103	0.002 mm	n.a.	N.D.	0.50	0.50	1
07103	0.001 mm	n.a.	N.D.	0.50	0.50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07103	Grain Size to 1 um	ASTM D422	1	14279710301A	10/24/2014 20:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: ExxonMobil Group Number: 1513247
Reported: 11/16/14 at 10:57 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14279710301A	Sample number(s): 7647952-7647953					BKG: P648228			
75 mm						100	100	0	20
37.5 mm						100	100	0	20
19 mm						100	100	0	20
4.75 mm						100	100	0	20
3.35 mm						100	100	0	20
2.36 mm						99.8	99.8	0	20
1.18 mm						99.0	98.5	1	20
0.6 mm						79.4	73.5	8	20
0.3 mm						33.7	29.5	13	20
0.15 mm						11.6	10.1	13	20
0.075 mm						4.0	3.5	13	20
0.064 mm						2.0	3.0	40* (1)	20
0.05 mm						0.50	0.50	0 (1)	20
0.02 mm						N.D.	N.D.	0 (1)	20
0.005 mm						N.D.	N.D.	0 (1)	20
0.002 mm						N.D.	N.D.	0 (1)	20
0.001 mm						N.D.	N.D.	0 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

ExxonMobil Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 14739 — For Eurofins Lancaster Laboratories Environmental use only — Group # 1513247 Sample # 764951-53

Instructions on reverse side correspond with circled numbers.

SCR#: _____

1 Client Information

Facility #/SID: Mayflower Pipeline Incident

Site Address: Mayflower, AR

ExxonMobil PM: Mike Sizemore — Cost Center/AFE:

Consultant/Office: Arcadis

Consultant PM: Steve Bomar — Consultant Phone #:

Sampler: Zac Powers

4 Matrix

Sediment ☐ | Soil ☒ | Water: Ground ☐ Potable ☐ Surface ☐ NPDES ☐ | Oil ☐ Air ☐

5 Analyses Requested

Preservation Code

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	ASTM D422	8270	8260	6010	7471	8081	8151	7196
08949-102214-SANDCOMP-01B	10-22-14	11:20		X	4		X	X	X	X	X	X	
08949-102214-SIEVE-01B	10-22-14	11:05	X		1	X							
08949-102214-SIEVE-02B	10-22-14	10:10	X		1	X							
08949-102214-SIEVE-03B	10-22-14	11:15	X		1	X							

Preservation Codes

H = HCl — T = Thiosulfate
N = HNO_3 — B = NaOH
S = H_2SO_4 — O = Other

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)

Standard — 5 day — 4 day — 72 hour — 48 hour — 24 hour

8 Data Package (circle if required)

Type I - Full
Type VI (Raw Data)
NJ Reduced
Other _____

EDD (circle if required)
Locus EIM (default)
Other _____

Relinquished by	Date	Time	Received by	Date	Time
	10-22-14	1630	UPS		
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____			Received by	Date 102314	Time 940

Temperature Upon Receipt 2.5 °C

Custody Seals Intact? (Yes) No

9

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 36093

Group Number(s): 1513247

Client: ExxonMobil

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	10/23/2014 9:40
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	AR		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Brandy Barclay (2299) at 12:34 on 10/23/2014

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	2.5	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ARCADIS

Sheen Samples

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

Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
September 3, 2104 Collection Date

Determination of:
Aliphatic Hydrocarbons (ALI), Total Petroleum Hydrocarbons (TPH), and Polycyclic Aromatic Hydrocarbons (PAHs) in a Net Sample

(QC Batch ENV 3335)

September 16, 2014

Technical Report 14-3305

Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
September 3, 2014 Collection Date
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B&B Laboratories
September 16, 2014

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Narrative

Technical Report 14-3305
Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
Net Sample
September 3, 2014 Collection Date

September 16, 2014

Introduction

B&B Laboratories received a shipment of one (1) ice chest that was sent by Rhiannon Parmelee of Arcadis using FedEx on September 4, 2014 and arrived on September 5, 2014 in College Station, Texas. The cooler arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	0.5°C no temperature blank	One (1) net sample in a 4 oz. glass jar.

The net sample was collected on September 3, 2014 in support of the Mayflower Pipeline Incident, (Arcadis-US Contract # B0086022.1401). The net sample was logged in according to B&B Laboratories standard operating procedure (B&B 1009) and was stored in an access-controlled refrigerator (4.0°C) prior to analysis. The sample receiving discrepancies are noted on the receiving/integrity report pages. The net sample was 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 TPH, ALI, PAH, selected hopane's, and TAS compounds in the net samples are included in this report.

Analytical Methods

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

Table 1. Standard Operating Procedures for each analytical test.

Matrix	Extraction	ALI/TPH	PAH
Net	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 method 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 a "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
Net	µg/net	µg/net	ng/net

Table 3. Data Qualifier Definitions.

Qualifier	Definition
B	Analyte detected in the method blank greater than 3X MDL
D	Diluted Value
E	Analyte concentration exceeds the calibration range of the GC/MS for that specific analysis.
I	Analytical interference
J	Analyte detected below the method detection limit
L	Loss due to matrix effect
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	**Net RLs**
Sample size	1 net, 1ml final extract
Unit of measure	µg/net
n-C9	0.35
n-C10	0.35
n-C11	0.35
n-C12	0.35
n-C13	0.35
i-c15	0.35
n-C14	0.35
i-c16	0.35
n-C15	0.35
n-C16	0.35
i-c18	0.35
n-C17	0.35
Pristane	0.35
n-C18	0.35
Phytane	0.35
n-C19	0.35
n-C20	0.35
n-C21	0.35
n-C22	0.35
n-C23	0.35
n-C24	0.35
n-C25	0.35
n-C26	0.35
n-C27	0.35
n-C28	0.35
n-C29	0.35
n-C30	0.35
n-C31	0.35
n-C32	0.35
n-C33	0.35
n-C34	0.35
n-C35	0.35
n-C36	0.35
n-C37	0.35
n-C38	0.35
n-C39	0.35
n-C40	0.35
Total Petroleum Hydrocarbons	20.0
Total Resolved Hydrocarbons	20.0
Unresolved Complex Mixture	20.0
Extractable Organic Matter	100

Table 4. Continued. Method Detection Limits.

PAH Sample size Unit of measure	Net RLs 1 net, 1ml final extract ng/net
cis/trans Decalin	10.0
C1-Decalins	10.0
C2-Decalins	10.0
C3-Decalins	10.0
C4-Decalins	10.0
Naphthalene	10.0
C1-Naphthalenes	10.0
C2-Naphthalenes	10.0
C3-Naphthalenes	10.0
C4-Naphthalenes	10.0
Benzothiophene	10.0
C1-Benzothiophenes	10.0
C2-Benzothiophenes	10.0
C3-Benzothiophenes	10.0
C4-Benzothiophenes	10.0
Biphenyl	10.0
Acenaphthylene	10.0
Acenaphthene	10.0
Dibenzofuran	10.0
Fluorene	10.0
C1-Fluorenes	10.0
C2-Fluorenes	10.0
C3-Fluorenes	10.0
Carbazole	10.0
Anthracene	10.0
Phenanthrene	10.0
C1-Phenanthrenes/Anthracenes	10.0
C2-Phenanthrenes/Anthracenes	10.0
C3-Phenanthrenes/Anthracenes	10.0
C4-Phenanthrenes/Anthracenes	10.0
Dibenzothiophene	10.0
C1-Dibenzothiophenes	10.0
C2-Dibenzothiophenes	10.0
C3-Dibenzothiophenes	10.0
C4-Dibenzothiophenes	10.0
Fluoranthene	10.0
Pyrene	10.0
C1-Fluoranthenes/Pyrenes	10.0
C2-Fluoranthenes/Pyrenes	10.0
C3-Fluoranthenes/Pyrenes	10.0
C4-Fluoranthenes/Pyrenes	10.0
Naphthobenzothiophene	10.0
C1-Naphthobenzothiophenes	10.0
C2-Naphthobenzothiophenes	10.0
C3-Naphthobenzothiophenes	10.0
C4-Naphthobenzothiophenes	10.0
Benz(a)anthracene	10.0
Chrysene/Triphenylene	10.0
C1-Chrysenes	10.0

PAH (continued) Sample size Unit of measure	Net RLs 1 net, 1ml final extract ng/net
C2-Chrysenes	10.0
C3-Chrysenes	10.0
C4-Chrysenes	10.0
Benzo(b)fluoranthene	10.0
Benzo(k,j)fluoranthene	10.0
Benzo(a)fluoranthene	10.0
Benzo(e)pyrene	10.0
Benzo(a)pyrene	10.0
Perylene	10.0
Indeno(1,2,3-c,d)pyrene	10.0
Dibenzo(a,h)anthracene	10.0
Benzo(g,h,i)perylene	10.0
Individual Alkyl Isomers,TAS, and Hopanes	
2-Methylnaphthalene	10.0
1-Methylnaphthalene	10.0
2,6-Dimethylnaphthalene	10.0
1,6,7-Trimethylnaphthalene	10.0
1-Methylfluorene	10.0
4-Methyldibenzothiophene	10.0
2/3-Methyldibenzothiophene	10.0
1-Methyldibenzothiophene	10.0
3-Methylphenanthrene	10.0
2/4-Methylphenanthrene	10.0
2-Methylanthracene	10.0
9-Methylphenanthrene	10.0
1-Methylphenanthrene	10.0
3,6-Dimethylphenanthrene	10.0
Retene	10.0
2-Methylfluoranthene	10.0
Benzo(b)fluorene	10.0
C29-Hopane	10.0
18a-Oleanane	10.0
C30-Hopane	10.0
C20-TAS	10.0
C21-TAS	10.0
C26(20S)-TAS	10.0
C26(20R)/C27(20S)-TAS	10.0
C28(20S)-TAS	10.0
C27(20R)-TAS	10.0
C28(20R)-TAS	10.0

Quality Assurance/Quality Control – Net

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

The quality assurance/quality control procedure for this program included the analyses of a method 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. Method 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 QA criterion for RPDs for valid laboratory 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 method blank and a blank spike/blank spike duplicate of no more than 20 samples. A standard reference oil (NIST 2779) was analyzed with this data set. Method 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 – Net

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.

Method 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.

Method 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

- The concentrations reported for the C1-Naphthalenes, C1-Dibenzothiophenes, and the C1-Phenanthrene/Anthracenes are calculated using the RRF of the parent compound (Naphthalene, Dibenzothiophene, and Phenanthrene). The concentration of these individual isomers is based on their RRF or an individual isomer from the same family.

- 150mL of solvent was used to extract the organic material from the submitted net samples. The same amount of solvent was used for the method blank, the blank spike and blank spike duplicate. The internal QC samples are reported as either amount (µg) for the aliphatic and TPH analytes or amount (ng) for the PAH analytes. The net samples are reported as µg/net for the aliphatic and TPH analytes or ng/net for the PAH analytes.

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.
Method 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 to 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 RSD ≤ 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.
Method 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 14-3305

Arcadis - Mayflower AR
Sample Inventory

Client Project #B0086002.1401

#	File Number	Client Identification	Collection Date	Received Date	Analysis	Matrix	Comments	B&B SDG	Client Project #
1	ARC2050	HN-Cove-005(B)0903'	09/03/14	09/05/14	PAH, TPH, ALI	Net		14090501	B0086022.1401

Product Samples

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

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

Sample Name	ARC2050.D
Client Name	SHN-Cove-005(B)090314
Matrix	Net
Collection Date	09/03/14
Received Date	09/05/14
Extraction Date	09/08/14
Extraction Batch	ENV 3335
Date Acquired	09-Sep-2014, 05:16:47
Method	ALIFRONT.M
Sample (Net)	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/net)	Q
n-C9	<0.288	U
n-C10	<0.252	U
n-C11	<0.251	U
n-C12	<0.266	U
n-C13	<0.258	U
i-C15	<0.256	U
n-C14	<0.277	U
i-C16	<0.234	U
n-C15	<0.256	U
n-C16	<0.234	U
i-C18	<0.1	U
n-C17	<0.174	U
Pristane	<0.19	U
n-C18	<0.1	U
Phytane	<0.201	U
n-C19	<0.073	U
n-C20	<0.077	U
n-C21	<0.081	U
n-C22	<0.15	U
n-C23	0.101	J
n-C24	0.313	
n-C25	0.554	
n-C26	1.650	
n-C27	3.195	
n-C28	4.016	
n-C29	4.626	
n-C30	4.439	
n-C31	4.388	
n-C32	3.426	
n-C33	2.705	
n-C34	2.223	
n-C35	1.628	
n-C36	1.174	
n-C37	1.108	
n-C38	0.712	
n-C39	0.481	
n-C40	0.373	
Total Alkanes	37.1	
Total Petroleum Hydrocarbons	116	
Total Resolved Hydrocarbons	54	
Unresolved Complex Mixture	62	
EOM (µg/net)	660	

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	49
n-eicosane-d42	92
n-triacontane-d62	98

Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Method Blank Report

Sample Name	ENV3335A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	09/08/14
Extraction Batch	ENV 3335
Date Acquired	09-Sep-2014, 01:45:50
Method	ALIFRONT.M
Sample (Net)	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/net)	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	<0.100	U		0.301	0.100
n-C17	<0.174	U		0.521	0.174
Pristane	<0.190	U		0.570	0.190
n-C18	<0.100	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	<0.070	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	<0.160	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	84
n-eicosane-d42	94
n-triacontane-d62	99

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

Sample Name	ENV3335B.D	ENV3335C.D
Client Name	Blank Spike	Blank Spike Dupl
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	09/08/14	09/08/14
Extraction Batch	ENV 3335	ENV 3335
Date Acquired	09-Sep-2014, 02:56:08	09-Sep-2014, 04:06:28
Method	ALIFRONT.M	ALIFRONT.M
Sample (Net)	1.00	1.00
Dilution	1X	1X

Target Compounds	Su. Corrected Conc. (µg)	Recovery (%)	Q	Su. Corrected Conc. (µg)	Recovery (%)	Q	RPD (%)	Q	Spike Amount (µg)
n-C9	8.09	81		8.07	80		0		10.0
n-C10	8.57	86		8.48	85		1		10.0
n-C11	8.96	89		8.85	88		1		10.0
n-C12	9.09	91		8.97	90		1		10.0
n-C13	9.28	92		9.17	91		1		10.0
n-C14	9.41	94		9.34	93		1		10.0
n-C15	9.64	96		9.59	96		1		10.0
n-C16	9.76	97		9.72	97		0		10.0
n-C17	9.80	98		9.73	97		1		10.1
Pristane	9.82	98		9.75	97		1		10.0
n-C18	9.99	99		9.87	98		1		10.1
Phytane	10.3	99		10.2	98		1		10.3
n-C19	10.5	101		10.3	100		1		10.4
n-C20	10.13	101		10.0	100		1		10.0
n-C21	10.2	101		10.0	100		1		10.0
n-C22	10.2	102		10.0	100		2		10.0
n-C23	10.2	102		10.1	101		1		10.0
n-C24	10.6	106		10.4	104		1		10.0
n-C25	10.3	102		10.1	101		2		10.0
n-C26	10.3	103		10.1	101		1		10.0
n-C27	10.2	102		10.1	101		1		10.0
n-C28	10.3	103		10.2	102		1		10.0
n-C29	10.4	104		10.2	102		1		10.0
n-C30	10.3	103		10.2	102		1		10.0
n-C31	10.7	104		10.6	103		1		10.3
n-C32	10.4	103		10.2	101		2		10.0
n-C33	10.3	103		10.2	102		1		10.0
n-C34	10.3	103		10.2	102		1		10.0
n-C35	10.2	102		10.1	101		2		10.0
n-C36	10.3	103		10.1	101		2		10.0
n-C37	10.6	103		10.4	101		2		10.3
n-C38	10.3	103		10.2	101		2		10.0
n-C39	10.4	104		10.2	101		2		10.0
n-C40	10.2	102		10.1	101		1		10.0
Average %Recovery		99			98				

Surrogate (Su)	Su Recovery (%)	Su Recovery (%)
n-dodecane-d26	88	88
n-eicosane-d42	97	98
n-triacontane-d62	103	103

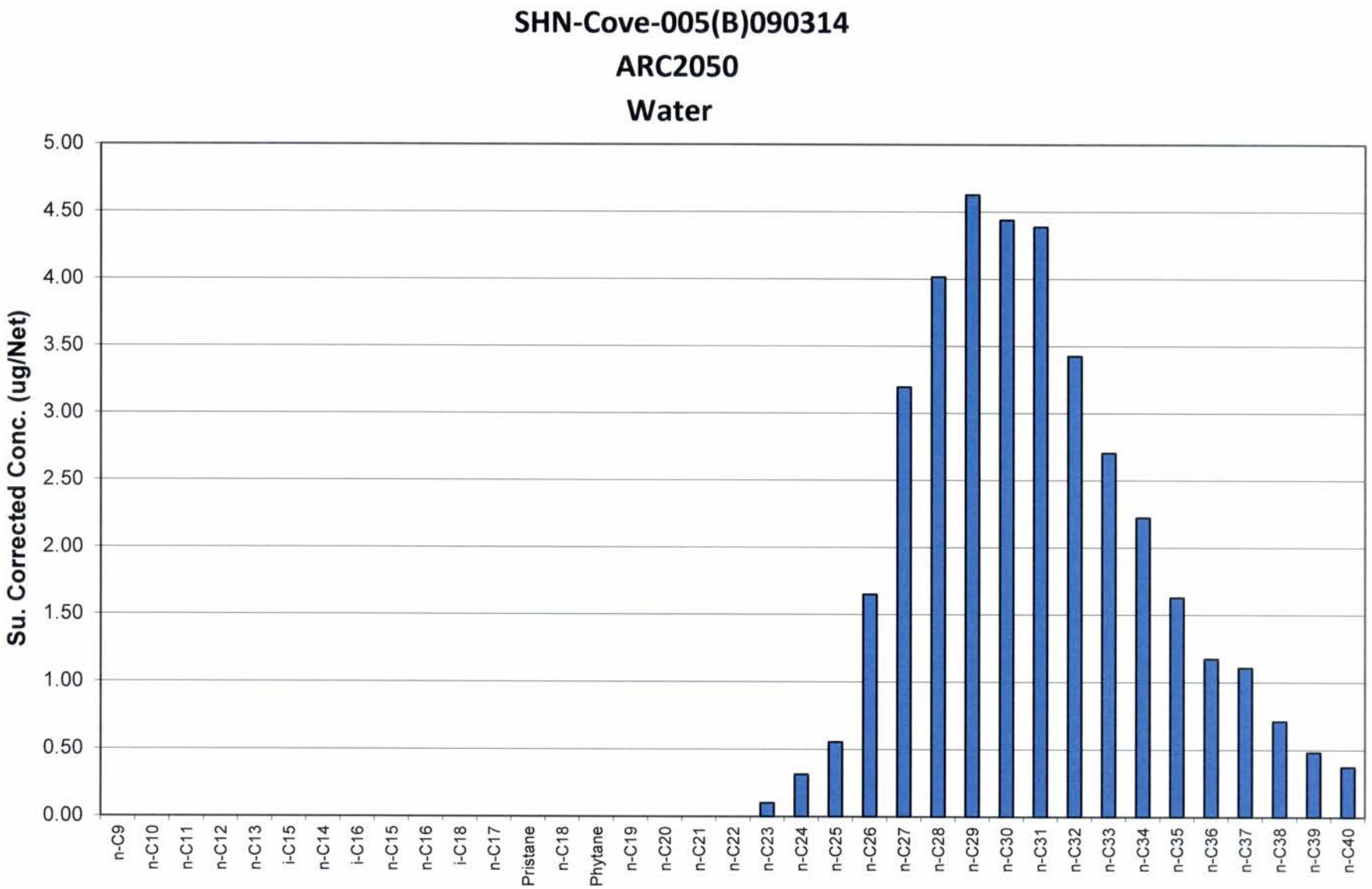
Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Standard Reference Material Report

Sample Name	FID10240C.D
Client Name	AL-SRM2779-20-003
Matrix	Reference Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3335
Date Acquired	08-Sep-2014, 21:04:36
Method	ALIFRONT.M
Sample Weight (mg)	20.0
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	13.1			3	13.5	10.8	16.2
n-C10	11.6			4	12.0	9.60	14.4
n-C11	10.4			4	10.8	8.64	13.0
n-C12	9.25			6	9.82	7.86	11.8
n-C13	8.32			1	8.41	6.73	10.1
i-C15	2.03			4	1.95	1.56	2.34
n-C14	7.32			5	7.70	6.16	9.24
i-C16	2.85			3	2.95	2.36	3.54
n-C15	7.00			3	7.23	5.78	8.68
n-C16	6.01			2	6.15	4.92	7.38
i-C18	1.58			1	1.56	1.25	1.87
n-C17	4.31			8	4.69	3.75	5.63
Pristane	2.26			7	2.42	1.94	2.90
n-C18	3.50			9	3.84	3.07	4.61
Phytane	1.63			7	1.51	1.21	1.81
n-C19	3.44			1	3.47	2.78	4.16
n-C20	2.66			6	2.84	2.27	3.41
n-C21	2.18			8	2.37	1.90	2.84
n-C22	1.92			6	2.04	1.63	2.45
n-C23	1.76			4	1.84	1.47	2.21
n-C24	1.57			6	1.66	1.33	1.99
n-C25	1.32			4	1.37	1.10	1.64
n-C26	1.08			4	1.13	0.904	1.36
n-C27	0.870			2	0.892	0.714	1.07
n-C28	0.776			0	0.776	0.621	0.931
n-C29	0.717			3	0.739	0.591	0.887
n-C30	0.639			4	0.666	0.533	0.799
n-C31	0.559			4	0.539	0.431	0.647
n-C32	0.439			1	0.443	0.354	0.532
n-C33	0.445			5	0.467	0.374	0.560
n-C34	0.416			3	0.428	0.342	0.514
n-C35	0.326	J		5	0.342	0.274	0.410
n-C36	0.195	J		8	0.211	0.169	0.253
n-C37	0.190	J		8	0.206	0.165	0.247
n-C38	0.155	J		10	0.172	0.138	0.206
n-C39	0.159	J		6	0.169	0.135	0.203
n-C40	0.156	J		12	0.176	0.141	0.211
Total Petroleum Hydrocarbons	611			1	607	484	726

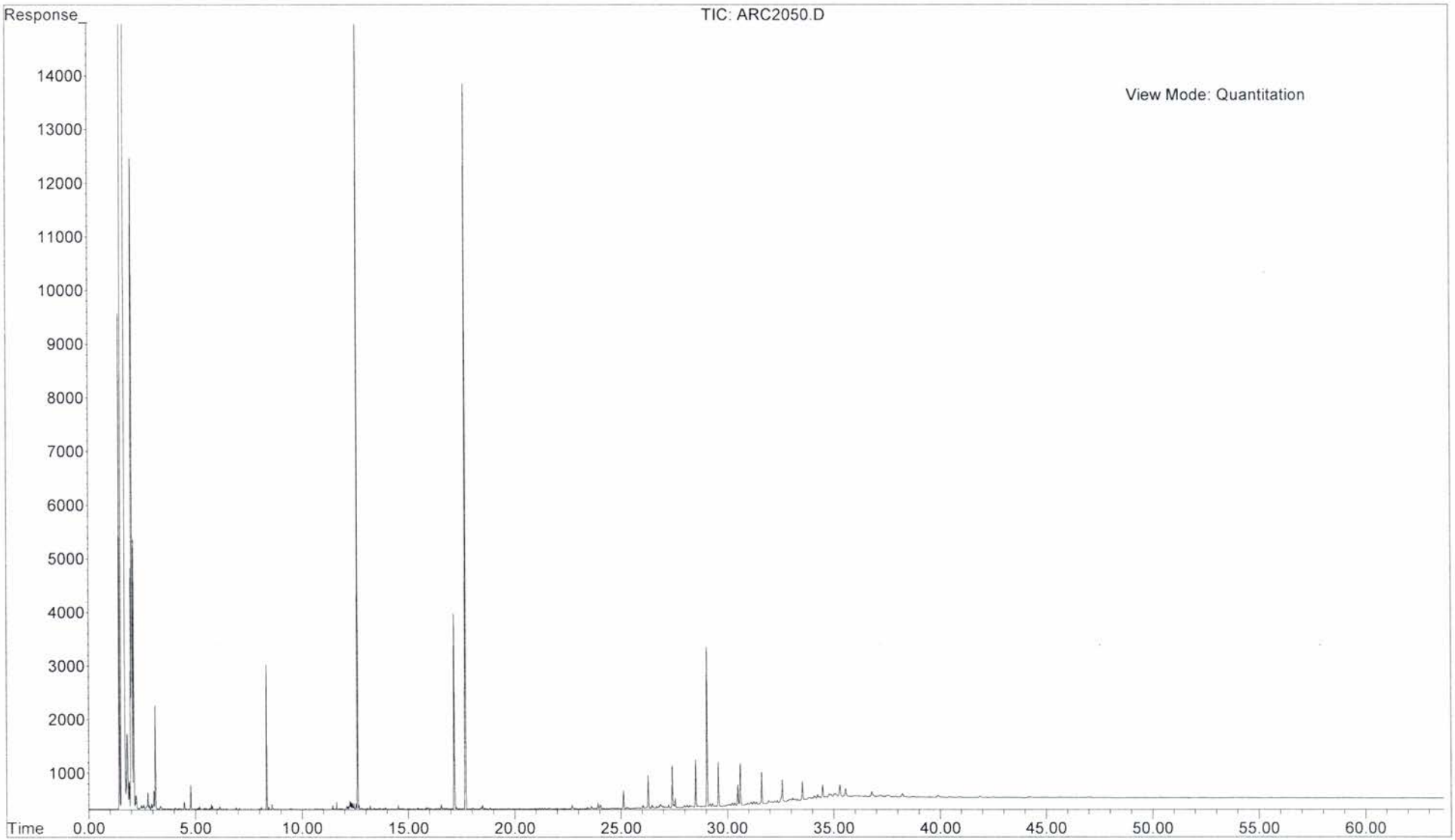
Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	100
n-eicosane-d42	99
n-triacontane-d62	88

Aliphatic Hydrocarbon Histograms


SHN-Cove-005(B)090314
ARC2050
Water
Su. Corrected Conc. (ug/Net)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
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 3335\FID10240\ARC2050.D
Operator : Meghan Dailey
Acquired : 09-Sep-2014, 05:16 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SHN-Cove-005(B)090314
Misc Info :
Vial Number: 9



Polycyclic Aromatic Hydrocarbon Concentration

Sample Name	ARC2050.D
Client Name	SHN-Cove-005(B)090314
Matrix	Net
Collection Date	09/03/14
Received Date	09/05/14
Extraction Date	09/08/14
Extraction Batch	ENV 3335
Date Acquired	9/9/14 14:30
Method	PAH-2014.M
Sample (Net)	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q
cis/trans Decalin	<10	U
C1-Decalins	<10	U
C2-Decalins	<10	U
C3-Decalins	<10	U
C4-Decalins	<10	U
Naphthalene	10.2	
C1-Naphthalenes	8.68	J
C2-Naphthalenes	11.3	
C3-Naphthalenes	12.8	
C4-Naphthalenes	<10	U
Benzothiophene	<10	U
C1-Benzothiophenes	<10	U
C2-Benzothiophenes	<10	U
C3-Benzothiophenes	<10	U
C4-Benzothiophenes	<10	U
Biphenyl	2.10	J
Acenaphthylene	0.39	J
Acenaphthene	0.85	J
Dibenzofuran	5.29	J
Fluorene	4.50	J
C1-Fluorenes	2.39	J
C2-Fluorenes	<10	U
C3-Fluorenes	<10	U
Carbazole	1.35	J
Anthracene	1.71	J
Phenanthrene	16.9	
C1-Phenanthrenes/Anthracenes	76.8	
C2-Phenanthrenes/Anthracenes	55.4	
C3-Phenanthrenes/Anthracenes	<10	U
C4-Phenanthrenes/Anthracenes	<10	U
Dibenzothiophene	1.80	J
C1-Dibenzothiophenes	1.42	J
C2-Dibenzothiophenes	3.55	J
C3-Dibenzothiophenes	2.67	J
C4-Dibenzothiophenes	1.22	J
Fluoranthene	5.25	J
Pyrene	3.14	J
C1-Fluoranthenes/Pyrenes	1.86	J
C2-Fluoranthenes/Pyrenes	<10	U
C3-Fluoranthenes/Pyrenes	<10	U
C4-Fluoranthenes/Pyrenes	<10	U
Naphthobenzothiophene	<10	U
C1-Naphthobenzothiophenes	<10	U
C2-Naphthobenzothiophenes	<10	U
C3-Naphthobenzothiophenes	<10	U
C4-Naphthobenzothiophenes	<10	U
Benz(a)anthracene	0.899	J
Chrysene/Triphenylene	0.963	J
C1-Chrysenes	1.62	J
C2-Chrysenes	<10	U
C3-Chrysenes	<10	U
C4-Chrysenes	<10	U
Benzo(b)fluoranthene	<10	U
Benzo(k,j)fluoranthene	<10	U
Benzo(a)fluoranthene	<10	U
Benzo(e)pyrene	<10	U
Benzo(a)pyrene	<10	U
Perylene	10.9	
Indeno(1,2,3-c,d)pyrene	<10	U
Dibenzo(a,h)anthracene	<10	U
Benzo(g,h,i)perylene	<10	U
Total PAHs	246	

Sample Name	ARC2050.D
Client Name	SHN-Cove-005(B)090314
Matrix	Net
Collection Date	09/03/14
Received Date	09/05/14
Extraction Date	09/08/14
Extraction Batch	ENV 3335
Date Acquired	9/9/14 14:30
Method	PAH-2014.M
Sample (Net)	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q
Individual Alkyl Isomers and Hopanes		
2-Methylnaphthalene	9.10	J
1-Methylnaphthalene	3.71	J
2,6-Dimethylnaphthalene	1.80	J
1,6,7-Trimethylnaphthalene	0.681	J
1-Methylfluorene	1.27	J
4-Methyldibenzothiophene	1.00	J
2/3-Methyldibenzothiophene	0.857	J
1-Methyldibenzothiophene	0.319	J
3-Methylphenanthrene	2.19	J
2-Methylphenanthrene	3.60	J
2-Methylanthracene	93.2	
4/9-Methylphenanthrene	1.63	J
1-Methylphenanthrene	1.62	J
3,6-Dimethylphenanthrene	0.862	J
Retene	<10	U
2-Methylfluoranthene	0.409	J
Benzo(b)fluorene	0.207	J
C29-Hopane	<10	U
18a-Oleanane	<10	U
C30-Hopane	<10	U
C20-TAS	<10	U
C21-TAS	<10	U
C26(20S)-TAS	<10	U
C26(20R)/C27(20S)-TAS	<10	U
C28(20S)-TAS	<10	U
C27(20R)-TAS	<10	U
C28(20R)-TAS	<10	U

Surrogate Recovery	
Naphthalene-d8	43
Acenaphthene-d10	57
Phenanthrene-d10	73
Chrysene-d12	80
Perylene-d12	86

Sample Name	ENV3335A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	09/08/14
Extraction Batch	ENV 3335
Date Acquired	9/9/14 11:08
Method	PAH-2014.M
Sample (Net)	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	3X MDL	Actual MDL
cis/trans Decalin	<10	U	30.0	10.0
C1-Decalins	<10	U	30.0	10.0
C2-Decalins	<10	U	30.0	10.0
C3-Decalins	<10	U	30.0	10.0
C4-Decalins	<10	U	30.0	10.0
Naphthalene	1.09	J	30.0	10.0
C1-Naphthalenes	<10	U	30.0	10.0
C2-Naphthalenes	<10	U	30.0	10.0
C3-Naphthalenes	<10	U	30.0	10.0
C4-Naphthalenes	<10	U	30.0	10.0
Benzothiophene	<10	U	30.0	10.0
C1-Benzothiophenes	<10	U	30.0	10.0
C2-Benzothiophenes	<10	U	30.0	10.0
C3-Benzothiophenes	<10	U	30.0	10.0
C4-Benzothiophenes	<10	U	30.0	10.0
Biphenyl	0.305	J	30.0	10.0
Acenaphthylene	<10	U	30.0	10.0
Acenaphthene	<10	U	30.0	10.0
Dibenzofuran	<10	U	30.0	10.0
Fluorene	<10	U	30.0	10.0
C1-Fluorenes	<10	U	30.0	10.0
C2-Fluorenes	<10	U	30.0	10.0
C3-Fluorenes	<10	U	30.0	10.0
Carbazole	<10	U	30.0	10.0
Anthracene	<10	U	30.0	10.0
Phenanthrene	1.01	J	30.0	10.0
C1-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C2-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C3-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C4-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
Dibenzothiophene	<10	U	30.0	10.0
C1-Dibenzothiophenes	<10	U	30.0	10.0
C2-Dibenzothiophenes	<10	U	30.0	10.0
C3-Dibenzothiophenes	<10	U	30.0	10.0
C4-Dibenzothiophenes	<10	U	30.0	10.0
Fluoranthene	<10	U	30.0	10.0
Pyrene	<10	U	30.0	10.0
C1-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C2-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C3-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C4-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
Naphthobenzothiophene	<10	U	30.0	10.0
C1-Naphthobenzothiophenes	<10	U	30.0	10.0
C2-Naphthobenzothiophenes	<10	U	30.0	10.0
C3-Naphthobenzothiophenes	<10	U	30.0	10.0
C4-Naphthobenzothiophenes	<10	U	30.0	10.0
Benz(a)anthracene	<10	U	30.0	10.0
Chrysene/Triphenylene	<10	U	30.0	10.0
C1-Chrysenes	<10	U	30.0	10.0
C2-Chrysenes	<10	U	30.0	10.0
C3-Chrysenes	<10	U	30.0	10.0
C4-Chrysenes	<10	U	30.0	10.0
Benzo(b)fluoranthene	<10	U	30.0	10.0
Benzo(k,j)fluoranthene	<10	U	30.0	10.0
Benzo(a)fluoranthene	<10	U	30.0	10.0
Benzo(e)pyrene	<10	U	30.0	10.0
Benzo(a)pyrene	<10	U	30.0	10.0
Perylene	<10	U	30.0	10.0
Indeno(1,2,3-c,d)pyrene	<10	U	30.0	10.0
Dibenzo(a,h)anthracene	<10	U	30.0	10.0
Benzo(g,h,i)perylene	<10	U	30.0	10.0
Total PAHs	2.41			

Sample Name	ENV3335A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	09/08/14
Extraction Batch	ENV 3335
Date Acquired	9/9/14 11:08
Method	PAH-2014.M
Sample (Net)	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	3X MDL	Actual MDL
Individual Alkyl Isomers and Hopanes				
2-Methylnaphthalene		<10 U	30.0	10.0
1-Methylnaphthalene		<10 U	30.0	10.0
2,6-Dimethylnaphthalene		<10 U	30.0	10.0
1,6,7-Trimethylnaphthalene		<10 U	30.0	10.0
1-Methylfluorene		<10 U	30.0	10.0
4-Methyldibenzothiophene		<10 U	30.0	10.0
2/3-Methyldibenzothiophene		<10 U	30.0	10.0
1-Methyldibenzothiophene		<10 U	30.0	10.0
3-Methylphenanthrene		<10 U	30.0	10.0
2-Methylphenanthrene		<10 U	30.0	10.0
2-Methylanthracene		<10 U	30.0	10.0
4/9-Methylphenanthrene		<10 U	30.0	10.0
1-Methylphenanthrene		<10 U	30.0	10.0
3,6-Dimethylphenanthrene		<10 U	30.0	10.0
Retene		<10 U	30.0	10.0
2-Methylfluoranthene		<10 U	30.0	10.0
Benzo(b)fluorene		<10 U	30.0	10.0
C29-Hopane		<10 U	30.0	10.0
18a-Oleanane		<10 U	30.0	10.0
C30-Hopane		<10 U	30.0	10.0
C20-TAS		<10 U	30.0	10.0
C21-TAS		<10 U	30.0	10.0
C26(20S)-TAS		<10 U	30.0	10.0
C26(20R)/C27(20S)-TAS		<10 U	30.0	10.0
C28(20S)-TAS		<10 U	30.0	10.0
C27(20R)-TAS		<10 U	30.0	10.0
C28(20R)-TAS		<10 U	30.0	10.0

Surrogate Recovery	
Naphthalene-d8	76
Acenaphthene-d10	80
Phenanthrene-d10	82
Chrysene-d12	80
Perylene-d12	72

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3335B.D	ENV3335C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	09/08/14	09/08/14
Extraction Batch	ENV 3335	ENV 3335
Date Acquired	9/9/14 12:15	9/9/14 13:22
Method	PAH-2014.M	PAH-2014.M
Sample (Net)	1.00	1.00
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	92.8		94		92.7		94		0		99.0
C1-Decalins	NA				NA						
C2-Decalins	NA				NA						
C3-Decalins	NA				NA						
C4-Decalins	NA				NA						
Naphthalene	90.9		92		90.8		92		0		98.6
C1-Naphthalenes	NA				NA						
C2-Naphthalenes	NA				NA						
C3-Naphthalenes	NA				NA						
C4-Naphthalenes	NA				NA						
Benzothiophene	91.1		91		90.9		91		0		99.7
C1-Benzothiophenes	NA				NA						
C2-Benzothiophenes	NA				NA						
C3-Benzothiophenes	NA				NA						
C4-Benzothiophenes	NA				NA						
Biphenyl	81.6		82		82.3		83		1		99.7
Acenaphthylene	92.9		93		94.0		94		1		99.9
Acenaphthene	96.3		96		97.0		96		1		101
Dibenzofuran	97.9		98		98.4		99		0		99.8
Fluorene	96.8		98		97.4		99		1		99
C1-Fluorenes	NA				NA						
C2-Fluorenes	NA				NA						
C3-Fluorenes	NA				NA						
Carbazole	86.1		86		89.3		90		4		99.7
Anthracene	92.8		93		94.6		95		2		100
Phenanthrene	97.8		98		98.9		99		1		99.7
C1-Phenanthrenes/Anthracenes	NA				NA						
C2-Phenanthrenes/Anthracenes	NA				NA						
C3-Phenanthrenes/Anthracenes	NA				NA						
C4-Phenanthrenes/Anthracenes	NA				NA						
Dibenzothiophene	102		104		102		103		1		98.9
C1-Dibenzothiophenes	NA				NA						
C2-Dibenzothiophenes	NA				NA						
C3-Dibenzothiophenes	NA				NA						
C4-Dibenzothiophenes	NA				NA						
Fluoranthene	103		103		104		103		0		101
Pyrene	98.8		99		99.0		99		0		100
C1-Fluoranthenes/Pyrenes	NA				NA						
C2-Fluoranthenes/Pyrenes	NA				NA						
C3-Fluoranthenes/Pyrenes	NA				NA						
C4-Fluoranthenes/Pyrenes	NA				NA						
Naphthobenzothiophene	104		103		103		102		1		101
C1-Naphthobenzothiophenes	NA				NA						
C2-Naphthobenzothiophenes	NA				NA						
C3-Naphthobenzothiophenes	NA				NA						
C4-Naphthobenzothiophenes	NA				NA						
Benz(a)anthracene	102		103		105		106		2		99.0
Chrysene/Triphenylene	99.3		100		102		103		3		99.1
C1-Chrysenes	NA				NA						
C2-Chrysenes	NA				NA						
C3-Chrysenes	NA				NA						
C4-Chrysenes	NA				NA						
Benzo(b)fluoranthene	101		101		101		102		1		100
Benzo(k,j)fluoranthene	98.2		98		98.9		99		1		100
Benzo(a)fluoranthene	NA				NA						
Benzo(e)pyrene	104		103		105		105		1		100
Benzo(a)pyrene	88.7		89		92.6		93		4		99.9
Perylene	82.1		82		83.8		84		2		100
Indeno(1,2,3-c,d)pyrene	97.2		97		96.4		96		1		100
Dibenzo(a,h)anthracene	96.6		97		95.8		97		1		99.2
Benzo(g,h,i)perylene	94.9		96		95.3		97		0		98.6
Average % Recovery			98				99				

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3335B.D	ENV3335C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	09/08/14	09/08/14
Extraction Batch	ENV 3335	ENV 3335
Date Acquired	9/9/14 12:15	9/9/14 13:22
Method	PAH-2014.M	PAH-2014.M
Sample (Net)	1.00	1.00
Dilution	1X	1X

Target Compounds	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	Su. Corrected Amount (ng)	Q	Recovery (%)	RPD (%)	Q	Spike amount (ng)
Individual Alkyl Isomers and Hopanes										
2-Methylnaphthalene	92.2		93		92.0		93	0		99.3
1-Methylnaphthalene	91.9		92		92.1		93	0		99.5
2,6-Dimethylnaphthalene	94.9		95		95.4		95	1		100
1,6,7-Trimethylnaphthalene	102		101		102		102	1		100
1-Methylfluorene	105		104		106		105	1		101
4-Methyldibenzothiophene	105		104		105		105	1		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	104		105		105		105	0		99.3
3,6-Dimethylphenanthrene	105		105		106		105	0		100
Retene	104		104		103		103	1		100
2-Methylfluoranthene	105		105		104		104	1		100
Benzo(b)fluorene	112		112		112		111	0		100
C29-Hopane	NA				NA					
18a-Oleanane	NA				NA					
C30-Hopane	106		106		108		108	2		100
C20-TAS	NA				NA					
C21-TAS	NA				NA					
C26(20S)-TAS	NA				NA					
C26(20R)/C27(20S)-TAS	NA				NA					
C28(20S)-TAS	NA				NA					
C27(20R)-TAS	NA				NA					
C28(20R)-TAS	NA				NA					

Surrogate Recovery		
Naphthalene-d8	77	77
Acenaphthene-d10	82	83
Phenanthrene-d10	85	86
Chrysene-d12	84	85
Perylene-d12	76	78

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

Sample Name	MS50226R.D
Client Name	PAH-WKSRM2779-4.0-005
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3335
Date Acquired	9/9/14 10:01
Method	PAH-2014.M
Sample Weight (mg)	4.2

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	650						
C1-Decalins	935						
C2-Decalins	806						
C3-Decalins	873						
C4-Decalins	513						
Naphthalene	702			20	855 ± 46	647	1081
C1-Naphthalenes	1582						
C2-Naphthalenes	2013						
C3-Naphthalenes	1397						
C4-Naphthalenes	791						
Benzothiophene	8.6	J					
C1-Benzothiophenes	31.2						
C2-Benzothiophenes	23.3						
C3-Benzothiophenes	26.4						
C4-Benzothiophenes	26.6						
Biphenyl	164						
Acenaphthylene	9.74	J					
Acenaphthene	7.81	J					
Dibenzofuran	34.6						
Fluorene	122						
C1-Fluorenes	293						
C2-Fluorenes	377						
C3-Fluorenes	262						
Carbazole	3.7	J					
Anthracene	2.4	J		37	3.42 ± 0.59	2.26	4.81
Phenanthrene	250			3	258 ± 27	185	342
C1-Phenanthrenes/Anthracenes	608						
C2-Phenanthrenes/Anthracenes	683						
C3-Phenanthrenes/Anthracenes	467						
C4-Phenanthrenes/Anthracenes	214						
Dibenzothiophene	48.8			6	51.8 ± 2.1	39.8	64.7
C1-Dibenzothiophenes	124						
C2-Dibenzothiophenes	175						
C3-Dibenzothiophenes	107						
C4-Dibenzothiophenes	56.5						
Fluoranthene	5.53	J		24	4.36 ± 0.40	3.17	5.71
Pyrene	12.2			19	14.81 ± 0.39	11.5	18.2
C1-Fluoranthenes/Pyrenes	71.4						
C2-Fluoranthenes/Pyrenes	138						
C3-Fluoranthenes/Pyrenes	132						
C4-Fluoranthenes/Pyrenes	76.2						
Naphthobenzothiophene	23.3						
C1-Naphthobenzothiophenes	63.6						
C2-Naphthobenzothiophenes	79.8						
C3-Naphthobenzothiophenes	67.0						
C4-Naphthobenzothiophenes	26.5						
Benz(a)anthracene	5.29	J		28	7.03 ± 0.85	4.94	9.46
Chrysene/Triphenylene	44.6			6	47.4 ± 1.7	36.6	58.9
C1-Chrysenes	116						
C2-Chrysenes	140						
C3-Chrysenes	95						
C4-Chrysenes	58.3						
Benzo(b)fluoranthene	5.19	J		8	5.62 ± 0.34	4.22	7.15
Benzo(k,j)fluoranthene	0.827	J					
Benzo(a)fluoranthene	4.99	J					
Benzo(e)pyrene	9.47	J		13	10.78 ± 0.60	8.14	13.7
Benzo(a)pyrene	1.50	J					
Perylene	0.604	J					
Indeno(1,2,3-c,d)pyrene	0.509	J					
Dibenzo(a,h)anthracene	0.702	J		20	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	15570						

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

Sample Name	MS50226R.D
Client Name	PAH-WKSRM2779-4.0-005
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3335
Date Acquired	9/9/14 10:01
Method	PAH-2014.M
Sample Weight (mg)	4.2

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	1387		16	1630 ± 50	1264	2016
1-Methylnaphthalene	978		15	1140 ± 20	896	1392
2,6-Dimethylnaphthalene	426					
1,6,7-Trimethylnaphthalene	204					
1-Methylfluorene	242					
4-Methyldibenzothiophene	106					
2/3-Methyldibenzothiophene	50.0					
1-Methyldibenzothiophene	33.4					
3-Methylphenanthrene	183		12	206 ± 32	139	286
2-Methylphenanthrene	207		11	230 ± 14	173	293
2-Methylanthracene	17.6					
4/9-Methylphenanthrene	245		6	232 ± 19	170	301
1-Methylphenanthrene	156		8	169 ± 10	127	215
3,6-Dimethylphenanthrene	48.9					
Retene	5.22	J				
2-Methylfluoranthene	6.74	J				
Benzo(b)fluorene	16.3					
C29-Hopane	22.7					
18a-Oleanane	<10	U				
C30-Hopane	51.3					
C20-TAS	34.0					
C21-TAS	37.6					
C26(20S)-TAS	23.9					
C26(20R)/C27(20S)-TAS	77.7					
C28(20S)-TAS	59.9					
C27(20R)-TAS	46.2					
C28(20R)-TAS	38.8					

Surrogate Recovery	
Naphthalene-d8	80
Acenaphthene-d10	92
Phenanthrene-d10	96
Chrysene-d12	87
Perylene-d12	90

Peak Resolution	
4/9-Methylphenanthrene from 1-Methylyphenanthrene (m/z 192)	94%

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

Sample Name	MS50226Q.D
Client Name	PAH-WKCCV-250-042
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3335
Date Acquired	9/9/14 8:53
Method	PAH-2014.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	233		5.9	248	210	285
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	233		5.5	247	210	283
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	237		5.1	249	212	287
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	242		2.8	249	212	287
Acenaphthylene	236		5.5	250	212	287
Acenaphthene	244		3.2	252	214	289
Dibenzofuran	244		2.4	250	212	287
Fluorene	239		3.2	247	210	283
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	231		7.7	249	212	287
Anthracene	235		6.3	250	213	288
Phenanthrene	241		3.5	249	212	287
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	237		4.1	247	210	284
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	237		5.9	252	214	290
Pyrene	240		4.1	250	213	288
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
C4-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	233		7.6	251	214	289
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
C4-Naphthobenzothiophenes	NA					
Benz(a)anthracene	223		10.4	248	210	285
Chrysene/Triphenylene	235		5.5	248	211	285
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	262		5.0	249	212	286
Benzo(k,j)fluoranthene	265		5.8	251	213	288
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	250		0.1	251	213	288
Benzo(a)pyrene	238		4.8	250	212	287
Perylene	241		3.6	250	213	288
Indeno(1,2,3-c,d)pyrene	230		8.2	250	213	288
Dibenzo(a,h)anthracene	226		9.5	248	211	285
Benzo(g,h,i)perylene	239		3.3	247	210	283

Sample Name	MS50226Q.D
Client Name	PAH-WKCCV-250-042
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3335
Date Acquired	9/9/14 8:53
Method	PAH-2014.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	237		4.5	248	211	285
1-Methylnaphthalene	238		4.5	249	211	286
2,6-Dimethylnaphthalene	242		3.1	250	212	287
1,6,7-Trimethylnaphthalene	242		3.4	251	213	288
1-Methylfluorene	241		4.4	252	214	290
4-Methyldibenzothiophene	240		4.7	252	214	289
2/3-Methyldibenzothiophene	NA					
1-Methyldibenzothiophene	NA					
3-Methylphenanthrene	NA					
2-Methylphenanthrene	NA					
2-Methylanthracene	NA					
4/9-Methylphenanthrene	NA					
1-Methylphenanthrene	234		5.9	248	211	285
3,6-Dimethylphenanthrene	234		6.9	251	213	288
Retene	233		7.3	250	213	288
2-Methylfluoranthene	233		7.3	250	213	288
Benzo(b)fluorene	224		11.2	251	213	289
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	249		0.6	250	213	288
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	95
Acenaphthene-d10	97
Phenanthrene-d10	96
Chrysene-d12	94
Perylene-d12	96

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

Sample Name	MS50226I.D
Client Name	PAH-WKICV-250-008
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3335
Date Acquired	9/7/14 4:11
Method	PAH-2014.M
Sample Volume (mL)	1.0

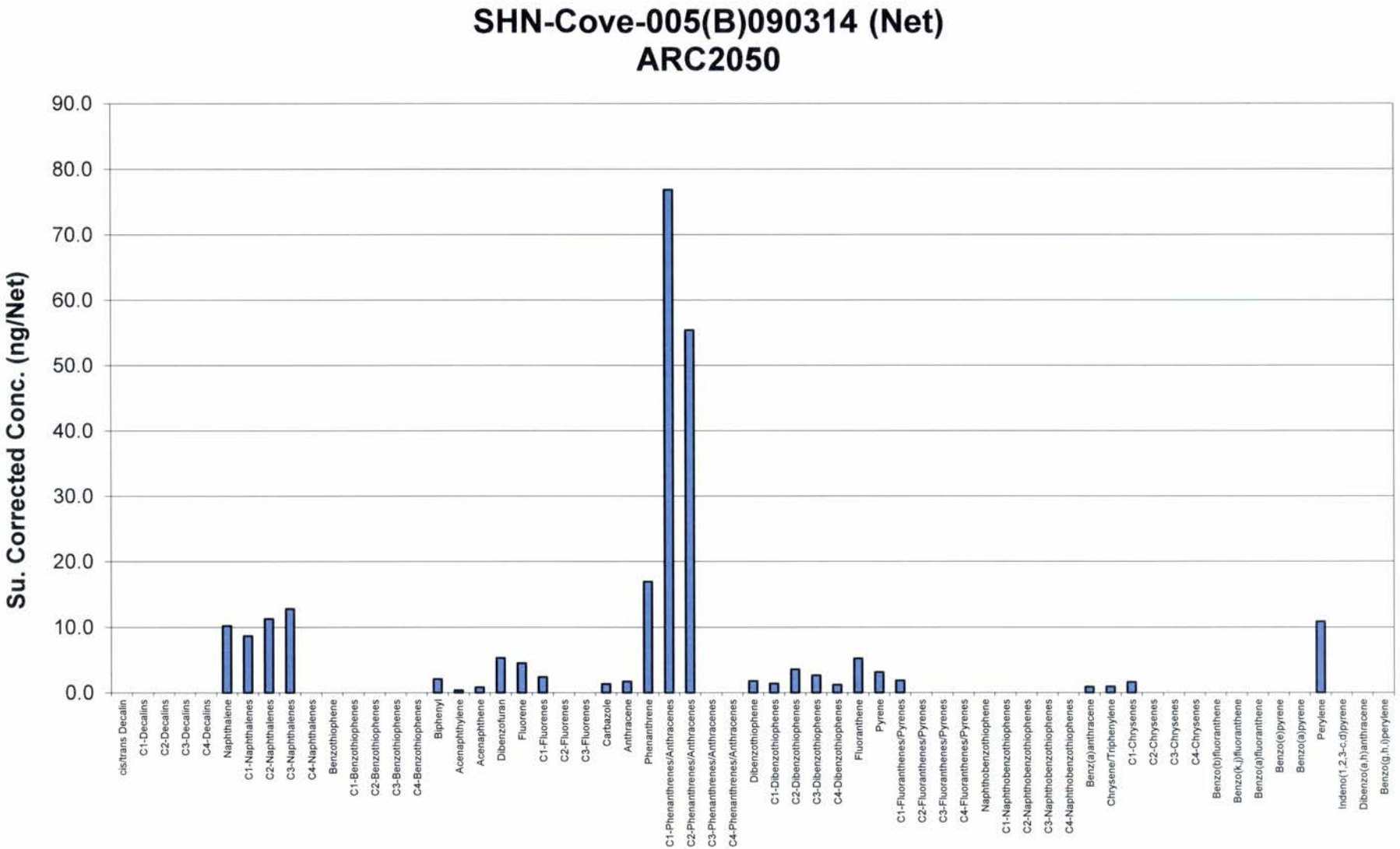
Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
cis/trans Decalin	243		3.1	250	200	300
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	242		3.3	250	200	300
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	238		5.0	250	200	300
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	229		9.2	251	201	301
Acenaphthylene	204		20.5	250	200	300
Acenaphthene	235		6.0	250	200	300
Dibenzofuran	230		8.4	250	200	300
Fluorene	228		9.2	250	200	300
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	201		21.8	250	200	300
Anthracene	225		10.7	250	200	300
Phenanthrene	254		1.7	250	200	300
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	239		4.4	250	200	300
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	231		7.9	250	200	300
Pyrene	248		0.9	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	209		17.8	250	200	300
Chrysene/Triphenylene	240		4.2	250	200	300
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	240		4.1	250	200	300
Benzo(k,j)fluoranthene	228		9.2	250	200	300
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	228		9.5	250	200	300
Benzo(a)pyrene	231		7.8	250	200	300
Perylene	215		15.3	251	200	301
Indeno(1,2,3-c,d)pyrene	214		15.4	250	200	300
Dibenzo(a,h)anthracene	220		12.6	250	200	300
Benzo(g,h,i)perylene	234		6.5	250	200	300

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

Sample Name	MS50226I.D
Client Name	PAH-WKICV-250-008
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3335
Date Acquired	9/7/14 4:11
Method	PAH-2014.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	242		3.4	250	200	301
1-Methylnaphthalene	243		2.9	251	200	301
2,6-Dimethylnaphthalene	221		12.4	250	200	300
1,6,7-Trimethylnaphthalene	223		11.6	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	228		9.1	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	257		2.5	250	200	300
Acenaphthene-d10	244		2.7	250	200	300
Phenanthrene-d10	263		5.1	250	200	300
Chrysene-d12	254		1.4	250	200	300
Perylene-d12	239		4.3	250	200	300

Polycyclic Aromatic Hydrocarbon Histograms


SHN-Cove-005(B)090314 (Net)
ARC2050
Su. Corrected Conc. (ng/Net)
90.0
80.0
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-Dibenzothiophenes
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:\GCMS5\MS50226\ARC2050.D
Operator    : ECM(YMIAO)
Acquired    :  9 Sep 2014  14:30      using AcqMethod PAH-2014.M
Instrument  :   GCMS5
Sample Name: SHN-Cove-005(B)090314
Misc Info   :
Vial Number: 61
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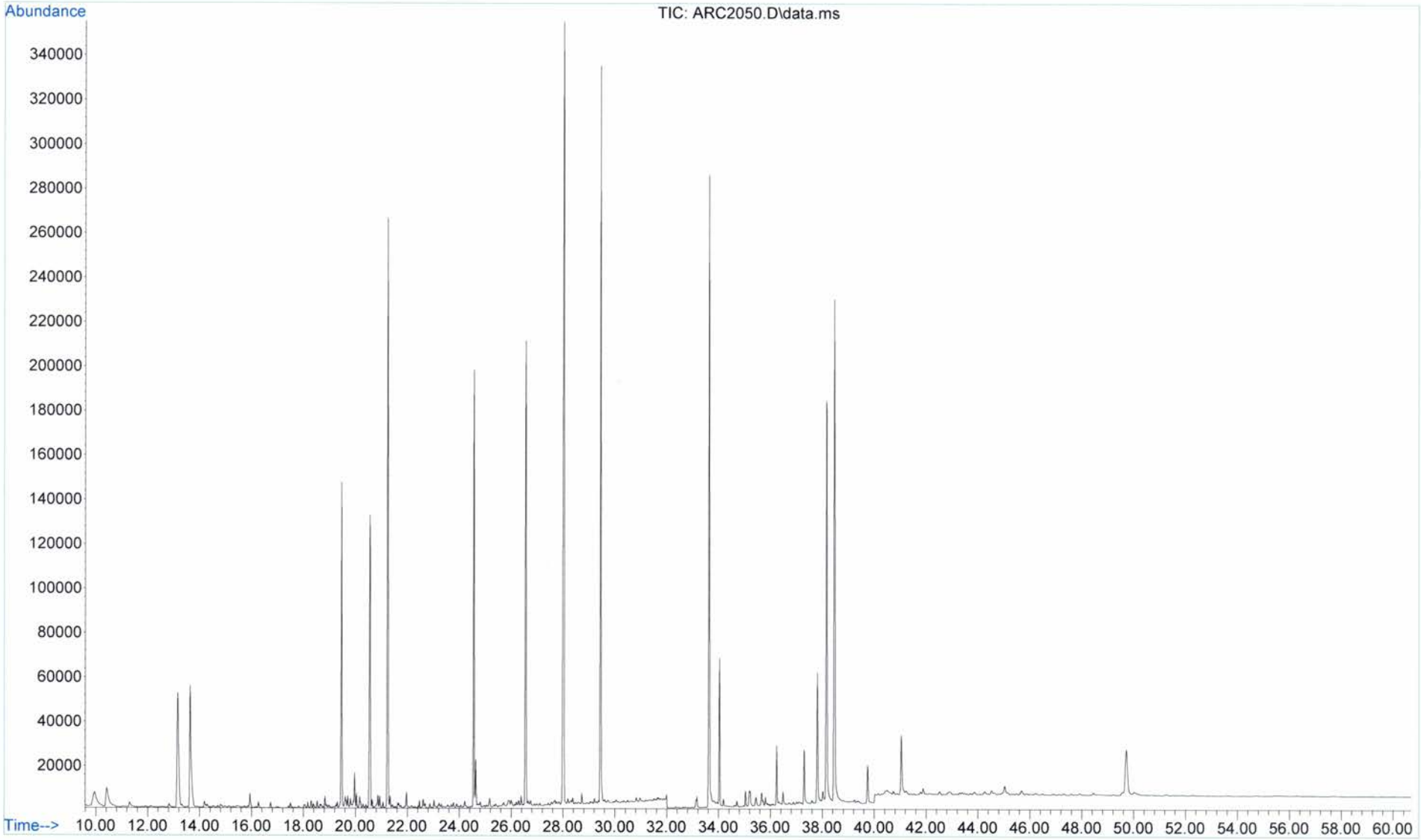


Total Petroleum Hydrocarbons/ Aliphatic Hydrocarbons Raw Data

B&B LABORATORIES ALIPHATICS/TEH QA FORM

Extraction Page: ENV 3335	Analyst: M. Dailey
Client: Arcadis Mayflower	Date: September 9, 2014
Job: #: J13034	Project Quality Manager: W Kirk
SDG #: 14090501	Date: 09/17/14

Initial Calibration: No Failures	ICV 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	
MC-252 Reference Oil No Failures	
Mass Discrimination Check (n-C36/n-C20 >0.7) No Failures	

FID Sequence Summary Report

B&B Laboratories, Inc.

Sequence name: FID10240 2014-09-08

Acquisition date: 9/8/2014 3:10:05 PM

Acquired by: Meghan Dailey

Data Directory C:\CHEM32\3\DATA\FID10240 2014-09-08

Line	Location	Sample Name	Datafile	Method	Injection Date
4	Vial 1	Solvent Blank	FID10240A.D	ALIFRONT.M	09/08/2014 18:44:00
5	Vial 2	AL-WKCC-25-030	FID10240B.D	ALIFRONT.M	09/08/2014 19:54:21
6	Vial 3	AL-SRM2779-20-003	FID10240C.D	ALIFRONT.M	09/08/2014 21:04:36
7	Vial 1	Solvent Blank	FID10240D.D	ALIFRONT.M	09/08/2014 22:14:53
8	Vial 4	AL-RetWin-003	FID10240E.D	ALIFRONT.M	09/08/2014 23:25:11
9	Vial 5	Al-WKPEM-003	FID10240F.D	ALIFRONT.M	09/09/2014 00:35:31
10	Vial 6		ENV3335A.D	ALIFRONT.M	09/09/2014 01:45:50
11	Vial 7		ENV3335B.D	ALIFRONT.M	09/09/2014 02:56:08
12	Vial 8		ENV3335C.D	ALIFRONT.M	09/09/2014 04:06:28
13	Vial 9		ARC2050.D	ALIFRONT.M	09/09/2014 05:16:47
14	Vial 10	AL-WKCC-25-030	FID10240G.D	ALIFRONT.M	09/09/2014 06:27:06

Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240B.D
Signal(s) : FID1A.CH
Acq On : 08-Sep-2014, 19:54:21
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:30:06 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	103	0.00
2		n-C8	0.972	0.945	2.8	100	0.00
3		n-C9	1.020	0.988	3.1	101	0.00
4		n-C10	1.066	1.031	3.3	100	0.00
5		n-C11	1.097	1.059	3.5	100	0.00
6	S	n-dodecane-d26	0.972	0.939	3.4	101	0.00
7		n-C12	1.147	1.107	3.5	100	0.00
10		n-C13	1.168	1.134	2.9	100	0.00
12		n-C14	1.185	1.159	2.2	101	0.00
14		n-C15	1.210	1.186	2.0	101	0.00
15		n-C16	1.215	1.200	1.2	102	0.00
16	I	5a-androstane	1.000	1.000	0.0	103	0.00
18		n-C17	0.978	0.965	1.3	102	0.00
19		Pristane	0.970	0.959	1.1	102	0.00
20		n-C18	0.965	0.958	0.7	102	0.00
21		Phytane	0.838	0.830	1.0	103	-0.01
22		n-C19	0.958	0.955	0.3	103	-0.01
23	S	n-eicosane-d42	0.825	0.827	-0.2	105	-0.01
24		n-C20	0.968	0.968	0.0	103	-0.01
25		n-C21	0.993	0.991	0.2	103	-0.01
26		n-C22	0.976	0.978	-0.2	103	-0.02
27		n-C23	0.969	0.971	-0.2	103	-0.01
28		n-C24	0.965	0.966	-0.1	103	-0.02
29		n-C25	0.958	0.960	-0.2	103	-0.02
30		n-C26	0.968	0.970	-0.2	103	-0.02
31		n-C27	0.953	0.956	-0.3	103	-0.02
32		n-C28	0.948	0.950	-0.2	104	-0.02
33		n-C29	0.934	0.937	-0.3	103	-0.02
34	S	n-triacontane-d62	0.730	0.738	-1.1	106	-0.02
35		n-C30	0.932	0.933	-0.1	103	-0.02
36		n-C31	0.902	0.904	-0.2	103	-0.02
37		n-C32	0.914	0.911	0.3	103	-0.02
38		n-C33	0.864	0.860	0.5	103	-0.02
39		n-C34	0.882	0.878	0.5	103	-0.02
40		n-C35	0.879	0.867	1.4	102	-0.03
41		n-C36	0.904	0.899	0.6	102	-0.03
42		n-C37	0.856	0.847	1.1	102	-0.05
43		n-C38	0.860	0.859	0.1	102	-0.04

44	n-C39	0.856	0.854	0.2	102	-0.06
45	n-C40	0.850	0.844	0.7	101	-0.08

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Tue Sep 09 09:30:39 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240B.D
Signal(s) : FID1A.CH
Acq On : 08-Sep-2014, 19:54:21
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:30:06 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.617	269503	50.000	ug/mlm
16)	I 5a-androstane	17.706	341748	50.040	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.337	126498	24.135	ug/mlm
23)	S n-eicosane-d42	17.171	140371	24.904	ug/mlm
34)	S n-triacontane-d62	29.051	127925	25.676	ug/mlm
	Target Compounds				
2)	n-C8	3.209	127631	24.352	ug/mlm
3)	n-C9	4.506	133673	24.320	ug/mlm
4)	n-C10	5.918	138938	24.178	ug/mlm
5)	n-C11	7.278	142972	24.175	ug/mlm
7)	n-C12	8.543	149230	24.128	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	9.720	153570	24.400	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.818	156166	24.442	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.851	160226	24.568	ug/mlm
15)	n-C16	12.861	161846	24.716	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.934	165592	24.796	ug/mlm
19)	Pristane	14.050	164110	24.771	ug/mlm
20)	n-C18	15.084	164347	24.933	ug/mlm
21)	Phytane	15.242	146387	25.592	ug/mlm
22)	n-C19	16.301	169083	25.846	ug/mlm
24)	n-C20	17.564	165852	25.086	ug/mlm
25)	n-C21	18.852	170003	25.081	ug/mlm
26)	n-C22	20.147	167175	25.089	ug/mlm
27)	n-C23	21.431	166109	25.107	ug/mlm
28)	n-C24	22.691	165416	25.107	ug/mlm
29)	n-C25	23.925	164388	25.136	ug/mlm
30)	n-C26	25.126	165899	25.103	ug/mlm
31)	n-C27	26.294	163441	25.116	ug/mlm
32)	n-C28	27.424	162368	25.079	ug/mlm
33)	n-C29	28.523	160132	25.103	ug/mlm
35)	n-C30	29.587	159499	25.058	ug/mlm
36)	n-C31	30.619	158585	25.730	ug/mlm
37)	n-C32	31.621	156244	25.017	ug/mlm
38)	n-C33	32.592	146838	24.877	ug/mlm
39)	n-C34	33.535	150074	24.924	ug/mlm
40)	n-C35	34.491	148048	24.663	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240B.D
Signal(s) : FID1A.CH
Acq On : 08-Sep-2014, 19:54:21
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:30:06 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.566	153517	24.856	ug/mlm
42)	n-C37	36.805	149115	25.518	ug/mlm
43)	n-C38	38.249	147253	25.065	ug/mlm
44)	n-C39	39.928	146473	25.048	ug/mlm
45)	n-C40	41.920	144199	24.826	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

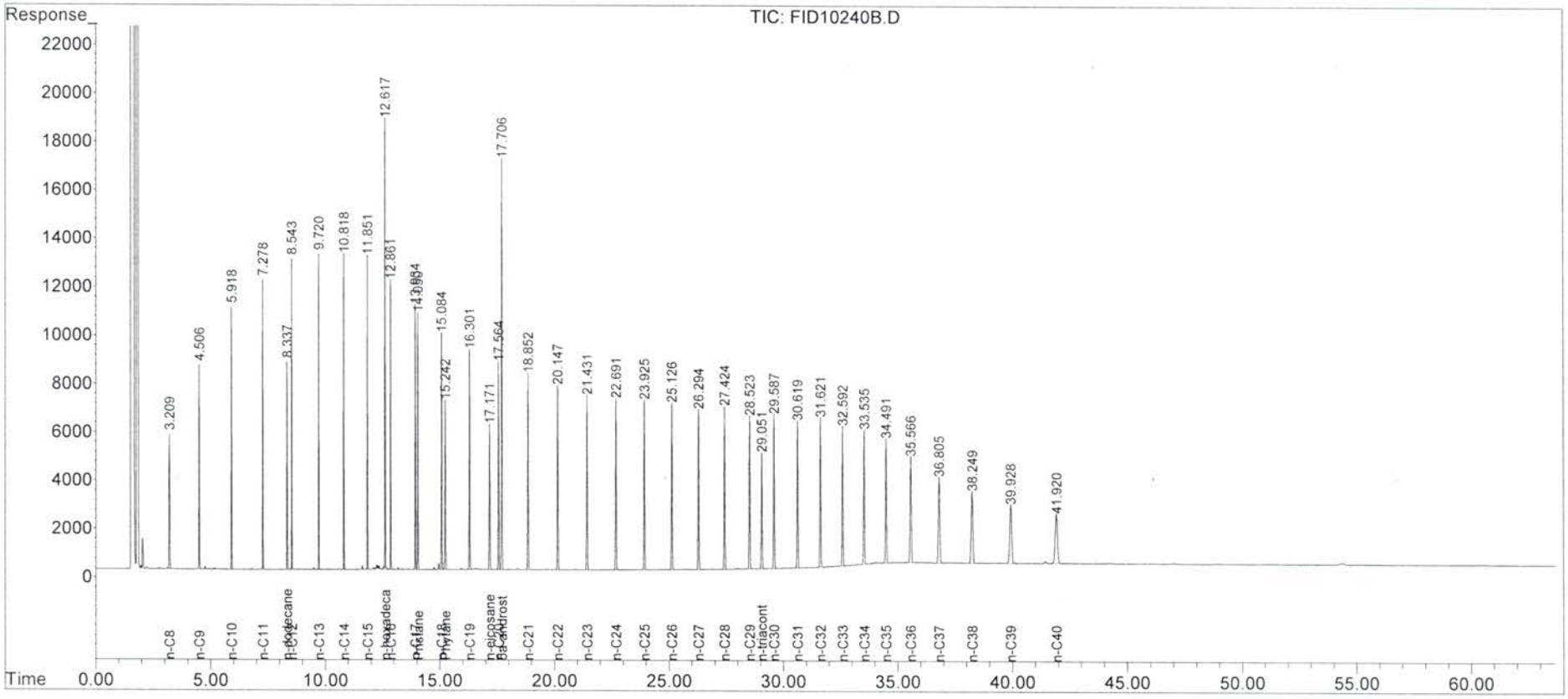
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240B.D
Signal(s) : FID1A.CH
Acq On : 08-Sep-2014, 19:54:21
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:30:06 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240G.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 06:27:06
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:34:47 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	0.972	0.951	2.2	98	0.00
3		n-C9	1.020	0.991	2.8	97	0.00
4		n-C10	1.066	1.034	3.0	97	0.00
5		n-C11	1.097	1.062	3.2	97	0.00
6	S	n-dodecane-d26	0.972	0.942	3.1	98	0.00
7		n-C12	1.147	1.111	3.1	97	0.00
10		n-C13	1.168	1.137	2.7	97	0.00
12		n-C14	1.185	1.163	1.9	98	0.00
14		n-C15	1.210	1.186	2.0	98	0.00
15		n-C16	1.215	1.203	1.0	99	0.00
16	I	5a-androstane	1.000	1.000	0.0	100	-0.01
18		n-C17	0.978	0.963	1.5	99	-0.01
19		Pristane	0.970	0.958	1.2	99	-0.01
20		n-C18	0.965	0.957	0.8	99	-0.01
21		Phytane	0.838	0.829	1.1	99	-0.01
22		n-C19	0.958	0.952	0.6	99	-0.02
23	S	n-eicosane-d42	0.825	0.827	-0.2	102	-0.02
24		n-C20	0.968	0.966	0.2	99	-0.02
25		n-C21	0.993	0.989	0.4	100	-0.02
26		n-C22	0.976	0.976	0.0	100	-0.02
27		n-C23	0.969	0.970	-0.1	100	-0.02
28		n-C24	0.965	0.965	0.0	100	-0.03
29		n-C25	0.958	0.960	-0.2	100	-0.02
30		n-C26	0.968	0.973	-0.5	100	-0.03
31		n-C27	0.953	0.960	-0.7	101	-0.02
32		n-C28	0.948	0.954	-0.6	101	-0.03
33		n-C29	0.934	0.943	-1.0	100	-0.03
34	S	n-triacontane-d62	0.730	0.743	-1.8	103	-0.03
35		n-C30	0.932	0.941	-1.0	101	-0.03
36		n-C31	0.902	0.913	-1.2	101	-0.03
37		n-C32	0.914	0.923	-1.0	101	-0.03
38		n-C33	0.864	0.873	-1.0	101	-0.03
39		n-C34	0.882	0.892	-1.1	101	-0.03
40		n-C35	0.879	0.883	-0.5	101	-0.04
41		n-C36	0.904	0.909	-0.6	100	-0.04
42		n-C37	0.856	0.858	-0.2	100	-0.06
43		n-C38	0.860	0.867	-0.8	100	-0.07

44	n-C39	0.856	0.863	-0.8	100	-0.08
45	n-C40	0.850	0.857	-0.8	99	-0.10

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Tue Sep 09 09:34:54 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240G.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 06:27:06
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:34:47 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.614	260373	50.000	ug/mlm
16)	I 5a-androstane	17.702	330616	50.040	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.336	122618	24.215	ug/mlm
23)	S n-eicosane-d42	17.168	135832	24.910	ug/mlm
34)	S n-triacontane-d62	29.044	124544	25.840	ug/mlm
	Target Compounds				
2)	n-C8	3.209	124104	24.510	ug/mlm
3)	n-C9	4.506	129645	24.414	ug/mlm
4)	n-C10	5.917	134579	24.241	ug/mlm
5)	n-C11	7.276	138508	24.241	ug/mlm
7)	n-C12	8.542	144646	24.206	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	9.718	148729	24.459	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.816	151364	24.521	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.849	154878	24.581	ug/mlm
15)	n-C16	12.857	156833	24.791	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.931	159928	24.755	ug/mlm
19)	Pristane	14.047	158631	24.750	ug/mlm
20)	n-C18	15.081	158948	24.926	ug/mlm
21)	Phytane	15.240	141437	25.559	ug/mlm
22)	n-C19	16.297	163120	25.774	ug/mlm
24)	n-C20	17.560	160131	25.036	ug/mlm
25)	n-C21	18.847	164135	25.030	ug/mlm
26)	n-C22	20.142	161499	25.053	ug/mlm
27)	n-C23	21.426	160674	25.103	ug/mlm
28)	n-C24	22.686	159883	25.084	ug/mlm
29)	n-C25	23.921	159129	25.151	ug/mlm
30)	n-C26	25.121	160946	25.174	ug/mlm
31)	n-C27	26.289	158811	25.226	ug/mlm
32)	n-C28	27.419	157670	25.173	ug/mlm
33)	n-C29	28.514	155870	25.257	ug/mlm
35)	n-C30	29.579	155623	25.272	ug/mlm
36)	n-C31	30.612	154973	25.991	ug/mlm
37)	n-C32	31.612	153165	25.350	ug/mlm
38)	n-C33	32.583	144196	25.252	ug/mlm
39)	n-C34	33.528	147493	25.320	ug/mlm
40)	n-C35	34.481	145839	25.113	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240G.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 06:27:06
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:34:47 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.557	150238	25.144	ug/mlm
42)	n-C37	36.791	146132	25.850	ug/mlm
43)	n-C38	38.223	143760	25.294	ug/mlm
44)	n-C39	39.907f	143265	25.324	ug/mlm
45)	n-C40	41.898	141744	25.225	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

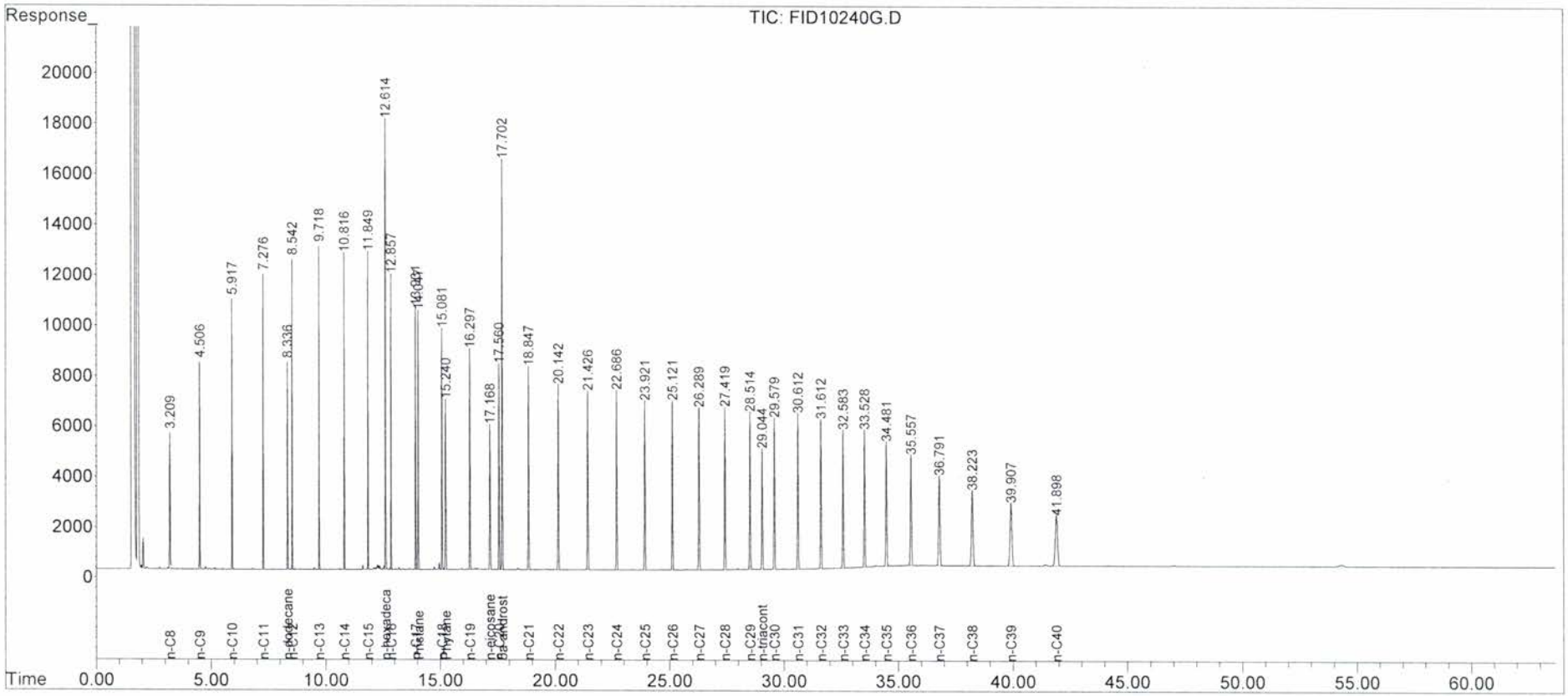
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\
Data File : FID10240G.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 06:27:06
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:34:47 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID10240C.D**		FID10240C.D
Sample Name	**AL-SRM2779-20-003**		AL-SRM2779-20-003
Misc Info	**0**		08-Sep-2014, 21:04:36
Data File Path	**C:\msdchem\2\data\FID10240**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**08-Sep-2014, 21:04:36**		0.05
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	3
Vial Number	**3**	IS Area 1	226391
Sample Multiplier	**0.05**	IS Area 2	359431

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.21	1399370	15.89	15.893
3)	n-C9	4.51	1195460	12.95	12.946
4)	n-C10	5.93	1106090	11.46	11.457
5)	n-C11	7.29	1022550	10.29	10.291
7)	n-C12	8.55	951855	9.16	9.160
8)	i-13	8.74	231485	2.19	2.189
9)	i-14	9.44	155613	1.45	1.450
10)	n-C13	9.73	870496	8.23	8.232
11)	i-15	10.60	220451	2.01	2.012
12)	n-C14	10.83	777702	7.24	7.245
13)	i-16	11.50	310753	2.82	2.825
14)	n-C15	11.86	759258	6.93	6.929
15)	n-C16	12.87	654125	5.95	5.946
17)	i-18	13.41	216893	1.56	1.564
18)	n-C17	13.95	599443	4.27	4.267
19)	Pristane	14.05	312241	2.24	2.241
20)	n-C18	15.09	479862	3.46	3.461
21)	Phytane	15.25	193555	1.61	1.609
22)	n-C19	16.31	468221	3.40	3.403
24)	n-C20	17.57	366436	2.63	2.635
25)	n-C21	18.86	307965	2.16	2.160
26)	n-C22	20.15	267046	1.91	1.905
27)	n-C23	21.44	242503	1.74	1.743
28)	n-C24	22.70	214904	1.55	1.551
29)	n-C25	23.93	179726	1.31	1.306
30)	n-C26	25.13	149039	1.07	1.072
31)	n-C27	26.30	117813	0.86	0.861
32)	n-C28	27.43	104538	0.77	0.768
33)	n-C29	28.53	95256.2	0.71	0.710
35)	n-C30	29.59	84738.7	0.63	0.633
36)	n-C31	30.62	71647.5	0.55	0.553
37)	n-C32	31.62	57153.8	0.44	0.435
38)	n-C33	32.59	54788.1	0.44	0.441
39)	n-C34	33.53	52190.9	0.41	0.412
40)	n-C35	34.50	40772.4	0.32	0.323
41)	n-C36	35.56	25092.2	0.19	0.193
42)	n-C37	36.81	23055.2	0.19	0.188
43)	n-C38	38.25	18900	0.15	0.153
44)	n-C39	39.93	19372.6	0.16	0.157
45)	n-C40	41.90	18795.2	0.15	0.154
46)	TPH	5.93	85946400	649.93	649.925
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	8.34	87624.6	1.00	99.5
23)	n-eicosane-d42	17.17	117128	0.99	99.0
34)	n-triacontane-d62	29.05	92426.4	0.88	88.2
1)	n-hexadecane-d34	12.62	226391	2.50	226391.000
16)	5a-androstane	17.72	359431	50.04	359431.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : FID10240C.D
Signal(s) : FID1A.CH
Acq On : 08-Sep-2014, 21:04:36
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Sep 09 09:46:39 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.619	226391	50.000 ug/mlm
16) I	5a-androstane	17.715	359431	50.040 ug/mlm
System Monitoring Compounds				
6) S	n-dodecane-d26	8.337	87625	0.995 ug/mlm
23) S	n-eicosane-d42	17.173	117128	0.988 ug/mlm
34) S	n-triacontane-d62	29.055	92426	0.882 ug/mlm
Target Compounds				
2)	n-C8	3.213	1399373	15.893 ug/mlm
3)	n-C9	4.514	1195456	12.946 ug/mlm
4)	n-C10	5.927	1106095	11.457 ug/mlm
5)	n-C11	7.287	1022555	10.291 ug/mlm
7)	n-C12	8.553	951855	9.160 ug/mlm
8)	i-13	8.736	231485	2.189 ug/mlm
9)	i-14	9.441	155613	1.450 ug/mlm
10)	n-C13	9.730	870496	8.232 ug/mlm
11)	i-15	10.600	220451	2.012 ug/mlm
12)	n-C14	10.828	777702	7.245 ug/mlm
13)	i-16	11.498	310753	2.825 ug/mlm
14)	n-C15	11.860	759258	6.929 ug/mlm
15)	n-C16	12.871	654125	5.946 ug/mlm
17)	i-18	13.414	216893	1.564 ug/mlm
18)	n-C17	13.945	599443	4.267 ug/mlm
19)	Pristane	14.051	312241	2.241 ug/mlm
20)	n-C18	15.094	479862	3.461 ug/mlm
21)	Phytane	15.248	193555	1.609 ug/mlm
22)	n-C19	16.310	468221	3.403 ug/mlm
24)	n-C20	17.574	366436	2.635 ug/mlm
25)	n-C21	18.862	307965	2.160 ug/mlm
26)	n-C22	20.155	267046	1.905 ug/mlm
27)	n-C23	21.439	242503	1.743 ug/mlm
28)	n-C24	22.702	214904	1.551 ug/mlm
29)	n-C25	23.934	179726	1.306 ug/mlm
30)	n-C26	25.135	149039	1.072 ug/mlm
31)	n-C27	26.302	117813	0.861 ug/mlm
32)	n-C28	27.427	104538	0.768 ug/mlm
33)	n-C29	28.526	95256	0.710 ug/mlm
35)	n-C30	29.589	84739	0.633 ug/mlm
36)	n-C31	30.621	71647	0.553 ug/mlm
37)	n-C32	31.617	57154	0.435 ug/mlm
38)	n-C33	32.590	54788	0.441 ug/mlm
39)	n-C34	33.534	52191	0.412 ug/mlm
40)	n-C35	34.496	40772	0.323 ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : FID10240C.D
Signal(s) : FID1A.CH
Acq On : 08-Sep-2014, 21:04:36
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Sep 09 09:46:39 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.564	25092	0.193	ug/mlm
42)	n-C37	36.808	23055	0.188	ug/mlm
43)	n-C38	38.246	18900	0.153	ug/mlm
44)	n-C39	39.933	19373	0.157	ug/mlm
45)	n-C40	41.903	18795	0.154	ug/mlm
46)	TPH	5.927f	85946360	649.927	ug/mlm
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

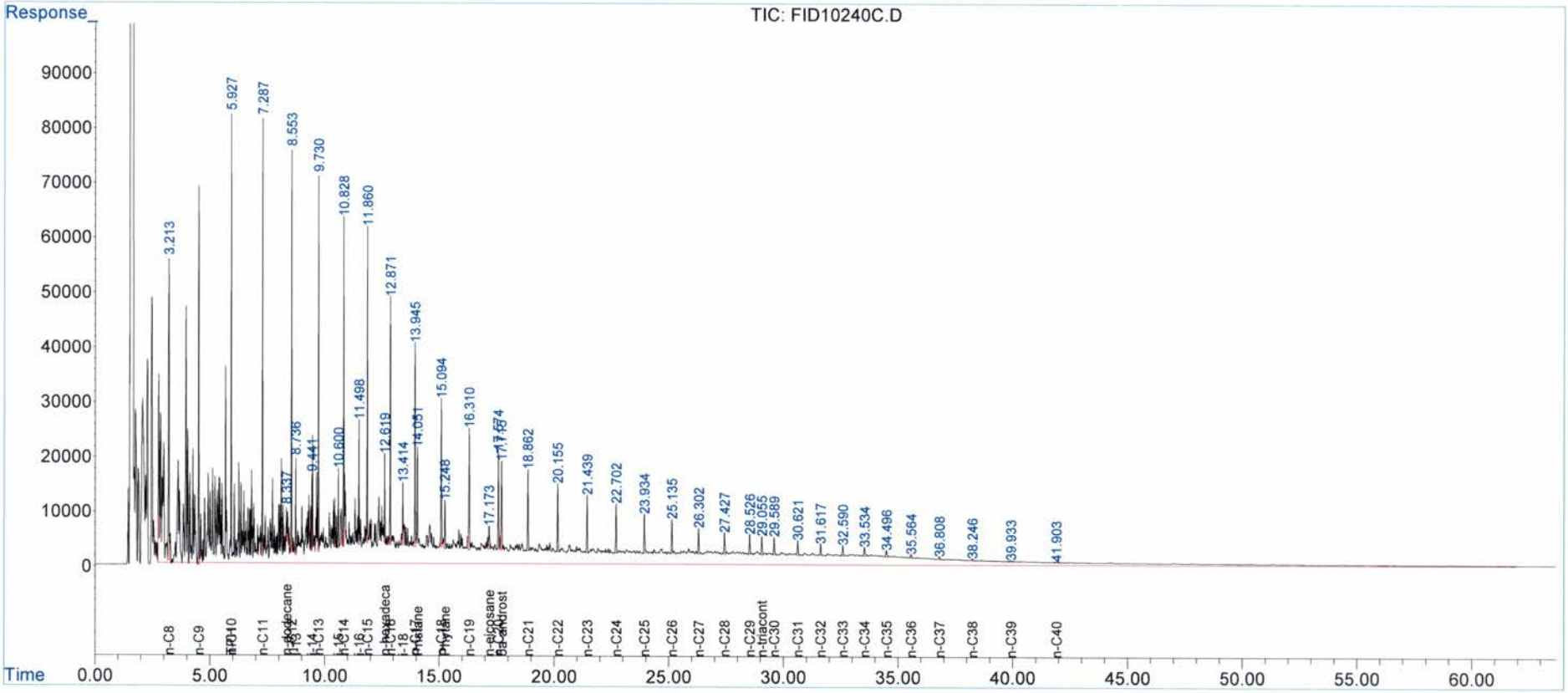
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : FID10240C.D
Signal(s) : FID1A.CH
Acq On : 08-Sep-2014, 21:04:36
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Sep 09 09:46:39 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID10240F.D**		FID10240F.D
Sample Name	**AI-WKPEM-003**		AI-WKPEM-003
Misc Info	**0**		09-Sep-2014, 00:35:31
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3335\FID10240**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**09-Sep-2014, 00:35:31**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	5
Vial Number	**5**	IS Area 1	239664
Sample Multiplier	**1**	IS Area 2	308233

#	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	12.61	5074400	894.93	894.929
47)	TRH1	12.61	354274	62.48	62.480
48)	TRH2	17.70	422979	74.60	74.597
49)	TRH3	26.90	5637.85	0.99	0.994
50)	TRH4	29.05	101543	17.91	17.908
51)	TRH5	35.28	19012.5	3.35	3.353
52)	TRH6	42.43	6032.82	1.06	1.064
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	8.34	89750.6	19.26	96.3
23)	n-eicosane-d42	17.17	100752	19.82	99.3
34)	n-triacontane-d62	29.05	94043.2	20.93	104.7
1)	n-hexadecane-d34	12.61	239664	50.00	239664.000
16)	5a-androstane	17.70	308233	50.04	308233.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : FID10240F.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 00:35:31
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:39:57 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.614	239664	50.000	ug/mlm
16) I	5a-androstane	17.703	308233	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.335	89751	19.256	ug/mlm
23) S	n-eicosane-d42	17.169	100752	19.819	ug/mlm
34) S	n-triacontane-d62	29.046	94043	20.928	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\FID10240\
Data File : FID10240F.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 00:35:31
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:39:57 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.614f	5074399	894.929	ug/mlm
47)	TRH1	12.614f	354274	62.480	ug/mlm
48)	TRH2	17.703	422979	74.597	ug/mlm
49)	TRH3	26.900f	5638	0.994	ug/mlm
50)	TRH4	29.046f	101543	17.908	ug/mlm
51)	TRH5	35.280f	19013	3.353	ug/mlm
52)	TRH6	42.427	6033	1.064	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

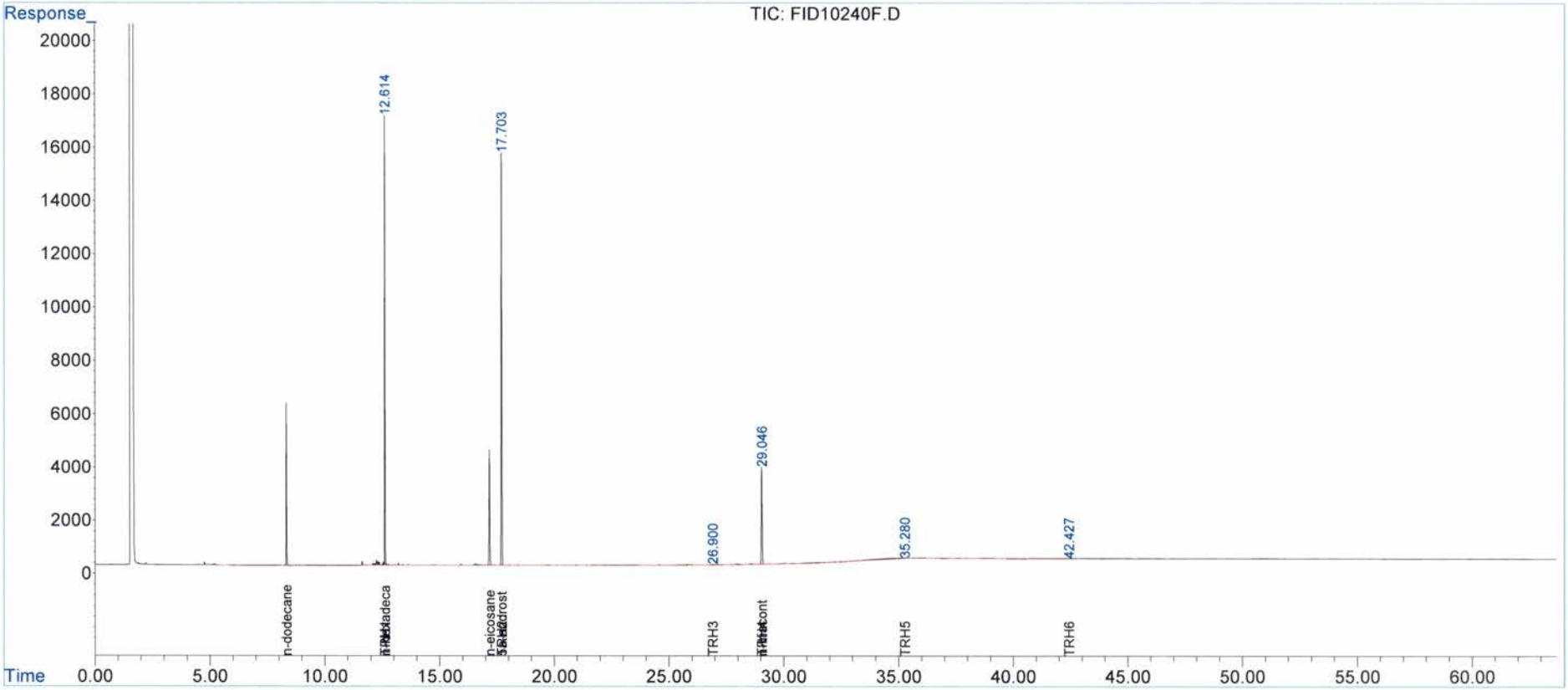
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : FID10240F.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 00:35:31
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:39:57 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3335A.D**		ENV3335A.D
Sample Name	**Method Blank**		Method Blank
Misc Info	**0**		09-Sep-2014, 01:45:50
Data File Path	**C:\msdchem\2\data\FID10240**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**09-Sep-2014, 01:45:50**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	6
Vial Number	**6**	IS Area 1	213817
Sample Multiplier	**1**	IS Area 2	274233

#	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	12.61	4454250	882.95	882.952
47)	TRH1	8.34	80327.6	15.92	15.923
48)	TRH2	12.61	606422	120.21	120.209
49)	TRH3	27.24	9087.45	1.80	1.801
50)	TRH4	29.04	85502.6	16.95	16.949
51)	TRH5	35.05	12528.4	2.48	2.483
52)	TRH6	35.78	5176.37	1.03	1.026
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	8.34	69424.9	16.70	83.5
23)	n-eicosane-d42	17.17	85131.4	18.82	94.3
34)	n-triacontane-d62	29.04	79300.7	19.84	99.2
1)	n-hexadecane-d34	12.61	213817	50.00	213817.000
16)	5a-androstane	17.70	274233	50.04	274233.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335A.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 01:45:50
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:54:24 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.615	213817	50.000	ug/mlm
16) I	5a-androstane	17.702	274233	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.335	69425	16.696	ug/mlm
23) S	n-eicosane-d42	17.168	85131	18.822	ug/mlm
34) S	n-triacontane-d62	29.043	79301	19.836	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/ml
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/ml
26)	n-C22	0.000	0	N.D.	ug/mld
27)	n-C23	0.000	0	N.D.	ug/ml
28)	n-C24	0.000	0	N.D.	ug/mld
29)	n-C25	0.000	0	N.D.	ug/ml
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/ml
36)	n-C31	0.000	0	N.D.	ug/ml
37)	n-C32	0.000	0	N.D.	ug/ml
38)	n-C33	0.000	0	N.D.	ug/ml
39)	n-C34	0.000	0	N.D.	ug/ml
40)	n-C35	0.000	0	N.D.	ug/ml

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335A.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 01:45:50
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:54:24 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.615f	4454254	882.952	ug/mlm
47)	TRH1	8.335	80328	15.923	ug/mlm
48)	TRH2	12.615f	606422	120.209	ug/mlm
49)	TRH3	27.240f	9087	1.801	ug/mlm
50)	TRH4	29.043f	85503	16.949	ug/mlm
51)	TRH5	35.047f	12528	2.483	ug/mlm
52)	TRH6	35.783f	5176	1.026	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

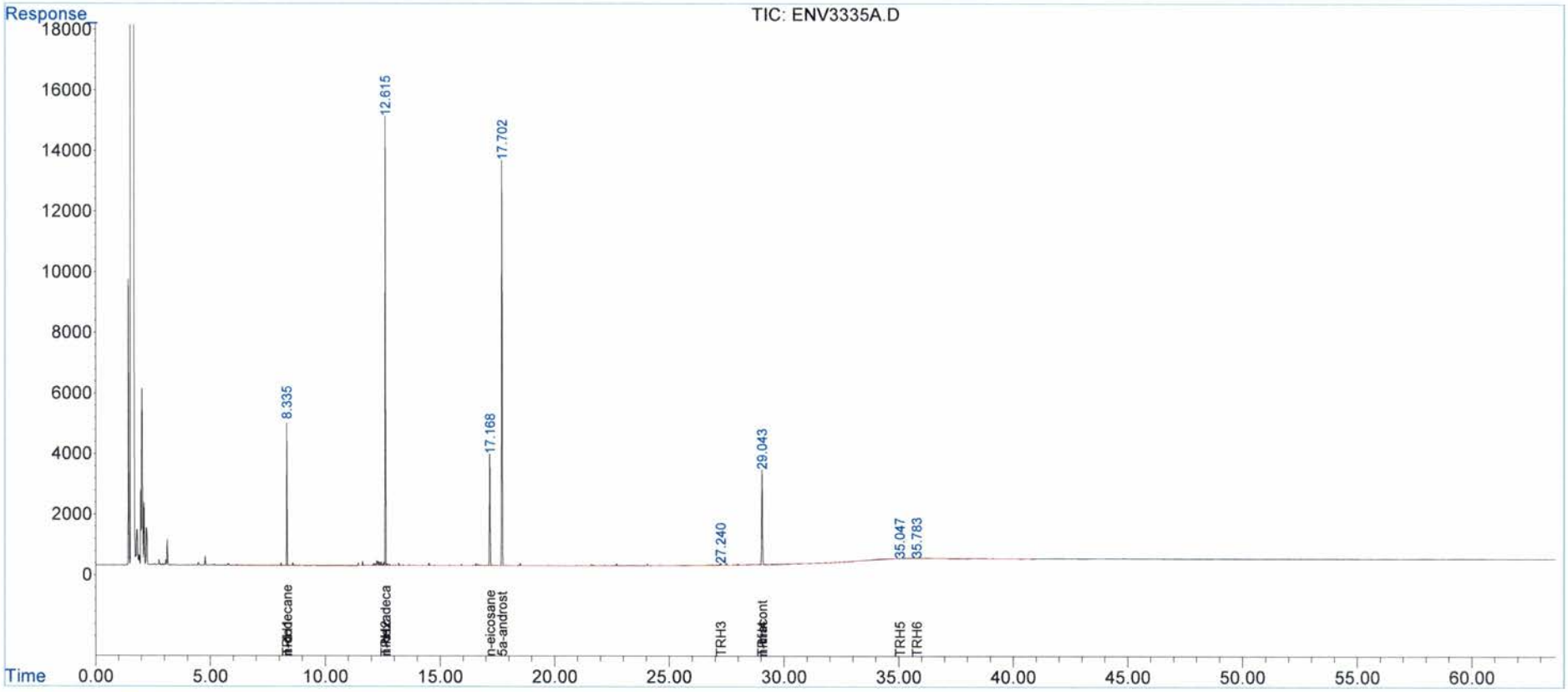
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335A.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 01:45:50
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 09:54:24 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3335B.D**		ENV3335B.D
Sample Name	**Blank Spike**		Blank Spike
Misc Info	**0**		09-Sep-2014, 02:56:08
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3335\FID10240**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**09-Sep-2014, 02:56:08**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	7
Vial Number	**7**	IS Area 1	226360
Sample Multiplier	**1**	IS Area 2	289970

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.21	20624.2	4.69	4.685
3)	n-C9	4.51	36360.3	7.88	7.876
4)	n-C10	5.92	40238.7	8.34	8.337
5)	n-C11	7.28	43302.5	8.72	8.717
7)	n-C12	8.54	45935.3	8.84	8.842
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.72	47719.7	9.03	9.027
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.82	49139.2	9.16	9.157
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.85	51398	9.38	9.383
15)	n-C16	12.86	52219.9	9.49	9.495
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.93	54048.7	9.54	9.539
19)	Pristane	14.05	53702	9.55	9.553
20)	n-C18	15.08	54340.2	9.72	9.716
21)	Phytane	15.24	48426.4	9.98	9.978
22)	n-C19	16.30	56548.8	10.19	10.188
24)	n-C20	17.56	55288.3	9.86	9.856
25)	n-C21	18.85	56807.4	9.88	9.877
26)	n-C22	20.14	55998.5	9.90	9.905
27)	n-C23	21.42	55733.3	9.93	9.928
28)	n-C24	22.68	57590	10.30	10.302
29)	n-C25	23.92	55432.7	9.99	9.990
30)	n-C26	25.12	56062	10.00	9.998
31)	n-C27	26.29	54910.9	9.95	9.945
32)	n-C28	27.41	54968.9	10.01	10.006
33)	n-C29	28.51	54573.1	10.08	10.083
35)	n-C30	29.58	54175.5	10.03	10.031
36)	n-C31	30.61	54402.1	10.40	10.403
37)	n-C32	31.61	53365.1	10.07	10.071
38)	n-C33	32.58	50208.7	10.03	10.025
39)	n-C34	33.53	51186.5	10.02	10.019
40)	n-C35	34.48	50767.7	9.97	9.967
41)	n-C36	35.56	52340.1	9.99	9.988
42)	n-C37	36.79	51077.3	10.30	10.302
43)	n-C38	38.22	49990.6	10.03	10.029
44)	n-C39	39.91	50236.3	10.12	10.125
45)	n-C40	41.89	48977.8	9.94	9.938
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	8.34	77362	17.57	87.9
23)	n-eicosane-d42	17.17	92874.2	19.42	97.3
34)	n-triacontane-d62	29.04	87078.2	20.60	103.0
1)	n-hexadecane-d34	12.61	226360	50.00	226360.000
16)	5a-androstane	17.70	289970	50.04	289970.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335B.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 02:56:08
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:05:41 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.613	226360	50.000	ug/mlm
16) I	5a-androstane	17.702	289970	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.335	77362	17.574	ug/mlm
23) S	n-eicosane-d42	17.167	92874	19.420	ug/mlm
34) S	n-triacontane-d62	29.044	87078	20.599	ug/mlm
Target Compounds					
2)	n-C8	3.211	20624	4.685	ug/mlm
3)	n-C9	4.505	36360	7.876	ug/mlm
4)	n-C10	5.917	40239	8.337	ug/mlm
5)	n-C11	7.275	43302	8.717	ug/mlm
7)	n-C12	8.541	45935	8.842	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	9.717	47720	9.027	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.816	49139	9.157	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.848	51398	9.383	ug/mlm
15)	n-C16	12.856	52220	9.495	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.930	54049	9.539	ug/mlm
19)	Pristane	14.045	53702	9.553	ug/mlm
20)	n-C18	15.078	54340	9.716	ug/mlm
21)	Phytane	15.239	48426	9.978	ug/mlm
22)	n-C19	16.295	56549	10.188	ug/mlm
24)	n-C20	17.559	55288	9.856	ug/mlm
25)	n-C21	18.847	56807	9.877	ug/mlm
26)	n-C22	20.140	55999	9.905	ug/mlm
27)	n-C23	21.424	55733	9.928	ug/mlm
28)	n-C24	22.684	57590	10.302	ug/mlm
29)	n-C25	23.919	55433	9.990	ug/mlm
30)	n-C26	25.118	56062	9.998	ug/mlm
31)	n-C27	26.285	54911	9.945	ug/mlm
32)	n-C28	27.415	54969	10.006	ug/mlm
33)	n-C29	28.512	54573	10.083	ug/mlm
35)	n-C30	29.579	54176	10.031	ug/mlm
36)	n-C31	30.609	54402	10.403	ug/mlm
37)	n-C32	31.610	53365	10.070	ug/mlm
38)	n-C33	32.582	50209	10.025	ug/mlm
39)	n-C34	33.525	51186	10.019	ug/mlm
40)	n-C35	34.480	50768	9.967	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335B.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 02:56:08
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:05:41 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.556	52340	9.988	ug/mlm
42)	n-C37	36.792	51077	10.302	ug/mlm
43)	n-C38	38.223	49991	10.029	ug/mlm
44)	n-C39	39.907f	50236	10.125	ug/mlm
45)	n-C40	41.891f	48978	9.938	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

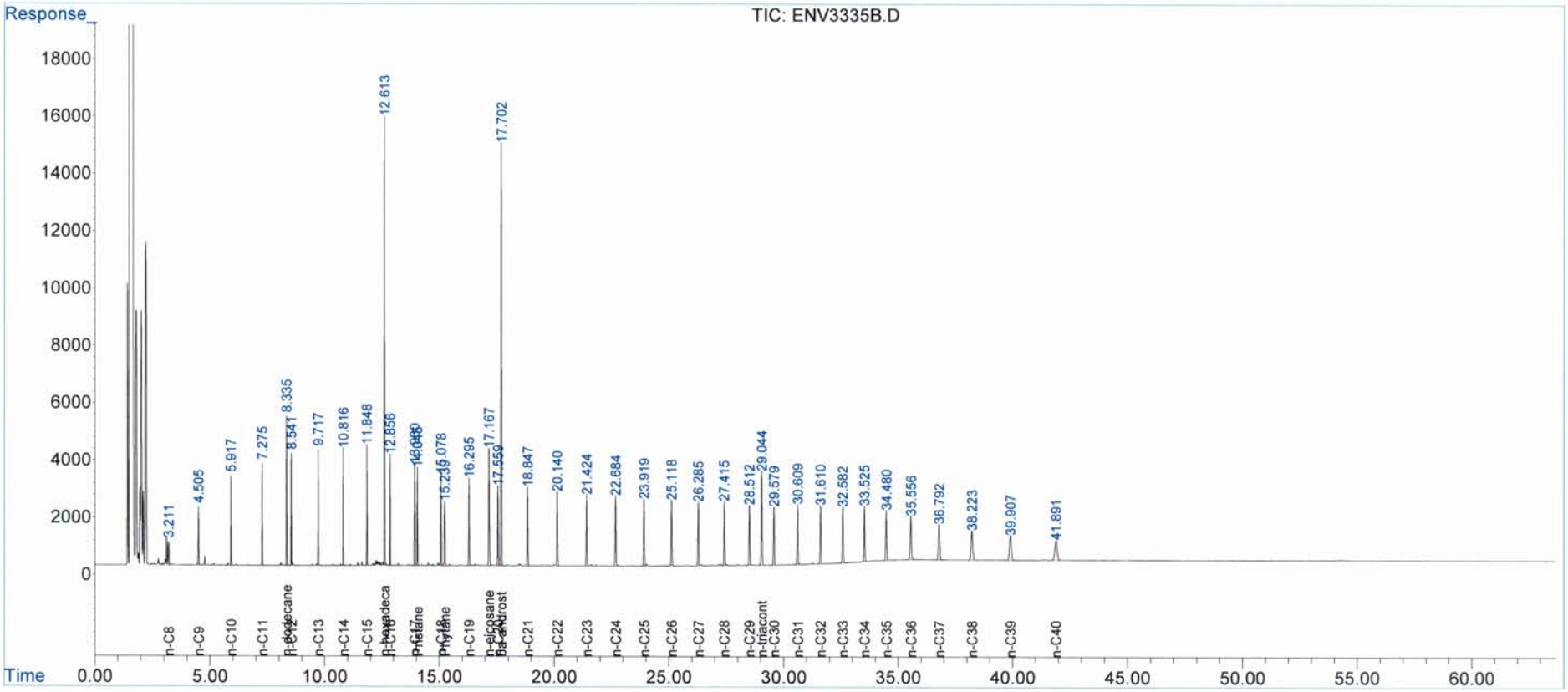
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335B.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 02:56:08
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:05:41 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3335C.D**		ENV3335C.D
Sample Name	**Blank Spike Dupl**		Blank Spike Dupl
Misc Info	**0**		09-Sep-2014, 04:06:28
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3335\FID10240**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**09-Sep-2014, 04:06:28**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	8
Vial Number	**8**	IS Area 1	217439
Sample Multiplier	**1**	IS Area 2	278251

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.21	20535.5	4.86	4.856
3)	n-C9	4.51	34913.5	7.87	7.873
4)	n-C10	5.92	38320.5	8.27	8.265
5)	n-C11	7.28	41181.2	8.63	8.631
7)	n-C12	8.54	43642.7	8.75	8.746
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.72	45406.9	8.94	8.942
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.82	46944.3	9.11	9.107
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.85	49202.4	9.35	9.351
15)	n-C16	12.86	50057.7	9.48	9.475
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.93	51604	9.49	9.491
19)	Pristane	14.05	51289.8	9.51	9.508
20)	n-C18	15.08	51632.1	9.62	9.621
21)	Phytane	15.24	46173.1	9.91	9.914
22)	n-C19	16.30	53719.9	10.09	10.086
24)	n-C20	17.56	52490.4	9.75	9.751
25)	n-C21	18.85	53875	9.76	9.762
26)	n-C22	20.14	52981.7	9.77	9.766
27)	n-C23	21.42	52930.1	9.83	9.826
28)	n-C24	22.68	54606.3	10.18	10.179
29)	n-C25	23.92	52478	9.86	9.855
30)	n-C26	25.12	53162.2	9.88	9.880
31)	n-C27	26.28	52349.7	9.88	9.880
32)	n-C28	27.42	52269.9	9.92	9.916
33)	n-C29	28.51	51812.9	9.98	9.976
35)	n-C30	29.58	51406.7	9.92	9.919
36)	n-C31	30.61	51824.7	10.33	10.327
37)	n-C32	31.61	50346.3	9.90	9.901
38)	n-C33	32.58	47732.7	9.93	9.932
39)	n-C34	33.52	48653.7	9.92	9.924
40)	n-C35	34.48	47989.9	9.82	9.819
41)	n-C36	35.56	49341.8	9.81	9.812
42)	n-C37	36.79	48142.9	10.12	10.119
43)	n-C38	38.23	47352.1	9.90	9.899
44)	n-C39	39.90	47139	9.90	9.901
45)	n-C40	41.89	46547.9	9.84	9.843
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	8.34	74630.2	17.65	88.2
23)	n-eicosane-d42	17.17	89275.1	19.45	97.5
34)	n-triacontane-d62	29.04	83676.7	20.63	103.2
1)	n-hexadecane-d34	12.61	217439	50.00	217439.000
16)	5a-androstane	17.70	278251	50.04	278251.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335C.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 04:06:28
Operator : Meghan Dailey
Sample : Blank Spike Dupl
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:15:53 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.614	217439	50.000	ug/mlm
16) I	5a-androstane	17.701	278251	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.335	74630	17.649	ug/mlm
23) S	n-eicosane-d42	17.167	89275	19.453	ug/mlm
34) S	n-triacontane-d62	29.042	83677	20.628	ug/mlm
	Target Compounds				
2)	n-C8	3.210	20536	4.856	ug/mlm
3)	n-C9	4.505	34913	7.873	ug/mlm
4)	n-C10	5.917	38320	8.265	ug/mlm
5)	n-C11	7.276	41181	8.630	ug/mlm
7)	n-C12	8.541	43643	8.746	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	9.717	45407	8.942	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.815	46944	9.106	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.848	49202	9.351	ug/mlm
15)	n-C16	12.857	50058	9.475	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.931	51604	9.491	ug/mlm
19)	Pristane	14.045	51290	9.508	ug/mlm
20)	n-C18	15.080	51632	9.621	ug/mlm
21)	Phytane	15.238	46173	9.914	ug/mlm
22)	n-C19	16.296	53720	10.086	ug/mlm
24)	n-C20	17.558	52490	9.751	ug/mlm
25)	n-C21	18.845	53875	9.762	ug/mlm
26)	n-C22	20.142	52982	9.766	ug/mlm
27)	n-C23	21.425	52930	9.826	ug/mlm
28)	n-C24	22.685	54606	10.179	ug/mlm
29)	n-C25	23.919	52478	9.855	ug/mlm
30)	n-C26	25.119	53162	9.880	ug/mlm
31)	n-C27	26.284	52350	9.880	ug/mlm
32)	n-C28	27.417	52270	9.916	ug/mlm
33)	n-C29	28.512	51813	9.976	ug/mlm
35)	n-C30	29.578	51407	9.919	ug/mlm
36)	n-C31	30.608	51825	10.327	ug/mlm
37)	n-C32	31.609	50346	9.901	ug/mlm
38)	n-C33	32.583	47733	9.932	ug/mlm
39)	n-C34	33.524	48654	9.924	ug/mlm
40)	n-C35	34.479	47990	9.819	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335C.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 04:06:28
Operator : Meghan Dailey
Sample : Blank Spike Dupl
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:15:53 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.555	49342	9.812	ug/mlm
42)	n-C37	36.787	48143	10.119	ug/mlm
43)	n-C38	38.225	47352	9.899	ug/mlm
44)	n-C39	39.900f	47139	9.901	ug/mlm
45)	n-C40	41.891f	46548	9.843	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

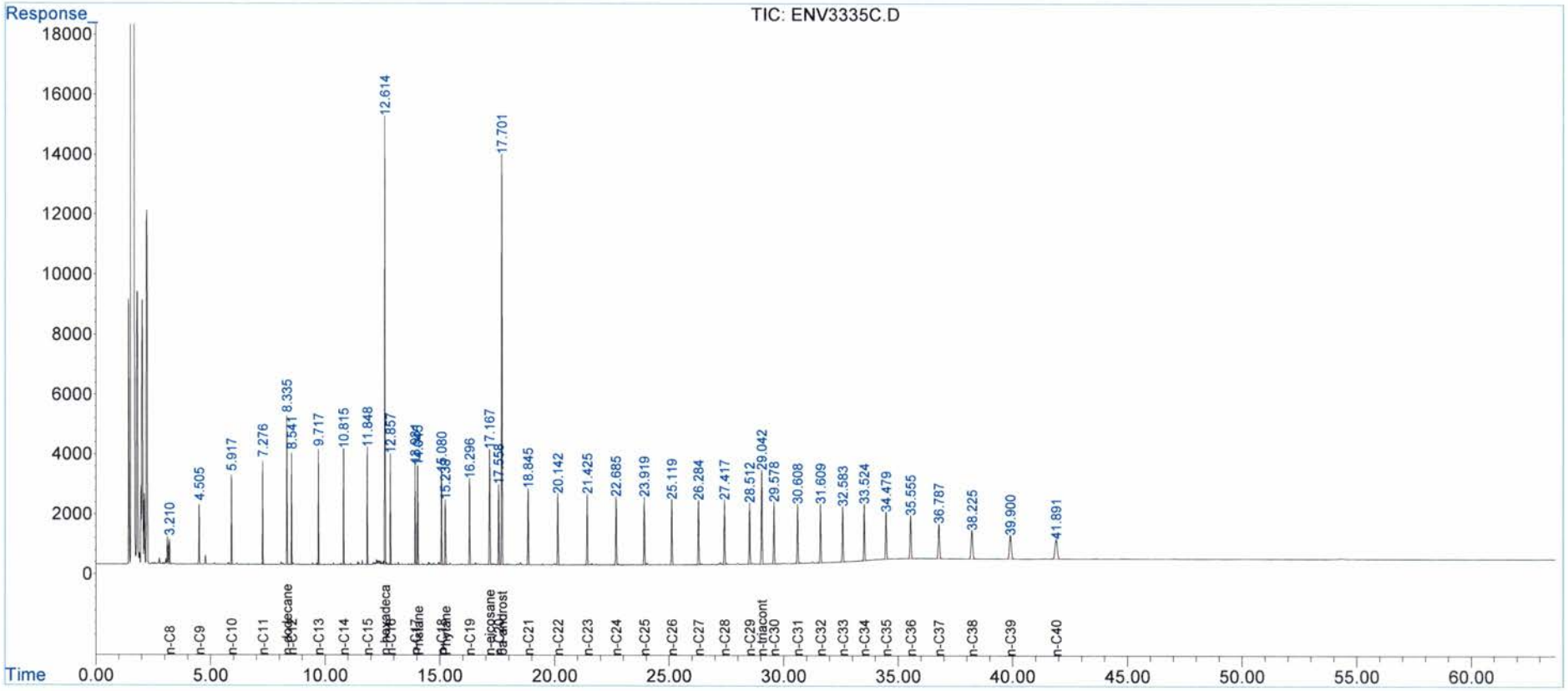
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ENV3335C.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 04:06:28
Operator : Meghan Dailey
Sample : Blank Spike Dupl
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:15:53 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC2050.D**		ARC2050.D
Sample Name	**SHN-Cove-005(B)090314**		SHN-Cove-005(B)090314
Misc Info	**0**		09-Sep-2014, 05:16:47
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3335\FID10240**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**09-Sep-2014, 05:16:47**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	9
Vial Number	**9**	IS Area 1	213023
Sample Multiplier	**1**	IS Area 2	272681

#	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	21.42	491.685	0.09	0.093
28)	n-C24	22.71	1518.61	0.29	0.289
29)	n-C25	23.92	2667.44	0.51	0.511
30)	n-C26	25.12	8032.78	1.52	1.523
31)	n-C27	26.28	15312.6	2.95	2.949
32)	n-C28	27.41	19147.5	3.71	3.707
33)	n-C29	28.51	21732.1	4.27	4.270
35)	n-C30	29.58	20808.8	4.10	4.097
36)	n-C31	30.61	19916.6	4.05	4.050
37)	n-C32	31.61	15757.9	3.16	3.162
38)	n-C33	32.58	11759	2.50	2.497
39)	n-C34	33.52	9860.08	2.05	2.052
40)	n-C35	34.48	7200.56	1.50	1.503
41)	n-C36	35.55	5343.23	1.08	1.084
42)	n-C37	36.79	4767.61	1.02	1.023
43)	n-C38	38.23	3078.15	0.66	0.657
44)	n-C39	39.90	2070.88	0.44	0.444
45)	n-C40	41.89	1592.53	0.34	0.344
46)	TPH	12.61	5025720	1001.90	1001.900
47)	TRH1	12.61	299536	59.71	59.714
48)	TRH2	17.70	395963	78.94	78.937
49)	TRH3	29.04	191665	38.21	38.209
50)	TRH4	30.61	122774	24.48	24.476
51)	TRH5	35.55	31964.1	6.37	6.372
52)	TRH6	39.90	12464.8	2.48	2.485
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	8.33	40627.8	9.81	49.0
23)	n-eicosane-d42	17.17	82894.7	18.43	92.3
34)	n-triacontane-d62	29.04	77673.2	19.54	97.7
1)	n-hexadecane-d34	12.61	213023	50.00	213023.000
16)	5a-androstane	17.70	272681	50.04	272681.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ARC2050.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 05:16:47
Operator : Meghan Dailey
Sample : SHN-Cove-005(B)090314
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:25:59 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.613	213023	50.000	ug/mlm
16) I	5a-androstane	17.700	272681	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.334	40628	9.807	ug/mlm
23) S	n-eicosane-d42	17.166	82895	18.432	ug/mlm
34) S	n-triacontane-d62	29.040	77673	19.539	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/ml
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	21.420	492	0.093	ug/mlm
28)	n-C24	22.709	1519	0.289	ug/mlm
29)	n-C25	23.916	2667	0.511	ug/mlm
30)	n-C26	25.119	8033	1.523	ug/mlm
31)	n-C27	26.282	15313	2.949	ug/mlm
32)	n-C28	27.413	19147	3.707	ug/mlm
33)	n-C29	28.513	21732	4.270	ug/mlm
35)	n-C30	29.575	20809	4.097	ug/mlm
36)	n-C31	30.607	19917	4.050	ug/mlm
37)	n-C32	31.608	15758	3.162	ug/mlm
38)	n-C33	32.579	11759	2.497	ug/mlm
39)	n-C34	33.523	9860	2.052	ug/mlm
40)	n-C35	34.478	7201	1.503	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ARC2050.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 05:16:47
Operator : Meghan Dailey
Sample : SHN-Cove-005(B)090314
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:25:59 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.553	5343	1.084	ug/mlm
42)	n-C37	36.792	4768	1.023	ug/mlm
43)	n-C38	38.225	3078	0.657	ug/mlm
44)	n-C39	39.897f	2071	0.444	ug/mlm
45)	n-C40	41.887f	1593	0.344	ug/mlm
46)	TPH	12.613f	5025718	1001.904	ug/mlm
47)	TRH1	12.613f	299536	59.714	ug/mlm
48)	TRH2	17.700	395963	78.937	ug/mlm
49)	TRH3	29.040f	191665	38.209	ug/mlm
50)	TRH4	30.607f	122774	24.476	ug/mlm
51)	TRH5	35.553f	31964	6.372	ug/mlm
52)	TRH6	39.897	12465	2.485	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

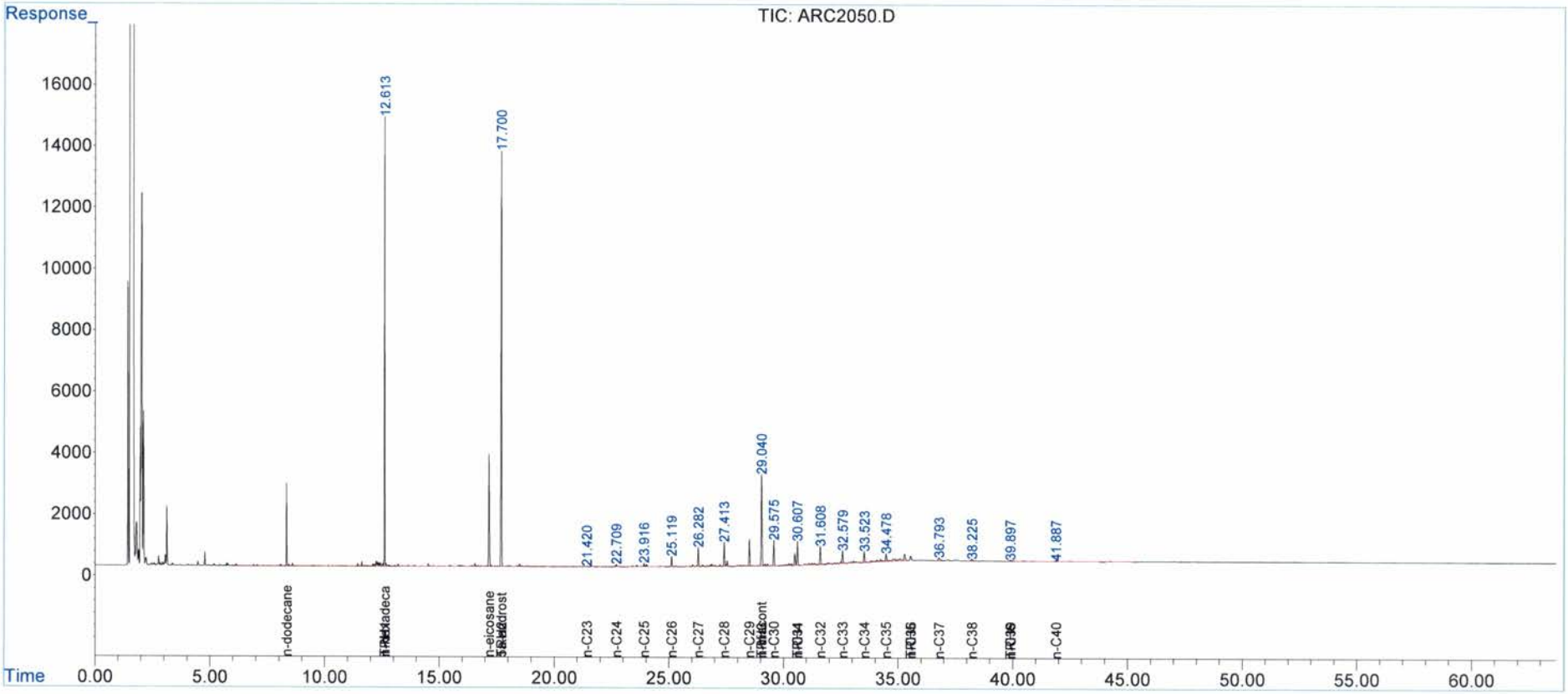
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10240\
Data File : ARC2050.D
Signal(s) : FID1A.CH
Acq On : 09-Sep-2014, 05:16:47
Operator : Meghan Dailey
Sample : SHN-Cove-005(B)090314
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 09 10:25:59 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3335\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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 3335	Analyst: Y. Miao
Client: Arcadis - Mayflower AR	Date: September 11, 2014
Job: #: J13034	Project Quality Manager: [signature]
SDG #: 14050901	Date: 09/17/14

Initial Calibration: No failures	ICV (from the second source): No failures
Surrogate Recoveries: No failures	
Method 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): Solution: No failures SRM: NA	
Continuing Calibration (CCC): No failures	
SRM-2279 Reference Oil No failures	
Mass Discrimination Check (benzo(ghi)perylene/phenanthrene ≥ 0.7) No failures	

Sequence Name: C:\msdchem\1\data\MS50226\MS50226.s
Comment: Arcadis-Net-PAH (09/09/14)
Operator: ECM(YMIAO)
Data Path: C:\MSDCHEM\1\DATA\MS50226\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

CG 9/9/2014

9/9/14 YM

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

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line			Sample Name/Misc Info		
1)	Sample	100	CCS1	PAH-2014	
2)	Sample	100	CCS2	PAH-2014	
3)	Sample	100	CCS3	PAH-2014	
4)	Sample	1	MS50226A	PAH-2014	Solvent
5)	Sample	2	MS50226B	PAH-2014	PAH-WKC1-020-034
6)	Sample	3	MS50226C	PAH-2014	PAH-WKC2-100-034
7)	Sample	4	MS50226D	PAH-2014	PAH-WKC3-250-034
8)	Sample	5	MS50226E	PAH-2014	PAH-WKC4-500-034
9)	Sample	6	MS50226F	PAH-2014	PAH-WKC5-1000-034
10)	Sample	7	MS50226G	PAH-2014	PAH-WKC6-5000-034
11)	Sample	8	MS50226H	PAH-2014	PAH-WKISSU-250-007
12)	Sample	9	MS50226I	PAH-2014	PAH-WKICV-250-008
13)	Sample	10	MS50226J	PAH-2014	PAH-WKCCV-250-042
14)	Sample	11	MS50226K	PAH-2014	PAH-WKSRM2779-4.0-005
15)	Sample	12	STD4	PAH-2014	PAHSU007/IS007/SK029
16)	Sample	13	STD5	PAH-2014	PAHSU007/IS007/SK030
17)	Sample	14	ENV3330A	PAH-2014	
18)	Sample	15	ENV3330B	PAH-2014	
19)	Sample	16	ENV3330C	PAH-2014	
20)	Sample	17	ENV3330D	PAH-2014	
21)	Sample	18	ENV3330E	PAH-2014	
22)	Sample	19	NOA5697	PAH-2014	
23)	Sample	20	MS50226L	PAH-2014	PAH-WKCCV-250-042
24)	Sample	21	NOA5700	PAH-2014	
25)	Sample	22	NOA5701	PAH-2014	
26)	Sample	23	NOA5702	PAH-2014	
27)	Sample	24	NOA5705	PAH-2014	
28)	Sample	25	NOA5706	PAH-2014	
29)	Sample	26	NOA5707	PAH-2014	
30)	Sample	27	NOA5708	PAH-2014	
31)	Sample	28	MS50226M	PAH-2014	PAH-WKCCV-250-042
32)	Sample	29	MS50226N	PAH-2014	PAH-WKSRM2779-4.0-005
33)	Sample	30	ENV3329A	PAH-2014	
34)	Sample	31	ENV3329B	PAH-2014	
35)	Sample	32	ENV3329C	PAH-2014	
36)	Sample	33	ENV3329D	PAH-2014	
37)	Sample	34	ENV3329E	PAH-2014	
38)	Sample	35	NOA5521	PAH-2014	
39)	Sample	36	NOA5522	PAH-2014	
40)	Sample	37	NOA5523	PAH-2014	
41)	Sample	38	MS50226O	PAH-2014	PAH-WKCCV-250-042
42)	Sample	39	NOA5524	PAH-2014	
43)	Sample	40	NOA5525	PAH-2014	

In separate folder

Sequence Name: C:\msdchem\1\data\MS50226\MS50226.s

	Line	Type	Vial	DataFile	Method	Sample Name
44)		Sample	41	NOA5526	PAH-2014	
45)		Sample	42	NOA5527	PAH-2014	
46)		Sample	43	NOA5528	PAH-2014	
47)		Sample	44	NOA5529	PAH-2014	
48)		Sample	45	NOA5530	PAH-2014	
49)		Sample	46	NOA5531	PAH-2014	
50)		Sample	47	MS50226P	PAH-2014	PAH-WKCCV-250-042
51)		Sample	48	NOA5532	PAH-2014	
52)		Sample	49	NOA5533	PAH-2014	
53)		Sample	50	NOA5534	PAH-2014	
54)		Sample	51	NOA5535	PAH-2014	
55)		Sample	52	NOA5536	PAH-2014	
56)		Sample	53	NOA5537	PAH-2014	
57)		Sample	54	NOA5538	PAH-2014	
58)		Sample	55	NOA5539	PAH-2014	
59)		Sample	56	MS50226Q	PAH-2014	PAH-WKCCV-250-042
60)		Sample	57	MS50226R	PAH-2014	PAH-WKSRM2779-4.0-005
61)		Sample	58	ENV3335A	PAH-2014	
62)		Sample	59	ENV3335B	PAH-2014	
63)		Sample	60	ENV3335C	PAH-2014	
64)		Sample	61	ARC2050	PAH-2014	
65)		Sample	62	MS50226S	PAH-2014	PAH-WKCCV-250-042

In separate folder

Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226Q.D
Acq On : 9 Sep 2014 8:53 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Sep 09 16:11:23 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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	108	0.00
2	S	Naphthalene-d8	1.647	1.564	5.0	103	0.00
3	T	cis/trans Decalin	0.385	0.363	5.7	103	0.00
4	un	C1-Decalins	0.385	0.000	100.0#	0#	-12.16#
5	un	C2-Decalins	0.385	0.000	100.0#	0#	-14.28#
6	un	C3-Decalins	0.385	0.000	100.0#	0#	-16.90#
7	un	C4-Decalins	0.385	0.000	100.0#	0#	-18.64#
8	T	Naphthalene	1.903	1.801	5.4	103	0.00
9	T	2-Methylnaphthalene	1.326	1.268	4.4	105	0.00
10	T	1-Methylnaphthalene	1.197	1.144	4.4	105	-0.01
11	T	2,6-Dimethylnaphthalene	1.189	1.152	3.1	107	-0.01
12	T	1,6,7-Trimethylnaphthalene	1.109	1.072	3.3	107	0.00
13	un	C2-Naphthalenes	1.903	0.000	100.0#	0#	-18.40#
14	un	C3-Naphthalenes	1.903	0.000	100.0#	0#	-19.82#
15	un	C4-Naphthalenes	1.903	0.000	100.0#	0#	-22.19#
16	T	Benzothiophene	1.531	1.455	5.0	104	0.00
17	un	C1-Benzothiophenes	1.531	0.000	100.0#	0#	-15.79#
18	un	C2-Benzothiophenes	1.531	0.000	100.0#	0#	-18.19#
19	un	C3-Benzothiophenes	1.531	0.000	100.0#	0#	-20.10#
20	un	C4-Benzothiophenes	1.531	0.000	100.0#	0#	-22.03#
21	S	Acenaphthene-d10	1.001	0.972	2.9	107	-0.01
22	T	Biphenyl	1.699	1.652	2.8	106	0.00
23	T	Acenaphthylene	1.828	1.730	5.4	106	-0.01
24	T	Acenaphthene	1.148	1.112	3.1	106	-0.01
25	T	Dibenzofuran	1.830	1.786	2.4	107	0.00
26	T	Fluorene	1.415	1.371	3.1	107	0.00
27	T	1-Methylfluorene	0.806	0.771	4.3	108	-0.01
28	un	C1-Fluorenes	1.415	0.000	100.0#	0#	-23.32#
29	un	C2-Fluorenes	1.415	0.000	100.0#	0#	-25.56#
30	un	C3-Fluorenes	1.415	0.000	100.0#	0#	-26.86#
31	I	Pyrene-d10	1.000	1.000	0.0	110	0.00
32	S	Phenanthrene-d10	0.963	0.920	4.5	108	-0.01
33	T	Carbazole	1.038	0.961	7.4	107	-0.01
34	T	Dibenzothiophene	1.154	1.107	4.1	108	-0.01
35	T	4-Methyldibenzothiophene	0.756	0.721	4.6	108	-0.01
36	un	2/3-Methyldibenzothiophene	0.756	0.000	100.0#	0#	-26.01#
37	un	1-Methyldibenzothiophene	0.756	0.000	100.0#	0#	-26.34#
38	un	C2-Dibenzothiophenes	1.154	0.000	100.0#	0#	-27.11#
39	un	C3-Dibenzothiophenes	1.154	0.000	100.0#	0#	-29.30#
40	un	C4-Dibenzothiophenes	1.154	0.000	100.0#	0#	-30.27#
41	T	Phenanthrene	1.193	1.152	3.4	107	-0.01
42	T	Anthracene	1.098	1.031	6.1	107	-0.01
43	un	3-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.38#
44	un	2-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.38#
45	un	2-Methylanthracene	0.897	0.000	100.0#	0#	-26.76#
46	un	4/9-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.76#
47	T	1-Methylphenanthrene	0.897	0.845	5.8	108	-0.01
48	T	3,6-Dimethylphenanthrene	0.760	0.709	6.7	108	-0.02
49	T	Retene	0.406	0.377	7.1	108	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226Q.D
Acq On : 9 Sep 2014 8:53 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Sep 09 16:11:23 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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)
50	un	C2-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-28.38#
51	un	C3-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-29.74#
52	un	C4-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-31.35#
53	T	Naphthobenzothiophene	1.129	1.047	7.3	108	-0.02
54	un	C1-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-34.38#
55	un	C2-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-35.92#
56	un	C3-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-37.00#
57	un	C4-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-37.93#
58	T	Fluoranthene	1.271	1.198	5.7	108	-0.02
59	T	Pyrene	1.409	1.352	4.0	109	-0.02
60	T	2-Methylfluoranthene	0.826	0.768	7.0	108	0.00
61	T	Benzo(b)fluorene	0.806	0.720	10.7	105	-0.02
62	un	C1-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-31.62#
63	un	C2-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-31.88#
64	un	C3-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-33.16#
65	un	C4-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-35.14#
66	S	Chrysene-d12	1.114	1.050	5.7	108	-0.02
67	T	Benz(a)anthracene	1.195	1.077	9.9	106	-0.02
68	T	Chrysene/Triphenylene	1.257	1.190	5.3	109	-0.03
69	un	C1-Chrysenes	1.257	0.000	100.0#	0#	-35.09#
70	un	C2-Chrysenes	1.257	0.000	100.0#	0#	-36.39#
71	un	C3-Chrysenes	1.257	0.000	100.0#	0#	-37.75#
72	un	C4-Chrysenes	1.257	0.000	100.0#	0#	-38.39#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	104	-0.01
74	un	C29-Hopane	0.571	0.000	100.0#	0#	-40.57#
75	un	18a-Oleanane	0.571	0.000	100.0#	0#	-41.37#
76	T	C30-Hopane	0.571	0.568	0.5	105	-0.03
77	T	Benzo(b)fluoranthene	1.324	1.393	-5.2	113	-0.03
78	T	Benzo(k,j)fluoranthene	1.379	1.461	-5.9	115	-0.03
79	un	Benzo(a)fluoranthene	1.379	0.000	100.0#	0#	-37.11#
80	T	Benzo(e)pyrene	1.584	1.581	0.2	107	-0.03
81	T	Benzo(a)pyrene	1.362	1.298	4.7	103	-0.03
82	T	Indeno(1,2,3-c,d)pyrene	1.603	1.477	7.9	101	-0.04
83	T	Dibenzo(a,h)anthracene	1.277	1.161	9.1	100	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-47.52#
85	un	C2-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-49.08#
86	un	C3-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-48.56#
87	T	Benzo(g,h,i)perylene	1.438	1.391	3.3	105	-0.06
88	S	Perylene-d12	1.212	1.167	3.7	105	-0.03
89	T	Perylene	1.564	1.510	3.5	104	-0.03
90	S	5(b)H-Cholane	0.310	0.304	1.9	106	-0.02
91	un	C20-TAS	0.310	0.000	100.0#	0#	-33.44#
92	un	C21-TAS	0.310	0.000	100.0#	0#	-34.05#
93	un	C26(20S)-TAS	0.310	0.000	100.0#	0#	-38.47#
94	un	C26(20R)/C27(20S)-TAS	0.310	0.000	100.0#	0#	-39.17#
95	un	C28(20S)-TAS	0.310	0.000	100.0#	0#	-40.40#
96	un	C27(20R)-TAS	0.310	0.000	100.0#	0#	-40.40#
97	un	C28(20R)-TAS	0.310	0.000	100.0#	0#	-41.24#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226Q.D
Acq On : 9 Sep 2014 8:53 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Sep 09 16:11:23 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226Q.D
Acq On : 9 Sep 2014 8:53 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Sep 09 16:11:23 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	257685	251.05		0.00
31) Pyrene-d10	29.446	212	449861	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	371983	250.32		-0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	401562	237.49		0.00
21) Acenaphthene-d10	19.458	164	249464	242.78		-0.01
32) Phenanthrene-d10	24.558	188	413105	238.98		-0.01
66) Chrysene-d12	33.630	240	471068	235.52		-0.02
88) Perylene-d12	38.457	264	433440	240.75		-0.03
90) 5(b)H-Cholane	34.035	217	112796	245.18		-0.02
Target Compounds						Qvalue
3) cis/trans Decalin	10.994	138	92190m	233.30		
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	13.691	128	455782	233.38		97
9) 2-Methylnaphthalene	15.937	142	323183	237.40		92
10) 1-Methylnaphthalene	16.260	142	292106	237.74		96
11) 2,6-Dimethylnaphthalene	18.018	156	295413	242.09		98
12) 1,6,7-Trimethylnaphtha...	20.863	170	275567	242.04		83
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.		
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.859	134	372150	236.85		100
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	17.496	154	422637	242.39		92
23) Acenaphthylene	18.971	152	443525	236.34		97
24) Acenaphthene	19.572	154	286931	243.60		91
25) Dibenzofuran	20.159	168	457364	243.54		100
26) Fluorene	21.335	166	346773	238.78		92
27) 1-Methylfluorene	23.321	180	199329	241.03		82
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	25.385	167	429923	230.71		100
34) Dibenzothiophene	24.206	184	491245	237.21		99
35) 4-Methyldibenzothiophene	25.703	198	325674	240.09		100
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	24.637	178	515274	240.59		98
42) Anthracene	24.807	178	463073	234.98		95
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226Q.D
Acq On : 9 Sep 2014 8:53 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Sep 09 16:11:23 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

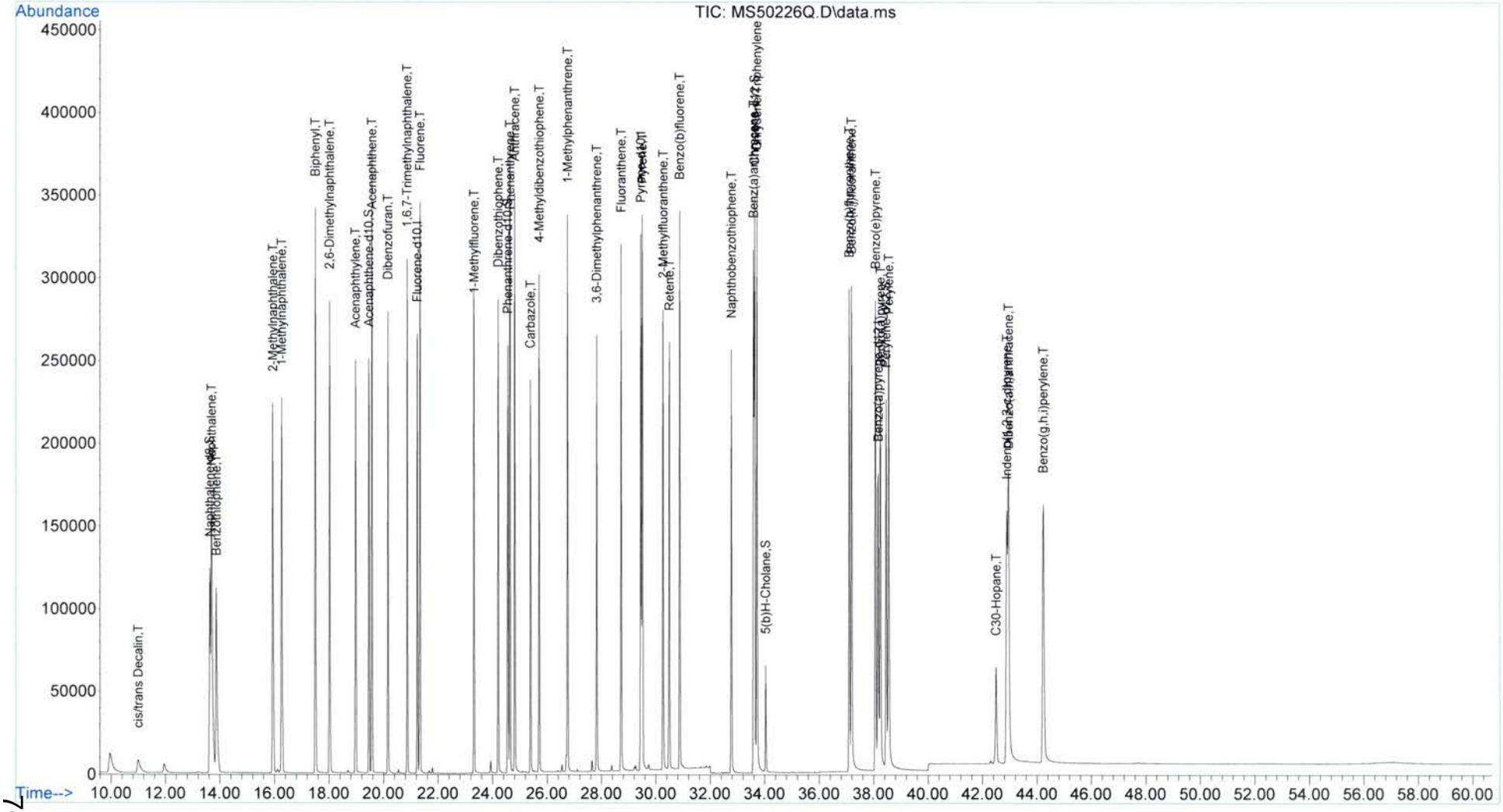
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.747	192	376623	233.98			95
48)	3,6-Dimethylphenanthrene	27.819	206	318797	233.73			98
49)	Retene	30.498	234	169502	232.72		#	19
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53)	Naphthobenzothiophene	32.774	234	472226	233.04			100
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	28.723	202	541359	237.26		#	100
59)	Pyrene	29.495	202	607263	240.09		#	100
60)	2-Methylfluoranthene	30.268	216	344844	232.65		#	100
61)	Benzo(b)fluorene	30.876	216	324625	224.49			94
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.584	228	478429	223.12			98
68)	Chrysene/Triphenylene	33.708	228	529240	234.50			98
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	42.492	191	210907	248.56			100
77)	Benzo(b)fluoranthene	37.097	252	515259m	261.81			
78)	Benzo(k,j)fluoranthene	37.180	252	543971m	265.38			
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.069	252	589227	250.39			100
81)	Benzo(a)pyrene	38.249	252	481795	238.09			100
82)	Indeno(1,2,3-c,d)pyrene	42.891	276	548614	230.28			100
83)	Dibenzo(a,h)anthracene	42.954	278	427906	225.56			90
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	44.225	276	509681	238.55			96
89)	Perylene	38.555	252	560796	241.23		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226Q.D
Acq On : 9 Sep 2014 8:53 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Sep 09 16:11:23 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226S.D
Acq On : 9 Sep 2014 3:37 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 62 Sample Multiplier: 1

Quant Time: Sep 09 16:54:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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	105	0.00
2	S	Naphthalene-d8	1.647	1.544	6.3	100	0.00
3	T	cis/trans Decalin	0.385	0.351	8.8	97	0.00
4	un	C1-Decalins	0.385	0.000	100.0#	0#	-12.16#
5	un	C2-Decalins	0.385	0.000	100.0#	0#	-14.28#
6	un	C3-Decalins	0.385	0.000	100.0#	0#	-16.90#
7	un	C4-Decalins	0.385	0.000	100.0#	0#	-18.64#
8	T	Naphthalene	1.903	1.778	6.6	99	0.00
9	T	2-Methylnaphthalene	1.326	1.254	5.4	101	0.00
10	T	1-Methylnaphthalene	1.197	1.130	5.6	101	-0.01
11	T	2,6-Dimethylnaphthalene	1.189	1.143	3.9	103	-0.01
12	T	1,6,7-Trimethylnaphthalene	1.109	1.077	2.9	105	0.00
13	un	C2-Naphthalenes	1.903	0.000	100.0#	0#	-18.40#
14	un	C3-Naphthalenes	1.903	0.000	100.0#	0#	-19.82#
15	un	C4-Naphthalenes	1.903	0.000	100.0#	0#	-22.19#
16	T	Benzothiophene	1.531	1.433	6.4	99	0.00
17	un	C1-Benzothiophenes	1.531	0.000	100.0#	0#	-15.79#
18	un	C2-Benzothiophenes	1.531	0.000	100.0#	0#	-18.19#
19	un	C3-Benzothiophenes	1.531	0.000	100.0#	0#	-20.10#
20	un	C4-Benzothiophenes	1.531	0.000	100.0#	0#	-22.03#
21	S	Acenaphthene-d10	1.001	0.965	3.6	104	-0.01
22	T	Biphenyl	1.699	1.616	4.9	101	0.00
23	T	Acenaphthylene	1.828	1.749	4.3	105	-0.01
24	T	Acenaphthene	1.148	1.102	4.0	103	-0.01
25	T	Dibenzofuran	1.830	1.766	3.5	103	0.00
26	T	Fluorene	1.415	1.373	3.0	104	0.00
27	T	1-Methylfluorene	0.806	0.000	100.0#	0#	-23.33#
28	un	C1-Fluorenes	1.415	0.000	100.0#	0#	-23.32#
29	un	C2-Fluorenes	1.415	0.000	100.0#	0#	-25.56#
30	un	C3-Fluorenes	1.415	0.000	100.0#	0#	-26.86#
31	I	Pyrene-d10	1.000	1.000	0.0	108	0.00
32	S	Phenanthrene-d10	0.963	0.926	3.8	106	-0.01
33	T	Carbazole	1.038	0.993	4.3	107	-0.01
34	T	Dibenzothiophene	1.154	1.110	3.8	105	-0.01
35	T	4-Methyldibenzothiophene	0.756	0.725	4.1	106	-0.01
36	un	2/3-Methyldibenzothiophene	0.756	0.000	100.0#	0#	-26.01#
37	un	1-Methyldibenzothiophene	0.756	0.000	100.0#	0#	-26.34#
38	un	C2-Dibenzothiophenes	1.154	0.000	100.0#	0#	-27.11#
39	un	C3-Dibenzothiophenes	1.154	0.000	100.0#	0#	-29.30#
40	un	C4-Dibenzothiophenes	1.154	0.000	100.0#	0#	-30.27#
41	T	Phenanthrene	1.193	1.150	3.6	105	-0.01
42	T	Anthracene	1.098	1.056	3.8	107	-0.01
43	un	3-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.38#
44	un	2-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.38#
45	un	2-Methylanthracene	0.897	0.000	100.0#	0#	-26.76#
46	un	4/9-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.76#
47	T	1-Methylphenanthrene	0.897	0.860	4.1	107	-0.01
48	T	3,6-Dimethylphenanthrene	0.760	0.727	4.3	108	-0.02
49	T	Retene	0.406	0.386	4.9	108	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226S.D
Acq On : 9 Sep 2014 3:37 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 62 Sample Multiplier: 1

Quant Time: Sep 09 16:54:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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)
50	un	C2-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-28.38#
51	un	C3-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-29.74#
52	un	C4-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-31.35#
53	T	Naphthobenzothiophene	1.129	1.066	5.6	107	-0.02
54	un	C1-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-34.38#
55	un	C2-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-35.92#
56	un	C3-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-37.00#
57	un	C4-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-37.93#
58	T	Fluoranthene	1.271	1.215	4.4	107	-0.02
59	T	Pyrene	1.409	1.352	4.0	106	-0.02
60	T	2-Methylfluoranthene	0.826	0.783	5.2	108	0.00
61	T	Benzo(b)fluorene	0.806	0.747	7.3	106	-0.02
62	un	C1-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-31.62#
63	un	C2-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-31.88#
64	un	C3-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-33.16#
65	un	C4-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-35.14#
66	S	Chrysene-d12	1.114	1.058	5.0	106	-0.02
67	T	Benz(a)anthracene	1.195	1.125	5.9	108	-0.02
68	T	Chrysene/Triphenylene	1.257	1.204	4.2	107	-0.03
69	un	C1-Chrysenes	1.257	0.000	100.0#	0#	-35.09#
70	un	C2-Chrysenes	1.257	0.000	100.0#	0#	-36.39#
71	un	C3-Chrysenes	1.257	0.000	100.0#	0#	-37.75#
72	un	C4-Chrysenes	1.257	0.000	100.0#	0#	-38.39#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	105	-0.01
74	un	C29-Hopane	0.571	0.000	100.0#	0#	-40.57#
75	un	18a-Oleanane	0.571	0.000	100.0#	0#	-41.37#
76	T	C30-Hopane	0.571	0.568	0.5	107	-0.03
77	T	Benzo(b)fluoranthene	1.324	1.282	3.2	106	-0.03
78	T	Benzo(k,j)fluoranthene	1.379	1.335	3.2	106	-0.03
79	un	Benzo(a)fluoranthene	1.379	0.000	100.0#	0#	-37.11#
80	T	Benzo(e)pyrene	1.584	1.561	1.5	107	-0.04
81	T	Benzo(a)pyrene	1.362	1.297	4.8	105	-0.04
82	T	Indeno(1,2,3-c,d)pyrene	1.603	1.426	11.0	99	-0.05
83	T	Dibenzo(a,h)anthracene	1.277	1.113	12.8	97	-0.05
84	un	C1-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-47.52#
85	un	C2-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-49.08#
86	un	C3-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-48.56#
87	T	Benzo(g,h,i)perylene	1.438	1.321	8.1	101	-0.06
88	S	Perylene-d12	1.212	1.163	4.0	105	-0.03
89	T	Perylene	1.564	1.500	4.1	105	-0.04
90	S	5(b)H-Cholane	0.310	0.310	0.0	110	-0.02
91	un	C20-TAS	0.310	0.000	100.0#	0#	-33.44#
92	un	C21-TAS	0.310	0.000	100.0#	0#	-34.05#
93	un	C26(20S)-TAS	0.310	0.000	100.0#	0#	-38.47#
94	un	C26(20R)/C27(20S)-TAS	0.310	0.000	100.0#	0#	-39.17#
95	un	C28(20S)-TAS	0.310	0.000	100.0#	0#	-40.40#
96	un	C27(20R)-TAS	0.310	0.000	100.0#	0#	-40.40#
97	un	C28(20R)-TAS	0.310	0.000	100.0#	0#	-41.24#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226S.D
Acq On : 9 Sep 2014 3:37 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 62 Sample Multiplier: 1

Quant Time: Sep 09 16:54:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226S.D
Acq On : 9 Sep 2014 3:37 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 62 Sample Multiplier: 1

Quant Time: Sep 09 16:54:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	251206	251.05		0.00
31) Pyrene-d10	29.446	212	438548	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	376312	250.32		-0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	386421	234.43		0.00
21) Acenaphthene-d10	19.458	164	241580	241.18		-0.01
32) Phenanthrene-d10	24.557	188	405336	240.53		-0.01
66) Chrysene-d12	33.630	240	462780	237.34		-0.02
88) Perylene-d12	38.457	264	437037	239.96		-0.03
90) 5(b)H-Cholane	34.035	217	116506	250.33		-0.02
Target Compounds						Qvalue
3) cis/trans Decalin	10.993	138	87003m	225.85		
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	13.691	128	438469	230.30		97
9) 2-Methylnaphthalene	15.937	142	311569	234.77		92
10) 1-Methylnaphthalene	16.260	142	281284	234.84		96
11) 2,6-Dimethylnaphthalene	18.018	156	285717	240.18		98
12) 1,6,7-Trimethylnaphtha...	20.863	170	269842	243.12		82
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.		
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.859	134	357344	233.29		100
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	17.496	154	403076	237.14		92
23) Acenaphthylene	18.971	152	437179	238.97		97
24) Acenaphthene	19.572	154	277238	241.44		91
25) Dibenzofuran	20.159	168	440941	240.85		100
26) Fluorene	21.335	166	338588	239.15		92
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	25.385	167	433163	238.45		100
34) Dibenzothiophene	24.206	184	480329	237.92		99
35) 4-Methyldibenzothiophene	25.703	198	319022	241.25		100
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	24.637	178	501356	240.13		98
42) Anthracene	24.807	178	462593	240.79		95
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226S.D
Acq On : 9 Sep 2014 3:37 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 62 Sample Multiplier: 1

Quant Time: Sep 09 16:54:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

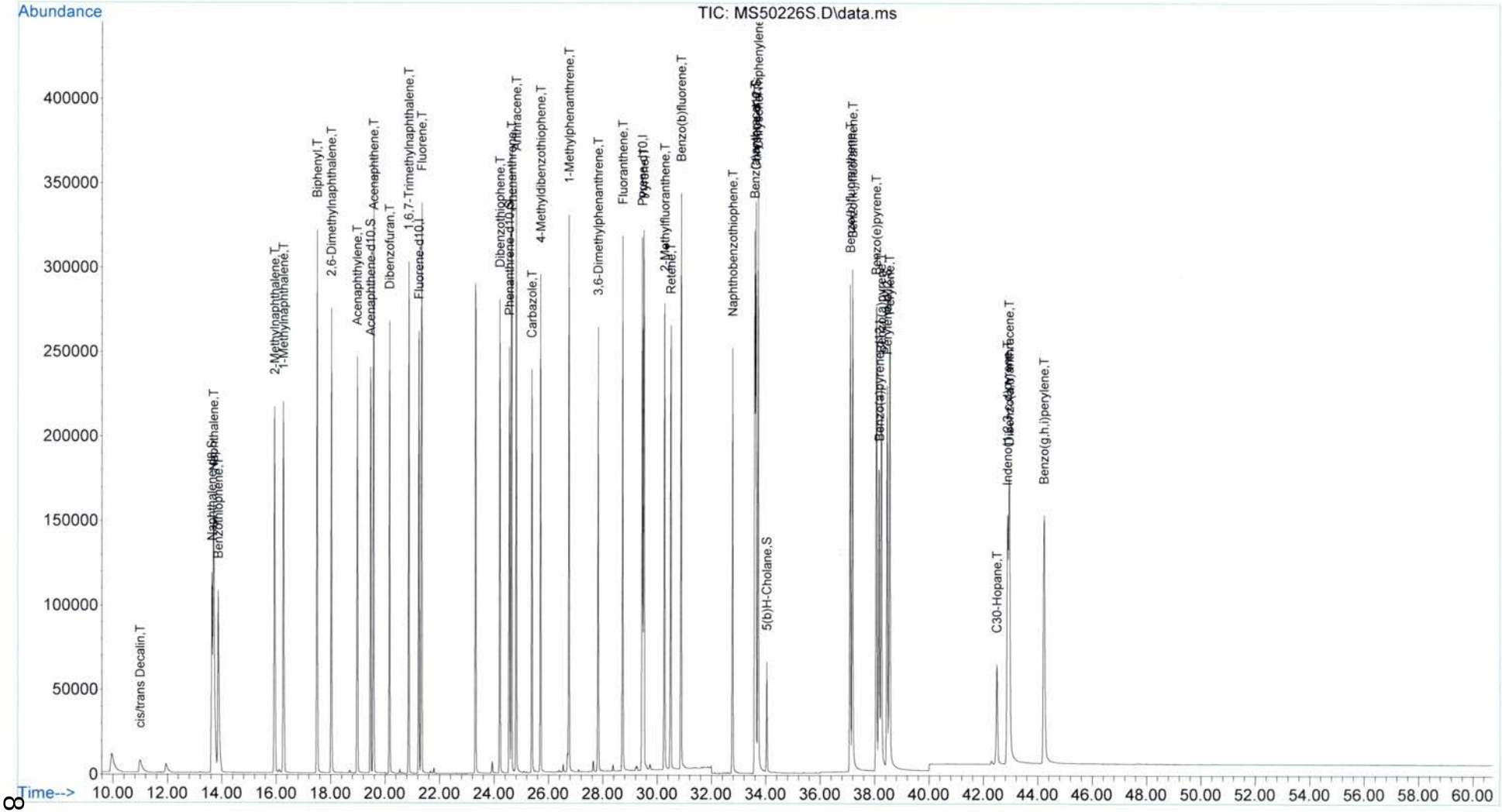
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.746	192	373708	238.16			95
48)	3,6-Dimethylphenanthrene	27.819	206	318540	239.57			98
49)	Retene	30.498	234	168895	237.87		#	20
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53)	Naphthobenzothiophene	32.773	234	468823	237.33			100
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	28.723	202	535132	240.58		#	100
59)	Pyrene	29.495	202	591870	240.04		#	100
60)	2-Methylfluoranthene	30.268	216	342825	237.26		#	100
61)	Benzo(b)fluorene	30.876	216	328082	232.73			94
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.584	228	487259	233.10			98
68)	Chrysene/Triphenylene	33.708	228	521992	237.26			98
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	42.492	191	213291	248.48			100
77)	Benzo(b)fluoranthene	37.097	252	479830	241.01			99
78)	Benzo(k,j)fluoranthene	37.180	252	502713	242.43			100
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.055	252	588276	247.11			99
81)	Benzo(a)pyrene	38.235	252	486779	237.79			99
82)	Indeno(1,2,3-c,d)pyrene	42.880	276	535762	222.30			100
83)	Dibenzo(a,h)anthracene	42.943	278	414916	216.19			90
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	44.225	276	489561	226.49			96
89)	Perylene	38.541	252	563591	239.64		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226S.D
Acq On : 9 Sep 2014 3:37 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 62 Sample Multiplier: 1

Quant Time: Sep 09 16:54:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



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

Data File Name	MS50226H.D
Data File Path	C:\GCMS5\MS50226\
Operator	ECM(YMIAO)
Date Acquired	9/7/2014 3:04
Acq. Method File	PAH-2014.M
Sample Name	PAH-WKISSU-250-007
Misc Info	0
Instrument Name	GCMS5
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

MS50226H.D
PAH-WKISSU-250-007
9/7/2014 3:04
PAH-2014.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	13.63	339378	254.74	101.85
21)	Acenaphthene-d10	19.47	191525	236.57	94.57
32)	Phenanthrene-d10	24.56	317365	244.42	97.69
66)	Chrysene-d12	33.63	313128	208.42	83.35
88)	Perylene-d12	38.47	296188	248.38	99.34
90)	5(b)H-Cholane	34.04	81259	266.66	106.66
	Internal Standards				
1)	Fluorene-d10	21.24	203036	251.05	
31)	Pyrene-d10	29.45	337913	250.63	
73)	Benzo(a)pyrene-d12	38.17	246393	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : MS50226H.D
Acq On : 7 Sep 2014 3:04 am
Operator : ECM(YMIAO)
Sample : PAH-WKISSU-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 08 07:07:20 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	203036	251.05		0.00
31) Pyrene-d10	29.446	212	337913	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	246393	250.32		-0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	339378	254.74		0.00
21) Acenaphthene-d10	19.470	164	191525	236.57		0.00
32) Phenanthrene-d10	24.557	188	317365	244.42		-0.01
66) Chrysene-d12	33.630	240	313128	208.42		-0.02
88) Perylene-d12	38.471	264	296188	248.38		-0.01
90) 5(b)H-Cholane	34.035	217	81259	266.66		-0.02
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	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : MS50226H.D
Acq On : 7 Sep 2014 3:04 am
Operator : ECM(YMIAO)
Sample : PAH-WKISSU-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 08 07:07:20 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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\MS50226\
Data File : MS50226H.D
Acq On : 7 Sep 2014 3:04 am
Operator : ECM(YMIAO)
Sample : PAH-WKISSU-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 08 07:07:20 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

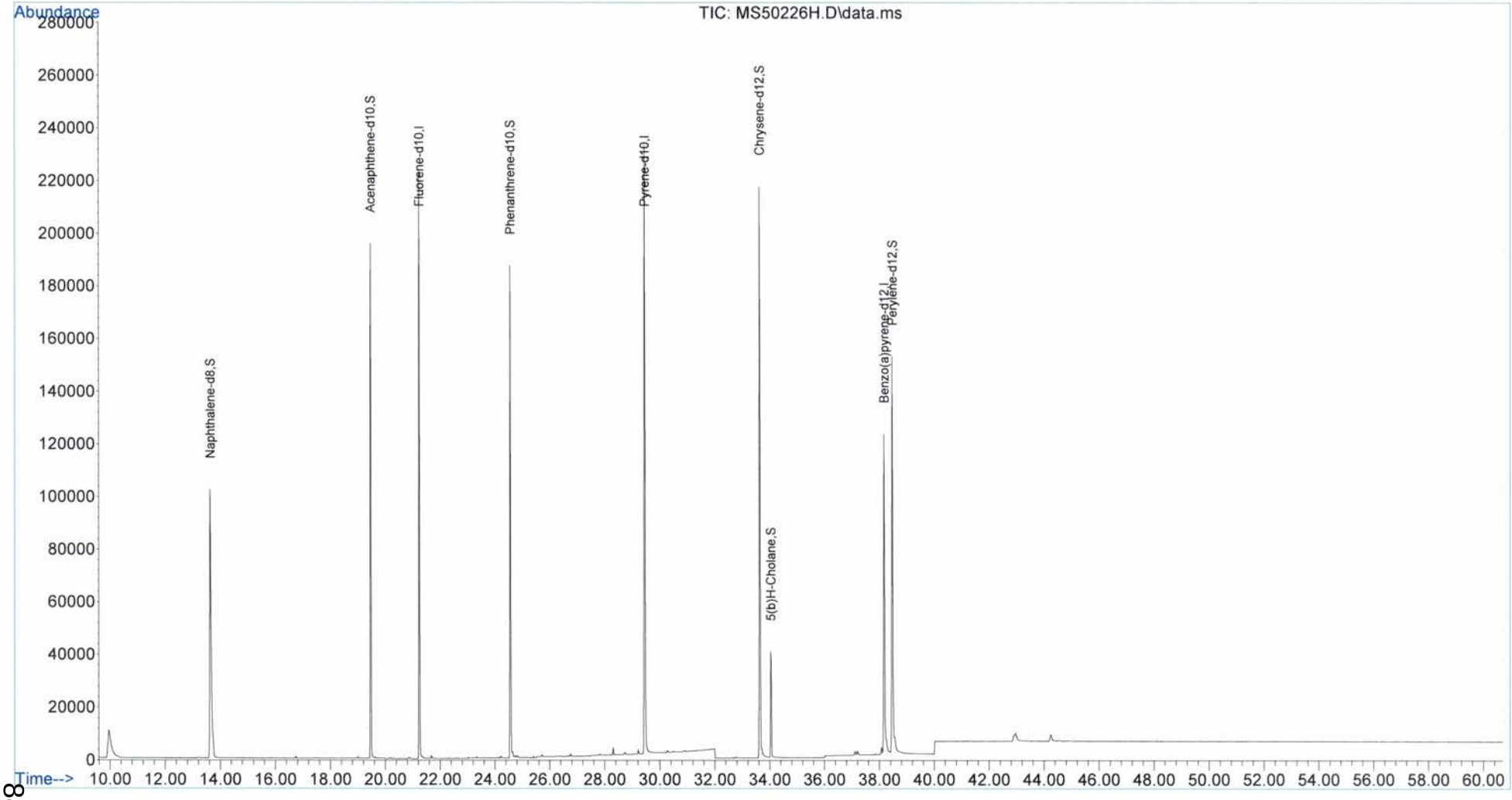
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : MS50226H.D
Acq On : 7 Sep 2014 3:04 am
Operator : ECM(YMIAO)
Sample : PAH-WKISSU-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 08 07:07:20 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



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

Data File Name MS50226R.D
Data File Path C:\msdchem\2\data\MS50226\
Operator ECM(YMIAO)
Date Acquired 9/9/2014 10:01
Acq. Method File PAH-2014.M
Sample Name PAH-WKSRM2779-4.0-005
Misc Info 0
Instrument Name GCMS5
Vial Number 57
Sample Multiplier 0.24044
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

MS50226R.D
AH-WKSRM2779-4.0-005
9/9/2014 10:01
PAH-2014.M
4.159041757

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.00	1145710	621.3811	650.3132
4)	C1-Decalins	12.16	1647330	893.4366	935.0358
5)	C2-Decalins	14.52	1420300	770.3048	806.1710
6)	C3-Decalins	16.49	1537340	833.7834	872.6052
7)	C4-Decalins	17.52	904661	490.6491	513.4942
8)	Naphthalene	13.70	6115100	671.0728	702.3186
9)+10)	C1-Naphthalenes	16.10	13776510	1511.8382	1582.2308
13)	C2-Naphthalenes	18.30	17527500	1923.4815	2013.0407
14)	C3-Naphthalenes	20.30	12166300	1335.1321	1397.2971
15)	C4-Naphthalenes	22.62	6889950	756.1069	791.3119
16)	Benzothiophene	13.90	60168	8.2070	8.5891
17)	C1-Benzothiophenes	15.81	218627	29.8211	31.2095
18)	C2-Benzothiophenes	18.18	163115	22.2491	23.2850
19)	C3-Benzothiophenes	20.12	184764	25.2020	26.3754
20)	C4-Benzothiophenes	21.89	186451	25.4321	26.6162
22)	Biphenyl	17.50	1275540	156.7856	164.0857
23)	Acenaphthylene	18.98	81521	9.3102	9.7437
24)	Acenaphthene	19.57	41010	7.4619	7.8093
25)	Dibenzofuran	20.16	289768	33.0694	34.6091
26)	Fluorene	21.34	790070	116.5937	122.0224
28)	C1-Fluorenes	23.32	1896060	279.8096	292.8378
29)	C2-Fluorenes	25.06	2442480	360.4460	377.2287
30)	C3-Fluorenes	26.69	1693460	249.9109	261.5470
33)	Carbazole	25.40	30909	3.5169	3.6807
42)	Anthracene	24.82	20907	2.2494	2.3541
41)	Phenanthrene	24.64	2411050	238.6913	249.8050
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.53	5869681	581.0919	608.1481
50)	C2-Phenanthrenes/Anthracenes	28.20	6591540	652.5542	682.9377
51)	C3-Phenanthrenes/Anthracenes	29.74	4510260	446.5091	467.2990
52)	C4-Phenanthrenes/Anthracenes	31.58	2064290	204.3620	213.8773
34)	Dibenzothiophene	24.22	455052	46.5901	48.7593
35)+36)+37)	C1-Dibenzothiophenes	26.02	1158893	118.6521	124.1767
38)	C2-Dibenzothiophenes	27.11	1632990	167.1924	174.9770
39)	C3-Dibenzothiophenes	29.28	999324	102.3149	107.0788
40)	C4-Dibenzothiophenes	30.04	527186	53.9754	56.4886
58)	Fluoranthene	28.74	56904	5.2878	5.5340
59)	Pyrene	29.51	139438	11.6889	12.2331
62)	C1-Fluoranthenes/Pyrenes	30.66	734384	68.2419	71.4193
63)	C2-Fluoranthenes/Pyrenes	32.15	1420380	131.9876	138.1331
64)	C3-Fluoranthenes/Pyrenes	33.83	1355570	125.9648	131.8299
65)	C4-Fluoranthenes/Pyrenes	34.95	783634	72.8185	76.2090
53)	Naphthobenzothiophene	32.77	212448	22.2298	23.2648
54)	C1-Naphthobenzothiophenes	33.94	580808	60.7736	63.6033
55)	C2-Naphthobenzothiophenes	35.61	728664	76.2447	79.7948
56)	C3-Naphthobenzothiophenes	36.99	611888	64.0258	67.0069
57)	C4-Naphthobenzothiophenes	37.96	241810	25.3022	26.4803
67)	Benz(a)anthracene	33.60	51146	5.0575	5.2930
68)	Chrysene/Triphenylene	33.68	453706	42.6245	44.6091
69)	C1-Chrysenes	34.94	1180990	110.9506	116.1165
70)	C2-Chrysenes	36.39	1422610	133.6500	139.8729
71)	C3-Chrysenes	37.78	970300	91.1571	95.4014
72)	C4-Chrysenes	39.18	593060	55.7164	58.3107
77)	Benzo(b)fluoranthene	37.11	52234	4.9635	5.1946
78)	Benzo(k,j)fluoranthene	37.19	8657	0.7898	0.8266
79)	Benzo(a)fluoranthene	37.11	52234	4.7655	4.9874
80)	Benzo(e)pyrene	38.07	113855	9.0479	9.4691
81)	Benzo(a)pyrene	38.25	15480	1.4306	1.4972
89)	Perylene	38.55	7172	0.5769	0.6038
82)	Indeno(1,2,3-c,d)pyrene	42.92	6193	0.4861	0.5088
83)	Dibenzo(a,h)anthracene	42.95	6808	0.6711	0.7024
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	44.25	17312	1.5153	1.5858

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.94	8419670	1325.5313	1387.2493
10)	1-Methylnaphthalene	16.27	5356840	934.4172	977.9245
11)	2,6-Dimethylnaphthalene	18.03	2317910	407.1082	426.0635
12)	1,6,7-Trimethylnaphthalene	20.87	1033510	194.5520	203.6106
27)	1-Methylfluorene	23.32	892261	231.2376	242.0043
35)	4-Methyldibenzothiophene	25.71	649287	101.4880	106.2134
36)	2/3-Methyldibenzothiophene	26.01	305712	47.7848	50.0097
37)	1-Methyldibenzothiophene	26.34	203894	31.8701	33.3540
43)	3-Methylphenanthrene	26.29	1330800	175.3010	183.4631
44)	2-Methylphenanthrene	26.38	1500220	197.6188	206.8202
45)	2-Methylanthracene	26.54	127531	16.7992	17.5814
46)	4/9-Methylphenanthrene	26.67	1779030	234.3458	245.2572
47)	1-Methylphenanthrene	26.76	1132100	149.1271	156.0706
48)	3,6-Dimethylphenanthrene	27.82	300787	46.7584	48.9355
49)	Retene	30.50	17131	4.9869	5.2191
60)	2-Methylfluoranthene	30.28	45053	6.4447	6.7448
61)	Benzo(b)fluorene	30.89	106496	15.6146	16.3417
74)	C29-Hopane	40.51	98323	21.6705	22.6795
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.80	222427	49.0233	51.3059
91)	C20-TAS	33.18	80000	32.5198	34.0339
92)	C21-TAS	34.25	88491	35.9713	37.6461
93)	C26(20S)-TAS	38.33	56162	22.8297	23.8926
94)	C26(20R)/C27(20S)-TAS	39.23	182610	74.2303	77.6866
95)	C28(20S)-TAS	40.00	140858	57.2584	59.9244
96)	C27(20R)-TAS	40.44	108522	44.1138	46.1677
97)	C28(20R)-TAS	41.56	91181	37.0648	38.7906
	Surrogate Standards				
2)	Naphthalene-d8	13.63	379340	48.08	79.95
21)	Acenaphthene-d10	19.47	264793	55.23	91.82
32)	Phenanthrene-d10	24.56	468626	57.48	95.55
66)	Chrysene-d12	33.63	495719	52.55	87.41
88)	Perylene-d12	38.47	518760	53.89	89.64
90)	5(b)H-Cholane	34.04	156078	63.45	105.55
	Internal Standards				
1)	Fluorene-d10	21.24	289090	60.36	
31)	Pyrene-d10	29.45	510143	60.26	
73)	Benzo(a)pyrene-d12	38.17	478259	60.19	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : MS50226R.D
Acq On : 9 Sep 2014 10:01 am
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 57 Sample Multiplier: 0.24044

Quant Time: Sep 11 08:53:19 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.239	176	289090	251.05			0.00
31) Pyrene-d10	29.446	212	510143m	250.63			0.00
73) Benzo(a)pyrene-d12	38.166	264	478259	250.32			-0.01
System Monitoring Compounds							
2) Naphthalene-d8	13.628	136	379340	48.08			0.00
21) Acenaphthene-d10	19.470	164	264793m	55.23			0.00
32) Phenanthrene-d10	24.558	188	468626m	57.48			-0.01
66) Chrysene-d12	33.630	240	495719	52.55			-0.02
88) Perylene-d12	38.471	264	518760	53.89			-0.01
90) 5(b)H-Cholane	34.035	217	156078	63.45			-0.02
Target Compounds							Qvalue
3) cis/trans Decalin	11.004	138	1145708m	621.38			
4) C1-Decalins	12.159	152	1647327m	893.44			
5) C2-Decalins	14.520	166	1420295m	770.31			
6) C3-Decalins	16.487	180	1537336m	833.78			
7) C4-Decalins	17.519	194	904661m	490.65			
8) Naphthalene	13.701	128	6115095	671.07			98
9) 2-Methylnaphthalene	15.937	142	8419668	1325.53			94
10) 1-Methylnaphthalene	16.271	142	5356839	934.42			95
11) 2,6-Dimethylnaphthalene	18.029	156	2317910m	407.11			
12) 1,6,7-Trimethylnaphtha...	20.872	170	1033510m	194.55			
13) C2-Naphthalenes	18.302	156	17527547m	1923.48			
14) C3-Naphthalenes	20.303	170	12166273m	1335.13			
15) C4-Naphthalenes	22.618	184	6889954m	756.11			
16) Benzothiophene	13.901	134	60168	8.21			100
17) C1-Benzothiophenes	15.811	148	218627m	29.82			
18) C2-Benzothiophenes	18.177	162	163115m	22.25			
19) C3-Benzothiophenes	20.120	176	184764m	25.20			
20) C4-Benzothiophenes	21.895	190	186451m	25.43			
22) Biphenyl	17.496	154	1275537	156.79			95
23) Acenaphthylene	18.982	152	81521	9.31		#	1
24) Acenaphthene	19.572	154	41010m	7.46			
25) Dibenzofuran	20.159	168	289768	33.07			100
26) Fluorene	21.335	166	790070	116.59			97
27) 1-Methylfluorene	23.321	180	892261	231.24			88
28) C1-Fluorenes	23.321	180	1896060m	279.81			
29) C2-Fluorenes	25.057	194	2442484m	360.45			
30) C3-Fluorenes	26.690	208	1693459m	249.91			
33) Carbazole	25.397	167	30909	3.52			100
34) Dibenzothiophene	24.217	184	455052	46.59		#	84
35) 4-Methyldibenzothiophene	25.714	198	649287	101.49			100
36) 2/3-Methyldibenzothiop...	26.009	198	305712	47.78			100
37) 1-Methyldibenzothiophene	26.338	198	203894	31.87			100
38) C2-Dibenzothiophenes	27.110	212	1632989m	167.19			
39) C3-Dibenzothiophenes	29.282	226	999324m	102.32			
40) C4-Dibenzothiophenes	30.038	240	527186m	53.98			
41) Phenanthrene	24.637	178	2411054	238.69			100
42) Anthracene	24.818	178	20907	2.25			99
43) 3-Methylphenanthrene	26.293	192	1330795m	175.30			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : MS50226R.D
Acq On : 9 Sep 2014 10:01 am
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 57 Sample Multiplier: 0.24044

Quant Time: Sep 11 08:53:19 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44)	2-Methylphenanthrene	26.384	192	1500221m	197.62			
45)	2-Methylanthracene	26.542	192	127531m	16.80			
46)	4/9-Methylphenanthrene	26.667	192	1779032m	234.35			
47)	1-Methylphenanthrene	26.758	192	1132097m	149.13			
48)	3,6-Dimethylphenanthrene	27.819	206	300787m	46.76			
49)	Retene	30.498	234	17131m	4.99			
50)	C2-Phenanthrenes/Anthr...	28.197	206	6591537m	652.55			
51)	C3-Phenanthrenes/Anthr...	29.742	220	4510258m	446.51			
52)	C4-Phenanthrenes/Anthr...	31.583	234	2064291m	204.36			
53)	Naphthobenzothiophene	32.774	234	212448m	22.23			
54)	C1-Naphthobenzothiophenes	33.942	248	580808m	60.77			
55)	C2-Naphthobenzothiophenes	35.609	262	728664m	76.24			
56)	C3-Naphthobenzothiophenes	36.986	276	611888m	64.03			
57)	C4-Naphthobenzothiophenes	37.958	290	241810m	25.30			
58)	Fluoranthene	28.739	202	56904m	5.29			
59)	Pyrene	29.512	202	139438m	11.69			
60)	2-Methylfluoranthene	30.284	216	45053	6.44		#	100
61)	Benzo(b)fluorene	30.893	216	106496	15.61			94
62)	C1-Fluoranthenes/Pyrenes	30.662	216	734384m	68.24			
63)	C2-Fluoranthenes/Pyrenes	32.150	230	1420379m	131.99			
64)	C3-Fluoranthenes/Pyrenes	33.833	244	1355565m	125.96			
65)	C4-Fluoranthenes/Pyrenes	34.955	258	783634m	72.82			
67)	Benz(a)anthracene	33.599	228	51146	5.06			96
68)	Chrysene/Triphenylene	33.677	228	453706	42.62			100
69)	C1-Chrysenes	34.939	242	1180988m	110.95			
70)	C2-Chrysenes	36.389	256	1422607m	133.65			
71)	C3-Chrysenes	37.777	270	970300m	91.16			
72)	C4-Chrysenes	39.179	284	593060m	55.72			
74)	C29-Hopane	40.506	191	98323m	21.67			
75)	18a-Oleanane	0.000		0	N.D.	d		
76)	C30-Hopane	41.798	191	222427m	49.02			
77)	Benzo(b)fluoranthene	37.111	252	52234	4.96		#	37
78)	Benzo(k,j)fluoranthene	37.194	252	8657m	0.79			
79)	Benzo(a)fluoranthene	37.111	252	52234	4.77		#	100
80)	Benzo(e)pyrene	38.069	252	113855	9.05			97
81)	Benzo(a)pyrene	38.249	252	15480m	1.43			
82)	Indeno(1,2,3-c,d)pyrene	42.922	276	6193	0.49		#	84
83)	Dibenzo(a,h)anthracene	42.954	278	6808m	0.67			
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	44.246	276	17312	1.52			95
89)	Perylene	38.555	252	7172m	0.58			
91)	C20-TAS	33.179	231	80000m	32.52			
92)	C21-TAS	34.254	231	88491m	35.97			
93)	C26(20S)-TAS	38.333	231	56162m	22.83			
94)	C26(20R)/C27(20S)-TAS	39.235	231	182610m	74.23			
95)	C28(20S)-TAS	39.999	231	140858m	57.26			
96)	C27(20R)-TAS	40.443	231	108522	44.11			100
97)	C28(20R)-TAS	41.557	231	91181m	37.06			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : MS50226R.D
Acq On : 9 Sep 2014 10:01 am
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 57 Sample Multiplier: 0.24044

Quant Time: Sep 11 08:53:19 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

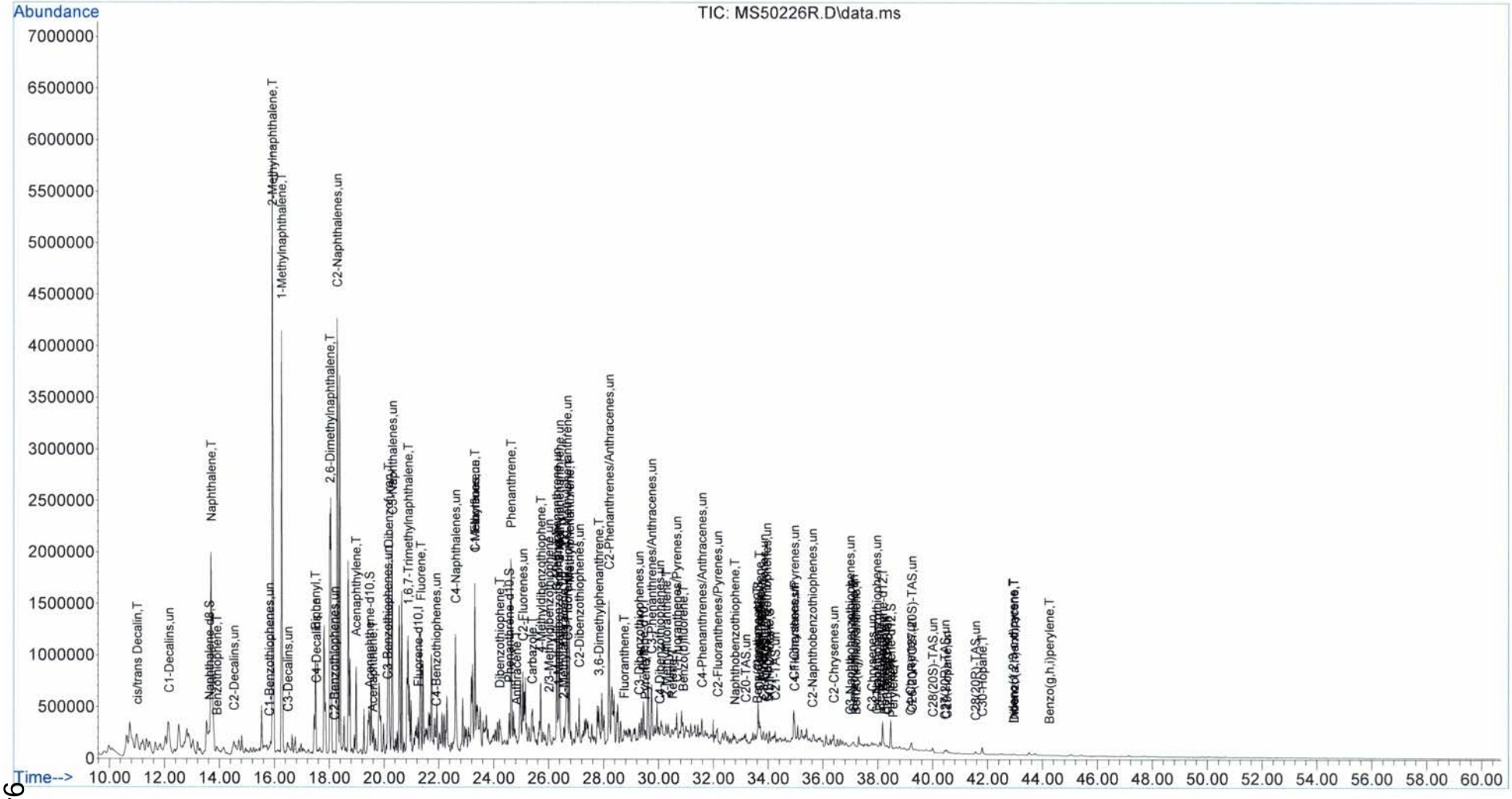
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : MS50226R.D
Acq On : 9 Sep 2014 10:01 am
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 57 Sample Multiplier: 0.24044

Quant Time: Sep 11 08:53:19 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



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

Data File Name	ENV3335A.D
Data File Path	C:\msdchem\2\data\MS50226\
Operator	ECM(YMIAO)
Date Acquired	9/9/2014 11:08
Acq. Method File	PAH-2014.M
Sample Name	Method Blank
Misc Info	0
Instrument Name	GCMS5
Vial Number	58
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

ENV3335A.D
Method Blank
9/9/2014 11:08
PAH-2014.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	13.70	1695	0.8856	1.0865
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	17.51	425	0.2487	0.3051
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	24.64	1790	0.8265	1.0140
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	13.63	313489	189.19	75.64
21)	Acenaphthene-d10	19.47	201470	200.08	79.98
32)	Phenanthrene-d10	24.56	356479	203.94	81.51
66)	Chrysene-d12	33.63	406956	201.22	80.47
88)	Perylene-d12	38.46	333817	180.70	72.27
90)	5(b)H-Cholane	34.04	119046	252.18	100.87
	Internal Standards				
1)	Fluorene-d10	21.24	252528	251.05	
31)	Pyrene-d10	29.45	454884	250.63	
73)	Benzo(a)pyrene-d12	38.17	381692	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335A.D
Acq On : 9 Sep 2014 11:08 am
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Sep 11 08:58:07 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	252528	251.05		0.00
31) Pyrene-d10	29.446	212	454884	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	381692	250.32		-0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	313489	189.19		0.00
21) Acenaphthene-d10	19.470	164	201470	200.08		0.00
32) Phenanthrene-d10	24.557	188	356479	203.94		-0.01
66) Chrysene-d12	33.630	240	406956	201.22		-0.02
88) Perylene-d12	38.457	264	333817	180.70		-0.03
90) 5(b)H-Cholane	34.035	217	119046	252.18		-0.02
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	13.701	128	1695	0.89		98
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	17.507	154	425	0.25		89
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	24.637	178	1790	0.83		93
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\MS50226\
Data File : ENV3335A.D
Acq On : 9 Sep 2014 11:08 am
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Sep 11 08:58:07 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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\MS50226\
Data File : ENV3335A.D
Acq On : 9 Sep 2014 11:08 am
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Sep 11 08:58:07 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

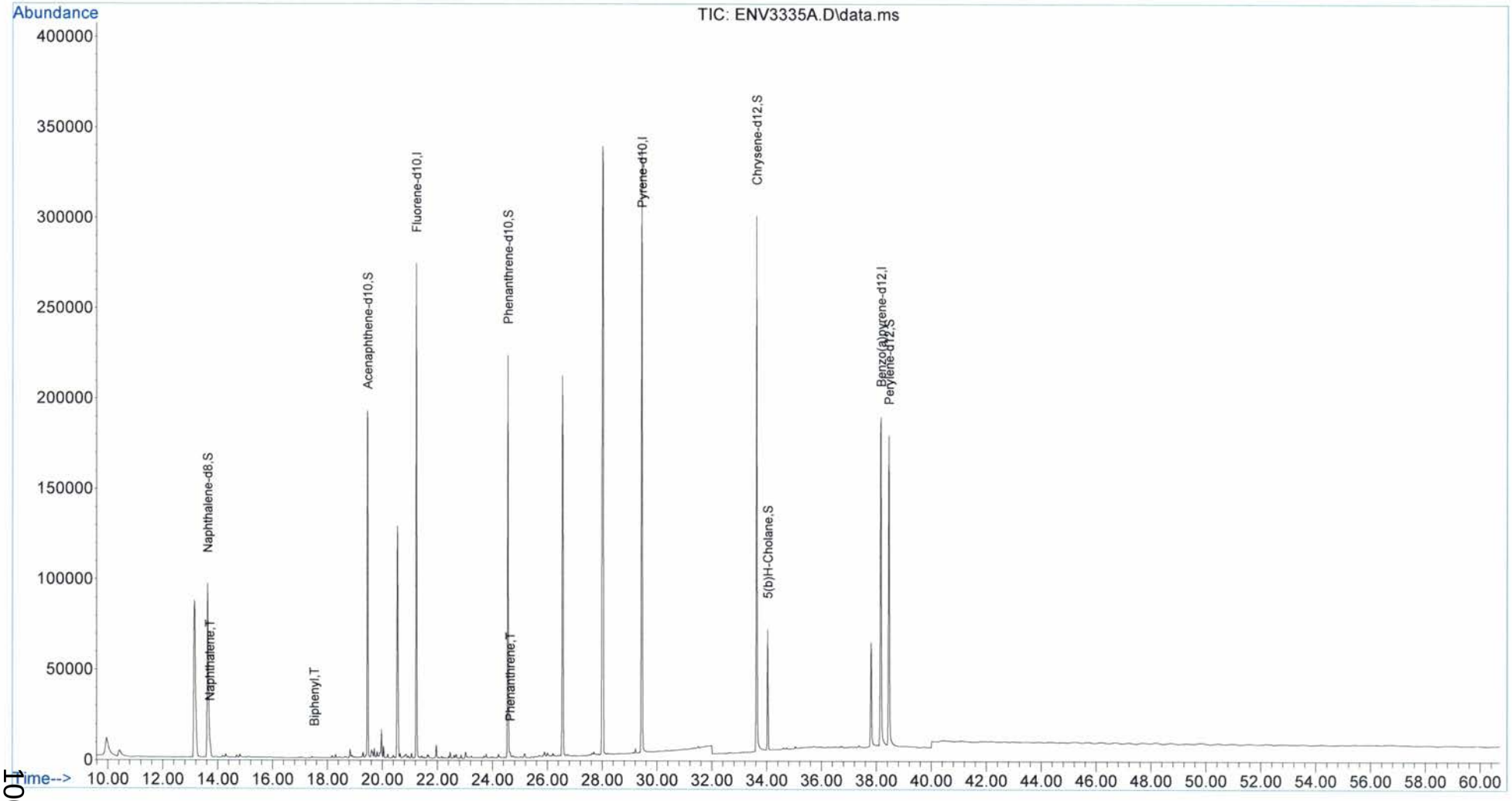
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335A.D
Acq On : 9 Sep 2014 11:08 am
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Sep 11 08:58:07 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



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

Data File Name ENV3335B.D
Data File Path C:\msdchem\2\data\MS50226\
Operator ECM(YMIAO)
Date Acquired 9/9/2014 12:15
Acq. Method File PAH-2014.M
Sample Name Blank Spike
Misc Info 0
Instrument Name GCMS5
Vial Number 59
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

ENV3335B.D
Blank Spike
9/9/2014 12:15
PAH-2014.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.99	33445	78.9878	92.8390
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	13.69	161908	77.3712	90.9389
9)+10)	C1-Naphthalenes	16.10	217379	103.8792	122.0954
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	13.86	130539	77.5359	91.1325
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	17.50	129739	69.4429	81.6203
23)	Acenaphthylene	18.97	158867	79.0076	92.8623
24)	Acenaphthene	19.57	103360	81.8945	96.2554
25)	Dibenzofuran	20.16	167611	83.2959	97.9026
26)	Fluorene	21.34	128197	82.3819	96.8283
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	25.39	148172	73.2679	86.1161
42)	Anthracene	24.81	168951	78.9966	92.8494
41)	Phenanthrene	24.64	193419	83.2147	97.8072
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.35	154744	66.5755	78.2502
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	24.21	195888	87.1590	102.4431
35)+36)+37)	C1-Dibenzothiophenes	8.57	131266	58.4059	68.6479
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	28.72	217664	87.8996	103.3136
59)	Pyrene	29.50	230753	84.0641	98.8055
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	32.77	194032	88.2323	103.7046
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	33.58	202844	87.1679	102.4536
68)	Chrysene/Triphenylene	33.71	207018	84.5208	99.3423
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	37.10	195864	85.6746	100.6984
78)	Benzo(k,j)fluoranthene	37.18	198960	83.5576	98.2102
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.07	240863	88.1100	103.5609
81)	Benzo(a)pyrene	38.25	177446	75.4877	88.7252
89)	Perylene	38.55	188559	69.8227	82.0667
82)	Indeno(1,2,3-c,d)pyrene	42.89	228923	82.7208	97.2266
83)	Dibenzo(a,h)anthracene	42.95	181159	82.2041	96.6193
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	44.24	200417	80.7492	94.9093

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.94	114469	78.4742	92.2354
10)	1-Methylnaphthalene	16.26	102910	78.1689	91.8765
11)	2,6-Dimethylnaphthalene	18.02	105528	80.7096	94.8628
12)	1,6,7-Trimethylnaphthalene	20.87	105355	86.3615	101.5058
27)	1-Methylfluorene	23.32	79245	89.4299	105.1123
35)	4-Methyldibenzothiophene	25.70	131266	89.1666	104.8028
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	26.75	154744	88.5847	104.1188
48)	3,6-Dimethylphenanthrene	27.85	132524	89.5294	105.2292
49)	Retene	30.50	70008	88.5657	104.0965
60)	2-Methylfluoranthene	30.27	144107	89.5854	105.2950
61)	Benzo(b)fluorene	30.88	149721	95.4010	112.1304
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.49	88589	89.8786	105.6396
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	13.63	348414	192.31	76.89
21)	Acenaphthene-d10	19.46	226898	206.09	82.38
32)	Phenanthrene-d10	24.56	399338	212.87	85.08
66)	Chrysene-d12	33.63	453312	208.83	83.52
88)	Perylene-d12	38.46	397052	189.86	75.93
90)	5(b)H-Cholane	34.04	128160	239.81	95.92
	Internal Standards				
1)	Fluorene-d10	21.24	276110	251.05	
31)	Pyrene-d10	29.45	488218	250.63	
73)	Benzo(a)pyrene-d12	38.17	432110	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335B.D
Acq On : 9 Sep 2014 12:15 pm
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 59 Sample Multiplier: 1

Quant Time: Sep 11 09:02:22 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	276110	251.05		0.00
31) Pyrene-d10	29.446	212	488218	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	432110	250.32		-0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	348414	192.31		0.00
21) Acenaphthene-d10	19.458	164	226898	206.09		-0.01
32) Phenanthrene-d10	24.558	188	399338	212.87		-0.01
66) Chrysene-d12	33.630	240	453312	208.83		-0.02
88) Perylene-d12	38.457	264	397052	189.86		-0.03
90) 5(b)H-Cholane	34.035	217	128160	239.81		-0.02
Target Compounds						Qvalue
3) cis/trans Decalin	10.994	138	33445m	78.99		
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	13.691	128	161908	77.37		97
9) 2-Methylnaphthalene	15.937	142	114469	78.47		92
10) 1-Methylnaphthalene	16.260	142	102910	78.17		97
11) 2,6-Dimethylnaphthalene	18.018	156	105528	80.71		99
12) 1,6,7-Trimethylnaphtha...	20.872	170	105355	86.36		95
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	13.859	134	130539	77.54		100
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	17.496	154	129739	69.44		94
23) Acenaphthylene	18.971	152	158867	79.01		97
24) Acenaphthene	19.572	154	103360	81.89		91
25) Dibenzofuran	20.159	168	167611	83.30		100
26) Fluorene	21.335	166	128197	82.38		93
27) 1-Methylfluorene	23.321	180	79245	89.43		85
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	25.385	167	148172	73.27		100
34) Dibenzothiophene	24.206	184	195888m	87.16		
35) 4-Methyldibenzothiophene	25.703	198	131266	89.17		100
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	24.637	178	193419	83.21		98
42) Anthracene	24.807	178	168951	79.00		95
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335B.D
Acq On : 9 Sep 2014 12:15 pm
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 59 Sample Multiplier: 1

Quant Time: Sep 11 09:02:22 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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	26.747	192	154744	88.58			95
48)	3,6-Dimethylphenanthrene	27.852	206	132524	89.53			88
49)	Retene	30.498	234	70008	88.57		#	20
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	32.774	234	194032	88.23			100
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	28.723	202	217664	87.90		#	100
59)	Pyrene	29.495	202	230753	84.06		#	100
60)	2-Methylfluoranthene	30.268	216	144107	89.59		#	100
61)	Benzo(b)fluorene	30.876	216	149721	95.40			94
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.584	228	202844	87.17			98
68)	Chrysene/Triphenylene	33.708	228	207018	84.52			98
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	42.492	191	88589	89.88			100
77)	Benzo(b)fluoranthene	37.097	252	195864	85.67			99
78)	Benzo(k,j)fluoranthene	37.180	252	198960	83.56			100
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.069	252	240863	88.11			100
81)	Benzo(a)pyrene	38.249	252	177446	75.49			100
82)	Indeno(1,2,3-c,d)pyrene	42.891	276	228923	82.72			100
83)	Dibenzo(a,h)anthracene	42.954	278	181159	82.20			92
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	44.236	276	200417	80.75			96
89)	Perylene	38.555	252	188559	69.82		#	100
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\MS50226\
Data File : ENV3335B.D
Acq On : 9 Sep 2014 12:15 pm
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 59 Sample Multiplier: 1

Quant Time: Sep 11 09:02:22 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

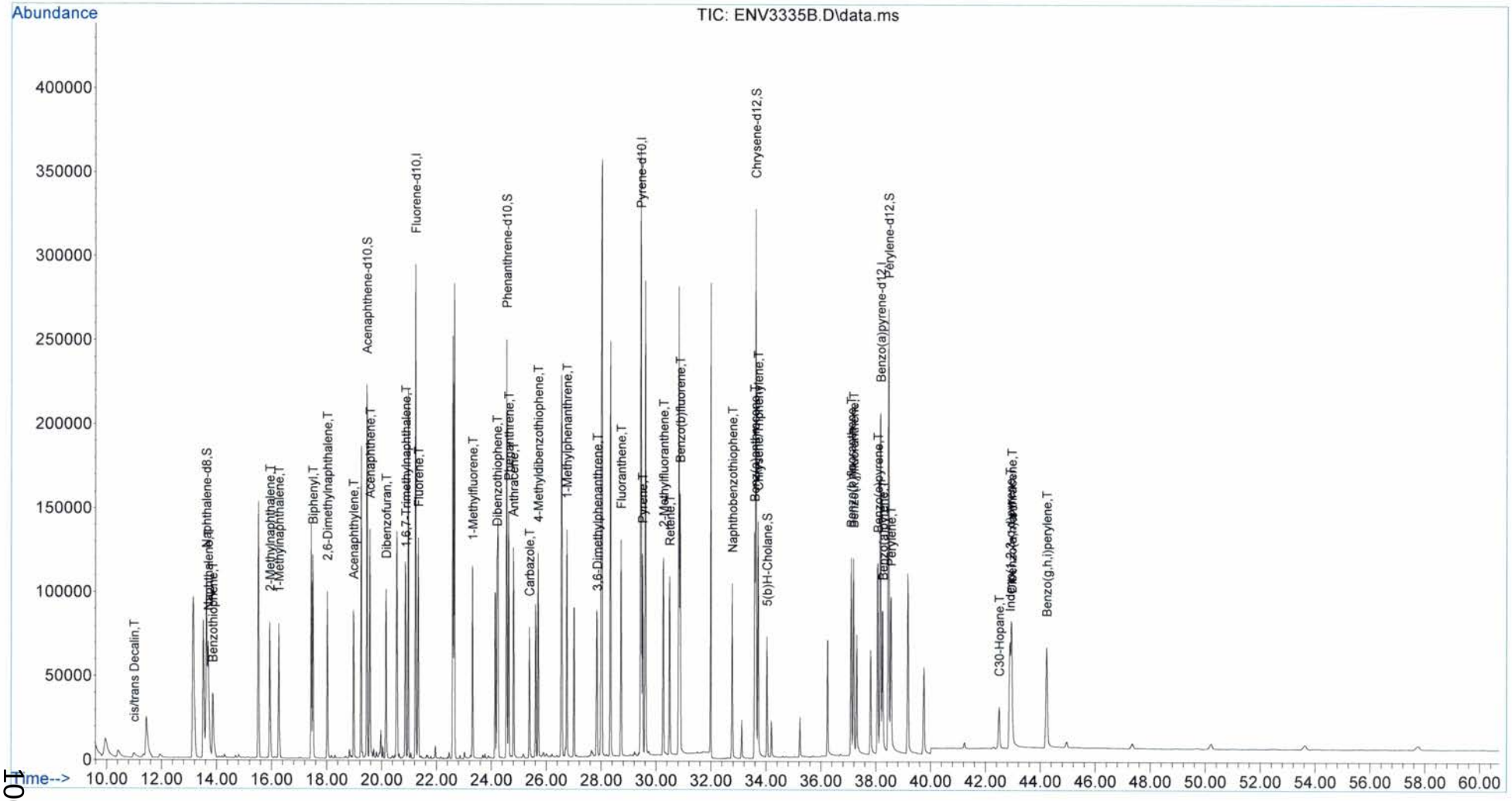
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335B.D
Acq On : 9 Sep 2014 12:15 pm
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 59 Sample Multiplier: 1

Quant Time: Sep 11 09:02:22 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



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

Data File Name	ENV3335C.D
Data File Path	C:\msdchem\2\data\MS50226\
Operator	ECM(YMIAO)
Date Acquired	9/9/2014 13:22
Acq. Method File	PAH-2014.M
Sample Name	Blank Spike Dupl.
Misc Info	0
Instrument Name	GCMS5
Vial Number	60
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

ENV3335C.D
Blank Spike Dupl.
9/9/2014 13:22
PAH-2014.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.99	32242	79.6743	92.7052
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	13.69	156137	78.0700	90.8385
9)+10)	C1-Naphthalenes	16.10	209883	104.9435	122.1073
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	13.86	125714	78.1292	90.9074
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	17.50	126327	70.7491	82.3203
23)	Acenaphthylene	18.97	155254	80.7877	94.0007
24)	Acenaphthene	19.57	100589	83.3912	97.0300
25)	Dibenzofuran	20.16	162573	84.5351	98.3610
26)	Fluorene	21.34	124456	83.6830	97.3695
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	25.39	147790	76.7190	89.2666
42)	Anthracene	24.81	165709	81.3400	94.6433
41)	Phenanthrene	24.64	188157	84.9829	98.8820
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.35	149621	67.5777	78.6302
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	24.21	187522	87.5925	101.9185
35)+36)+37)	C1-Dibenzothiophenes	8.57	126989	59.3172	69.0187
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	28.72	209943	89.0045	103.5614
59)	Pyrene	29.50	222420	85.0643	98.9768
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	32.77	185464	88.5369	103.0173
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	33.58	199356	89.9361	104.6454
68)	Chrysene/Triphenylene	33.71	204907	87.8259	102.1900
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	37.10	186862	87.0536	101.2914
78)	Benzo(k,j)fluoranthene	37.18	189966	84.9697	98.8667
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.07	231463	90.1788	104.9278
81)	Benzo(a)pyrene	38.25	175573	79.5491	92.5595
89)	Perylene	38.55	182647	72.0327	83.8138
82)	Indeno(1,2,3-c,d)pyrene	42.89	215261	82.8436	96.3929
83)	Dibenzo(a,h)anthracene	42.95	170412	82.3572	95.8269
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	44.23	190867	81.9035	95.2990

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.94	110245	79.0797	92.0134
10)	1-Methylnaphthalene	16.26	99638	79.1897	92.1414
11)	2,6-Dimethylnaphthalene	18.02	102428	81.9678	95.3738
12)	1,6,7-Trimethylnaphthalene	20.87	102228	87.6804	102.0207
27)	1-Methylfluorene	23.32	77078	91.0141	105.8997
35)	4-Methyldibenzothiophene	25.70	126989	90.5579	105.3689
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	26.75	149621	89.9182	104.6245
48)	3,6-Dimethylphenanthrene	27.84	127927	90.7285	105.5674
49)	Retene	30.50	66701	88.5851	103.0734
60)	2-Methylfluoranthene	30.27	137378	89.6561	104.3196
61)	Benzo(b)fluorene	30.88	143754	96.1613	111.8887
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.49	86022	92.9510	108.1534
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	13.63	334324	193.08	77.19
21)	Acenaphthene-d10	19.46	218953	208.08	83.18
32)	Phenanthrene-d10	24.56	384252	215.03	85.94
66)	Chrysene-d12	33.63	439363	212.49	84.98
88)	Perylene-d12	38.46	382372	194.73	77.88
90)	5(b)H-Cholane	34.04	127728	254.55	101.82
	Internal Standards				
1)	Fluorene-d10	21.24	263885	251.05	
31)	Pyrene-d10	29.45	465054	250.63	
73)	Benzo(a)pyrene-d12	38.17	405720	250.33	

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335C.D
Acq On : 9 Sep 2014 1:22 pm
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 60 Sample Multiplier: 1

Quant Time: Sep 11 09:10:08 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	263885	251.05		0.00
31) Pyrene-d10	29.446	212	465054	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	405720	250.32		-0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	334324	193.08		0.00
21) Acenaphthene-d10	19.458	164	218953	208.08		-0.01
32) Phenanthrene-d10	24.558	188	384252	215.03		-0.01
66) Chrysene-d12	33.630	240	439363	212.49		-0.02
88) Perylene-d12	38.457	264	382372	194.73		-0.03
90) 5(b)H-Cholane	34.035	217	127728	254.55		-0.02
Target Compounds						Qvalue
3) cis/trans Decalin	10.994	138	32242m	79.67		
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	13.691	128	156137	78.07		97
9) 2-Methylnaphthalene	15.937	142	110245	79.08		92
10) 1-Methylnaphthalene	16.260	142	99638	79.19		97
11) 2,6-Dimethylnaphthalene	18.018	156	102428	81.97		99
12) 1,6,7-Trimethylnaphtha...	20.872	170	102228	87.68		95
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	13.859	134	125714	78.13		100
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	17.496	154	126327	70.75		94
23) Acenaphthylene	18.971	152	155254	80.79		97
24) Acenaphthene	19.572	154	100589	83.39		90
25) Dibenzofuran	20.159	168	162573	84.54		100
26) Fluorene	21.335	166	124456	83.68		93
27) 1-Methylfluorene	23.321	180	77078	91.01		83
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	25.385	167	147790	76.72		100
34) Dibenzothiophene	24.206	184	187522m	87.59		
35) 4-Methyldibenzothiophene	25.703	198	126989	90.56		100
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	24.637	178	188157	84.98		98
42) Anthracene	24.807	178	165709	81.34		95
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335C.D
Acq On : 9 Sep 2014 1:22 pm
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 60 Sample Multiplier: 1

Quant Time: Sep 11 09:10:08 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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	26.747	192	149621	89.92			95
48)	3,6-Dimethylphenanthrene	27.835	206	127927	90.73			95
49)	Retene	30.498	234	66701	88.59		#	20
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	32.774	234	185464	88.54			100
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	28.723	202	209943	89.00		#	100
59)	Pyrene	29.495	202	222420	85.06		#	100
60)	2-Methylfluoranthene	30.268	216	137378	89.66		#	100
61)	Benzo(b)fluorene	30.876	216	143754	96.16			93
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.584	228	199356	89.94			98
68)	Chrysene/Triphenylene	33.708	228	204907	87.83			99
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	42.492	191	86022	92.95			100
77)	Benzo(b)fluoranthene	37.097	252	186862	87.05			99
78)	Benzo(k,j)fluoranthene	37.180	252	189966	84.97			99
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.069	252	231463	90.18			100
81)	Benzo(a)pyrene	38.249	252	175573	79.55			100
82)	Indeno(1,2,3-c,d)pyrene	42.891	276	215261	82.84			100
83)	Dibenzo(a,h)anthracene	42.954	278	170412	82.36			92
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	44.225	276	190867	81.90			95
89)	Perylene	38.555	252	182647	72.03		#	100
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\MS50226\
Data File : ENV3335C.D
Acq On : 9 Sep 2014 1:22 pm
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 60 Sample Multiplier: 1

Quant Time: Sep 11 09:10:08 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

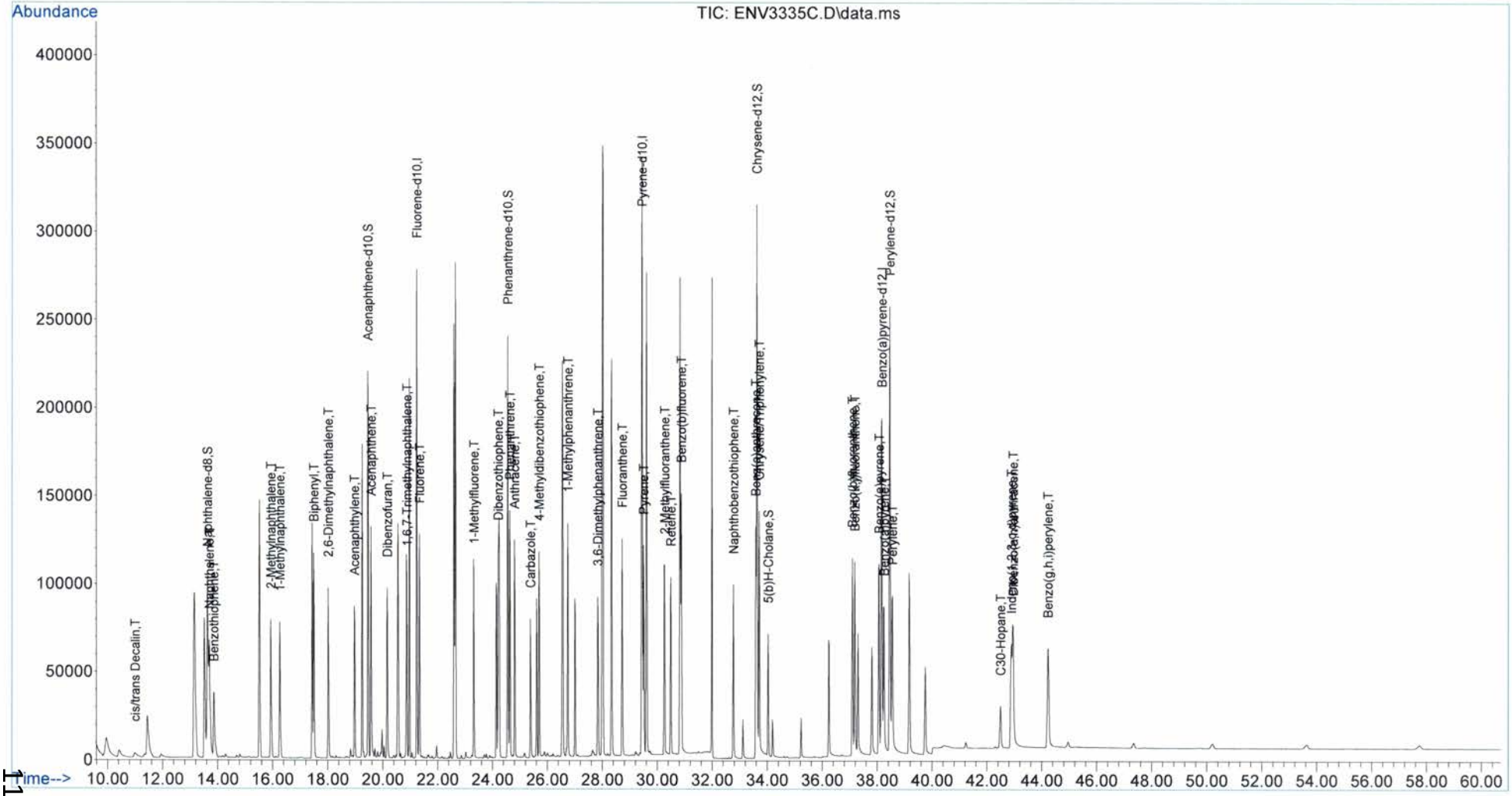
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ENV3335C.D
Acq On : 9 Sep 2014 1:22 pm
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 60 Sample Multiplier: 1

Quant Time: Sep 11 09:10:08 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



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

Data File Name ARC2050.D
Data File Path C:\GCMS5\MS50226\
Operator ECM(YMIAO)
Date Acquired 9/9/2014 14:30
Acq. Method File PAH-2014.M
Sample Name SHN-Cove-005(B)090314
Misc Info 0
Instrument Name GCMS5
Vial Number 61
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

ARC2050.D
SHN-Cove-005(B)090314
9/9/2014 14:30
PAH-2014.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	13.69	14409	7.4199	10.2343
9)+10)	C1-Naphthalenes	16.10	12215	6.2901	8.6760
13)	C2-Naphthalenes	18.29	15891	8.1830	11.2869
14)	C3-Naphthalenes	20.29	18011	9.2747	12.7927
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	17.50	2645	1.5256	2.1042
23)	Acenaphthylene	18.97	523	0.2803	0.3866
24)	Acenaphthene	19.57	720	0.6147	0.8479
25)	Dibenzofuran	20.16	7166	3.8375	5.2931
26)	Fluorene	21.34	4714	3.2643	4.5025
28)	C1-Fluorenes	23.32	2504	1.7340	2.3917
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	25.40	1871	0.9756	1.3457
42)	Anthracene	24.81	2513	1.2391	1.7091
41)	Phenanthrene	24.64	27070	12.2815	16.9401
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.53	122782	55.7055	76.8354
50)	C2-Phenanthrenes/Anthracenes	28.02	88543	40.1713	55.4089
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	24.21	2781	1.3049	1.7998
35)+36)+37)	C1-Dibenzothiophenes	26.02	2199	1.0318	1.4232
38)	C2-Dibenzothiophenes	27.43	5489	2.5755	3.5524
39)	C3-Dibenzothiophenes	29.28	4132	1.9388	2.6742
40)	C4-Dibenzothiophenes	30.47	1880	0.8821	1.2167
58)	Fluoranthene	28.72	8938	3.8063	5.2501
59)	Pyrene	29.50	5929	2.2778	3.1417
62)	C1-Fluoranthenes/Pyrenes	31.32	3174	1.3517	1.8644
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	33.61	1438	0.6517	0.8988
68)	Chrysene/Triphenylene	33.71	1621	0.6979	0.9626
69)	C1-Chrysenes	35.45	2727	1.1741	1.6194
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	38.46	18963	7.8846	10.8754
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	15.94	8929	6.5962	9.0982
10)	1-Methylnaphthalene	16.26	3286	2.6896	3.7099
11)	2,6-Dimethylnaphthalene	18.03	1584	1.3055	1.8006
12)	1,6,7-Trimethylnaphthalene	20.87	559	0.4938	0.6811
27)	1-Methylfluorene	23.32	760	0.9242	1.2748
35)	4-Methyldibenzothiophene	25.70	1009	0.7228	0.9969
36)	2/3-Methyldibenzothiophene	26.01	867	0.6211	0.8566
37)	1-Methyldibenzothiophene	26.34	323	0.2314	0.3191
43)	3-Methylphenanthrene	26.29	2635	1.5907	2.1941
44)	2-Methylphenanthrene	26.38	4323	2.6097	3.5996
45)	2-Methylanthracene	26.55	111929	67.5691	93.1991
46)	4/9-Methylphenanthrene	26.66	1952	1.1784	1.6254
47)	1-Methylphenanthrene	26.75	1943	1.1730	1.6179
48)	3,6-Dimethylphenanthrene	27.84	877	0.6248	0.8618
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	30.27	452	0.2963	0.4087
61)	Benzo(b)fluorene	30.88	223	0.1498	0.2067
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	13.63	180154	107.15	42.84
21)	Acenaphthene-d10	19.46	145873	142.77	57.07
32)	Phenanthrene-d10	24.56	322692	181.39	72.50
66)	Chrysene-d12	33.63	411673	200.00	79.99
88)	Perylene-d12	38.46	402287	215.99	86.39
90)	5(b)H-Cholane	34.04	123030	258.50	103.40
	Internal Standards				
1)	Fluorene-d10	21.24	256231	251.05	
31)	Pyrene-d10	29.45	462970	250.63	
73)	Benzo(a)pyrene-d12	38.15	384830	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ARC2050.D
Acq On : 9 Sep 2014 2:30 pm
Operator : ECM(YMIAO)
Sample : SHN-Cove-005(B)090314
Misc :
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Sep 11 09:16:17 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.239	176	256231	251.05			0.00
31) Pyrene-d10	29.446	212	462970	250.63			0.00
73) Benzo(a)pyrene-d12	38.152	264	384830	250.32			-0.03
System Monitoring Compounds							
2) Naphthalene-d8	13.628	136	180154	107.15			0.00
21) Acenaphthene-d10	19.458	164	145873	142.77			-0.01
32) Phenanthrene-d10	24.557	188	322692	181.39			-0.01
66) Chrysene-d12	33.630	240	411673	199.99			-0.02
88) Perylene-d12	38.457	264	402287	215.99			-0.03
90) 5(b)H-Cholane	34.035	217	123030	258.50			-0.02
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	13.691	128	14409	7.42			97
9) 2-Methylnaphthalene	15.937	142	8929	6.60			94
10) 1-Methylnaphthalene	16.260	142	3286	2.69			98
11) 2,6-Dimethylnaphthalene	18.029	156	1584m	1.31			
12) 1,6,7-Trimethylnaphtha...	20.872	170	559	0.49		#	1
13) C2-Naphthalenes	18.290	156	15891m	8.18			
14) C3-Naphthalenes	20.294	170	18011m	9.27			
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	17.496	154	2645	1.53			92
23) Acenaphthylene	18.971	152	523	0.28		#	64
24) Acenaphthene	19.572	154	720	0.61			88
25) Dibenzofuran	20.159	168	7166	3.84			100
26) Fluorene	21.335	166	4714	3.26			91
27) 1-Methylfluorene	23.321	180	760	0.92			91
28) C1-Fluorenes	23.321	180	2504m	1.73			
29) C2-Fluorenes	0.000		0	N.D.	d		
30) C3-Fluorenes	0.000		0	N.D.	d		
33) Carbazole	25.397	167	1871	0.98			100
34) Dibenzothiophene	24.206	184	2781	1.30			97
35) 4-Methyldibenzothiophene	25.703	198	1009	0.72			100
36) 2/3-Methyldibenzothiop...	26.009	198	867	0.62			100
37) 1-Methyldibenzothiophene	26.338	198	323	0.23			100
38) C2-Dibenzothiophenes	27.427	212	5489m	2.58			
39) C3-Dibenzothiophenes	29.282	226	4132m	1.94			
40) C4-Dibenzothiophenes	30.465	240	1880m	0.88			
41) Phenanthrene	24.637	178	27070	12.28			98
42) Anthracene	24.807	178	2513	1.24			99
43) 3-Methylphenanthrene	26.293	192	2635m	1.59			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ARC2050.D
Acq On : 9 Sep 2014 2:30 pm
Operator : ECM(YMIAO)
Sample : SHN-Cove-005(B)090314
Misc :
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Sep 11 09:16:17 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) 2-Methylphenanthrene	26.383	192	4323	2.61			85
45) 2-Methylanthracene	26.554	192	111929m	67.57			
46) 4/9-Methylphenanthrene	26.656	192	1952m	1.18			
47) 1-Methylphenanthrene	26.746	192	1943	1.17			91
48) 3,6-Dimethylphenanthrene	27.835	206	877	0.62		#	57
49) Retene	0.000		0	N.D.	d		
50) C2-Phenanthrenes/Anthr...	28.016	206	88543m	40.17			
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	28.723	202	8938m	3.81			
59) Pyrene	29.495	202	5929m	2.28			
60) 2-Methylfluoranthene	30.268	216	452m	0.30			
61) Benzo(b)fluorene	30.876	216	223m	0.15			
62) C1-Fluoranthenes/Pyrenes	31.320	216	3174m	1.35			
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	33.615	228	1438m	0.65			
68) Chrysene/Triphenylene	33.708	228	1621m	0.70			
69) C1-Chrysenes	35.453	242	2727m	1.17			
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	38.457	252	18963	7.88		#	100
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\MS50226\
Data File : ARC2050.D
Acq On : 9 Sep 2014 2:30 pm
Operator : ECM(YMIAO)
Sample : SHN-Cove-005(B)090314
Misc :
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Sep 11 09:16:17 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

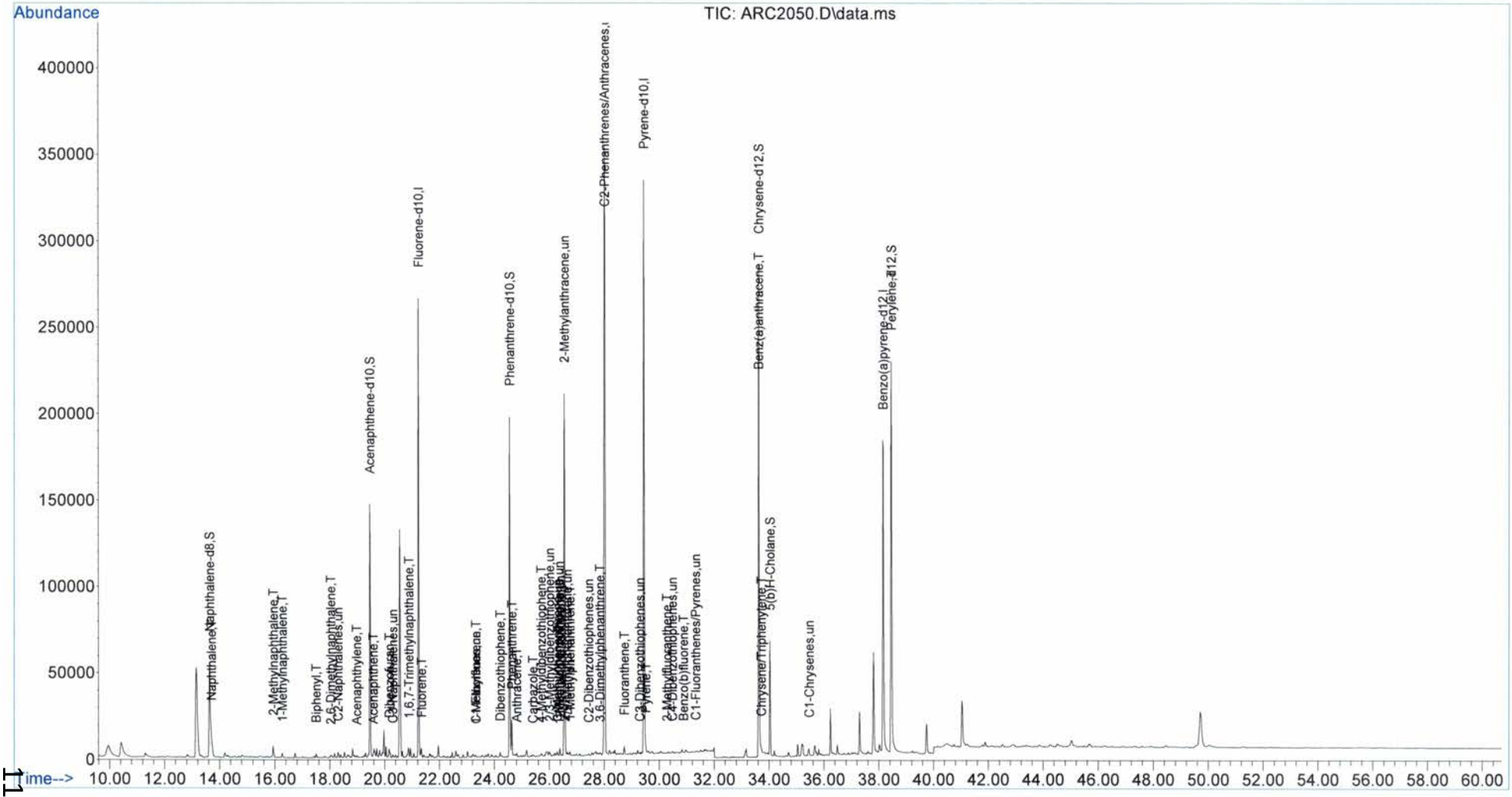
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS50226\
Data File : ARC2050.D
Acq On : 9 Sep 2014 2:30 pm
Operator : ECM(YMIAO)
Sample : SHN-Cove-005(B)090314
Misc :
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Sep 11 09:16:17 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



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

TPH/Aliphatic
ICAL
FID1C08FRONT082514.M

GC/FID-1 FRONT

Calibration Status Report HP5890

Method Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Method File : FID1C08FRONT082514.M
Title : C8 - C40 aliphatic
Last Update : Mon Aug 25 10:58:36 2014
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	1	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238C.D
2	2	10	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238D.D
3	3	25	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238E.D
4	4	40	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238F.D
5	5	50	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238G.D
6	6	100	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238H.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Aug 25 09:29 2014	Aug 25 09:29 2014	22-Aug-2014, 15:10:28
2	2	Aug 25 09:38 2014	Aug 25 09:37 2014	22-Aug-2014, 16:20:38
3	3	Aug 25 09:44 2014	Aug 25 09:43 2014	22-Aug-2014, 17:30:56
4	4	Aug 25 09:52 2014	Aug 25 09:51 2014	22-Aug-2014, 18:41:17
5	5	Aug 25 10:17 2014	Aug 25 10:16 2014	22-Aug-2014, 19:51:32
6	6	Aug 25 10:47 2014	Aug 25 10:47 2014	22-Aug-2014, 21:01:54

FID1C08FRONT082514.M Mon Aug 25 10:58:57 2014

Response Factor Report HP5890

Method Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Method File : FID1C08FRONT082514.M
Title : C8 - C40 aliphatic
Last Update : Mon Aug 25 10:58:36 2014
Response Via : Initial Calibration

Calibration Files
1 =FID10238C.D 2 =FID10238D.D 3 =FID10238E.D
4 =FID10238F.D 5 =FID10238G.D 6 =FID10238H.D

8/25/14

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	n-hexadecane-d34	ISTD							
2)		n-C8	1.033	0.971	0.968	0.953	0.950	0.959	0.972	3.18
3)		n-C9	1.090	1.016	1.010	1.001	1.000	1.001	1.020	3.43
4)		n-C10	1.128	1.069	1.058	1.050	1.047	1.045	1.066	2.94
5)		n-C11	1.156	1.103	1.093	1.080	1.078	1.073	1.097	2.81
6)	S	n-dodecane-d26	1.033	0.968	0.954	0.955	0.991	0.933	0.972	3.62
7)		n-C12	1.223	1.149	1.142	1.128	1.126	1.117	1.147	3.37
8)		i-13	1.247	1.171	1.163	1.147	1.145	1.133	1.168	3.51
9)		i-14	1.259	1.193	1.183	1.164	1.165	1.149	1.185	3.33
10)		n-C13	1.247	1.171	1.163	1.147	1.145	1.133	1.168	3.51
11)		i-15	1.312	1.213	1.203	1.184	1.184	1.164	1.210	4.38
12)		n-C14	1.259	1.193	1.183	1.164	1.165	1.149	1.185	3.33
13)		i-16	1.301	1.222	1.214	1.190	1.192	1.169	1.215	3.82
14)		n-C15	1.312	1.213	1.203	1.184	1.184	1.164	1.210	4.38
15)		n-C16	1.301	1.222	1.214	1.190	1.192	1.169	1.215	3.82
16)	I	5a-androstane	ISTD							
17)		i-18	1.023	0.966	0.966	0.952	0.944	0.940	0.965	3.17
18)		n-C17	1.055	0.977	0.975	0.959	0.952	0.949	0.978	4.06
19)		Pristane	1.033	0.972	0.968	0.955	0.948	0.944	0.970	3.35
20)		n-C18	1.023	0.966	0.966	0.952	0.944	0.940	0.965	3.16
21)		Phytane	0.899	0.835	0.836	0.824	0.819	0.812	0.838	3.77
22)		n-C19	1.015	0.960	0.959	0.944	0.938	0.931	0.958	3.16
23)	S	n-eicosane-d42	0.877	0.818	0.813	0.813	0.840	0.791	0.825	3.61
24)		n-C20	1.022	0.970	0.971	0.955	0.950	0.940	0.968	2.99
25)		n-C21	1.061	0.990	0.993	0.976	0.971	0.964	0.993	3.57
26)		n-C22	1.040	0.976	0.977	0.960	0.957	0.944	0.976	3.46
27)		n-C23	1.031	0.970	0.970	0.953	0.950	0.939	0.969	3.38
28)		n-C24	1.036	0.963	0.966	0.947	0.945	0.932	0.965	3.83
29)		n-C25	1.023	0.958	0.959	0.941	0.939	0.925	0.958	3.59
30)		n-C26	1.028	0.971	0.970	0.951	0.951	0.935	0.968	3.38
31)		n-C27	1.018	0.956	0.954	0.936	0.935	0.918	0.953	3.67
32)		n-C28	1.021	0.948	0.947	0.930	0.931	0.911	0.948	4.03
33)		n-C29	0.993	0.937	0.937	0.920	0.917	0.899	0.934	3.45
34)	S	n-triacontane...	0.765	0.728	0.722	0.719	0.747	0.696	0.730	3.26
35)		n-C30	0.993	0.934	0.932	0.916	0.921	0.895	0.932	3.54
36)		n-C31	0.962	0.908	0.902	0.887	0.889	0.866	0.902	3.61
37)		n-C32	0.976	0.922	0.912	0.899	0.901	0.878	0.914	3.65
38)		n-C33	0.916	0.872	0.864	0.852	0.853	0.829	0.864	3.38
39)		n-C34	0.923	0.892	0.883	0.873	0.872	0.847	0.882	2.84
40)		n-C35	0.930	0.891	0.877	0.866	0.868	0.842	0.879	3.38
41)		n-C36	0.935	0.918	0.908	0.894	0.898	0.872	0.904	2.42
42)		n-C37	0.884	0.868	0.860	0.847	0.849	0.825	0.856	2.36
43)		n-C38	0.866	0.878	0.868	0.856	0.857	0.835	0.860	1.69
44)		n-C39	0.866	0.870	0.863	0.853	0.854	0.832	0.856	1.58
45)		n-C40	0.846	0.862	0.862	0.849	0.854	0.831	0.850	1.39
46)		TPH	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
47)		TRH1	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
48)		TRH2	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
49)		TRH3	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
50)		TRH4	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
51)		TRH5	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
52)		TRH6	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10

53)	GRO	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
54)	DRO	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
55)	RRO	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10

(#) = Out of Range

FID1C08FRONT082514.M Mon Aug 25 10:58:39 2014

Area for TPH Calculations

Last Calibration Update Mon Aug 25 10:47:52 2014
Quant Method FID1C08FRONT082514.M

	Level 1 FID10238C.D	Level 2 FID10238D.D	Level 3 FID10238E.D	Level 4 FID10238F.D	Level 5 FID10238G.D	Level 6 FID10238H.D
n-C8	6402	48514	127197	193756	245321	491962
n-C9	6771	50842	132980	203949	258237	513805
n-C10	6971	53319	138602	212975	269760	535122
n-C11	7158	55105	143430	219456	278257	550502
n-C12	7560	57281	149628	228878	290030	572080
n-C13	7744	58674	153165	233778	296394	583192
n-C14	7786	59471	155075	236023	299974	588292
n-C15	8138	60655	158143	240711	305883	597622
n-C16	8059	60997	159216	241711	307510	599639
n-C17	8275	62224	161998	245442	312301	608072
Pristane	8078	61774	160516	243906	310221	603801
n-C18	8026	61494	160526	243636	309666	602220
Phytane	7241	54608	142710	216621	275846	534602
n-C19	8207	63046	164400	249352	317236	615644
n-C20	7996	61621	161051	244058	310890	601436
n-C21	8314	62985	164880	249620	318322	617139
n-C22	8121	61934	161845	244917	312715	603119
n-C23	8057	61551	160837	243314	310706	599912
n-C24	8103	61169	160169	242036	309345	596040
n-C25	8002	60869	159112	240481	307467	591663
n-C26	8033	61608	160703	242633	310652	597149
n-C27	7955	60663	158010	238638	305462	586732
n-C28	7967	60141	156768	236899	303843	581652
n-C29	7752	59435	155115	234460	299566	574121
n-C30	7756	59252	154287	233656	300840	571548
n-C31	7714	59099	153299	232156	298086	567904
n-C32	7644	58623	151402	229887	295348	562266
n-C33	7143	55223	142947	216925	278264	528468
n-C34	7206	56634	146202	222609	285069	541071
n-C35	7253	56440	145032	220557	283203	537074
n-C36	7301	58180	150184	227882	293172	556026
n-C37	7109	56713	146700	222420	285593	542515
n-C38	6782	55870	144026	218934	280844	534886
n-C39	6784	55367	143304	218297	280102	533119
n-C40	6599	54689	142633	216299	278700	530166
Average Area (use for TPH, TRPH, GRO, DRO, RRO)	7600	58459	152174	231053	294995	570016
n-C36/n-C20	0.91	0.94	0.93	0.93	0.94	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:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238C.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 15:10:28
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:29:22 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Aug 20 09:30:53 2014
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	12.620	247292	50.000	ug/mlm
16) I	5a-androstane	17.713	312173	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.339	6385	1.387	ug/mlm
23) S	n-eicosane-d42	17.176	6800	1.347	ug/mlm
34) S	n-triacontane-d62	29.063	6053	1.297	ug/mlm
Target Compounds					
2)	n-C8	3.213	6402	1.353	ug/mlm
3)	n-C9	4.508	6771	1.395	ug/mlm
4)	n-C10	5.919	6971	1.387	ug/mlm
5)	n-C11	7.278	7158	1.397	ug/mlm
7)	n-C12	8.545	7560	1.391	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	9.722	7744	1.399	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.820	7786	1.377	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.853	8138	1.392	ug/mlm
15)	n-C16	12.864	8059	1.370	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.939	8275	1.424	ug/mlm
19)	Pristane	14.054	8078	1.357	ug/mlm
20)	n-C18	15.088	8026	1.379	ug/mlm
21)	Phytane	15.248	7241	1.399	ug/mlm
22)	n-C19	16.305	8207	1.411	ug/mlm
24)	n-C20	17.568	7996	1.336	ug/mlm
25)	n-C21	18.857	8314	1.377	ug/mlm
26)	n-C22	20.153	8121	1.349	ug/mlm
27)	n-C23	21.438	8057	1.337	ug/mlm
28)	n-C24	22.698	8103	1.346	ug/mlm
29)	n-C25	23.933	8002	1.339	ug/mlm
30)	n-C26	25.136	8033	1.329	ug/mlm
31)	n-C27	26.302	7955	1.326	ug/mlm
32)	n-C28	27.436	7967	1.340	ug/mlm
33)	n-C29	28.532	7752	1.309	ug/mlm
35)	n-C30	29.595	7756	1.307	ug/mlm
36)	n-C31	30.627	7714	1.337	ug/mlm
37)	n-C32	31.631	7644	1.303	ug/mlm
38)	n-C33	32.602	7143	1.285	ug/mlm
39)	n-C34	33.546	7206	1.259	ug/mlm
40)	n-C35	34.508	7253	1.290	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238C.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 15:10:28
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:29:22 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Aug 20 09:30:53 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.589	7301	1.256	ug/mlm
42)	n-C37	36.828	7109	1.296	ug/mlm
43)	n-C38	38.277	6782	1.228	ug/mlm
44)	n-C39	39.971	6784	1.235	ug/mlm
45)	n-C40	41.968	6599	1.225	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

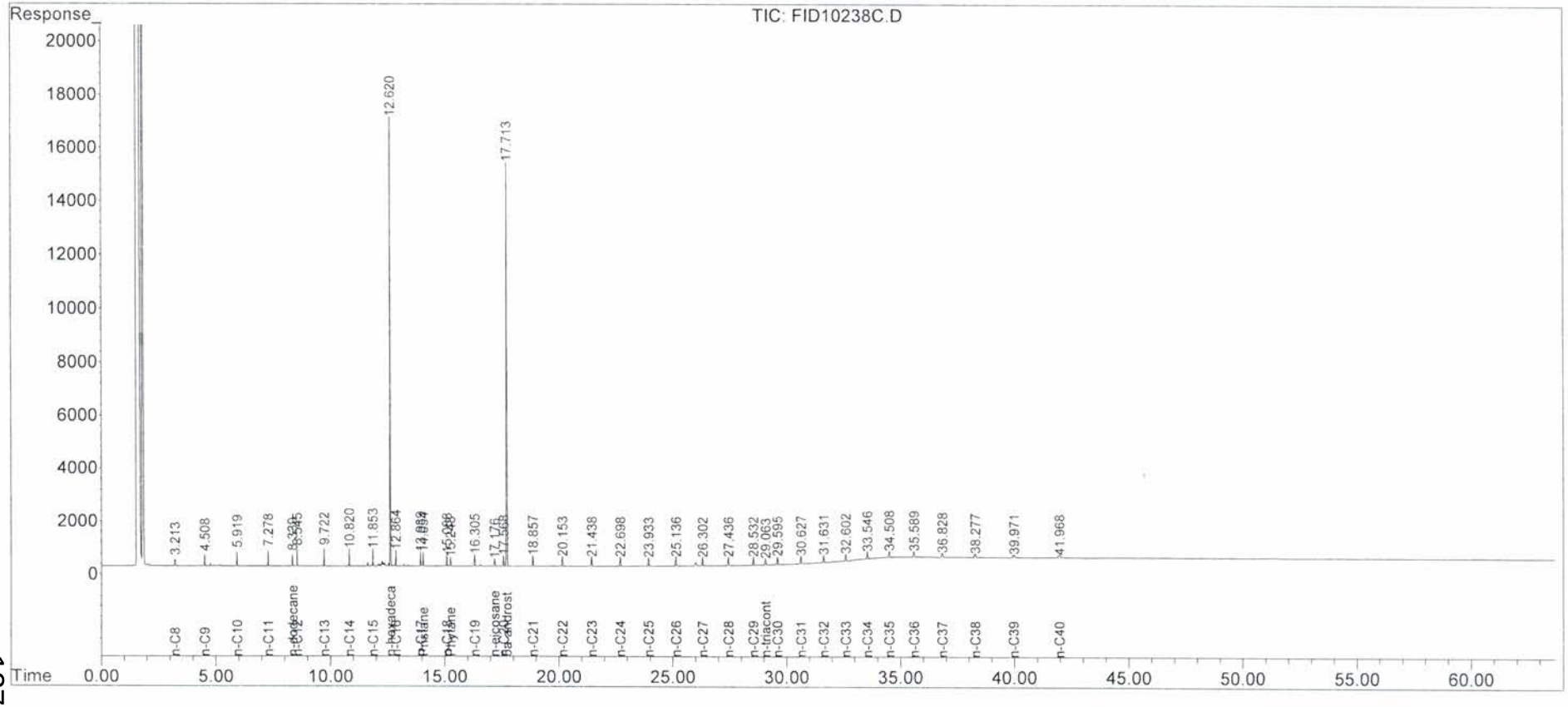
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238C.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 15:10:28
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:29:22 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Aug 20 09:30:53 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238D.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 16:20:38
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:37:53 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:29:41 2014
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	12.621	249297	50.000	ug/mlm
16) I	5a-androstane	17.712	316991	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.338	48240	10.187	ug/mlm
23) S	n-eicosane-d42	17.178	51498	9.943	ug/mlm
34) S	n-triacontane-d62	29.063	46837	9.960	ug/mlm
Target Compounds					
2)	n-C8	3.212	48514	10.245	ug/mlm
3)	n-C9	4.506	50841	10.302	ug/mlm
4)	n-C10	5.918	53319	10.393	ug/mlm
5)	n-C11	7.278	55105	10.423	ug/mlm
7)	n-C12	8.544	57281	10.281	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	9.721	58674	10.280	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.820	59471	10.242	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.853	60655	10.128	ug/mlm
15)	n-C16	12.864	60997	10.117	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.939	62224	10.305	ug/mlm
19)	Pristane	14.054	61774	10.157	ug/mlm
20)	n-C18	15.089	61494	10.266	ug/mlm
21)	Phytane	15.249	54608	10.365	ug/mlm
22)	n-C19	16.307	63046	10.545	ug/mlm
24)	n-C20	17.570	61621	10.143	ug/mlm
25)	n-C21	18.858	62985	10.088	ug/mlm
26)	n-C22	20.153	61934	10.066	ug/mlm
27)	n-C23	21.436	61551	10.044	ug/mlm
28)	n-C24	22.699	61169	10.001	ug/mlm
29)	n-C25	23.934	60869	10.013	ug/mlm
30)	n-C26	25.135	61608	10.011	ug/mlm
31)	n-C27	26.301	60663	9.968	ug/mlm
32)	n-C28	27.435	60141	9.931	ug/mlm
33)	n-C29	28.532	59435	9.924	ug/mlm
35)	n-C30	29.598	59252	9.886	ug/mlm
36)	n-C31	30.628	59099	10.172	ug/mlm
37)	n-C32	31.628	58623	9.946	ug/mlm
38)	n-C33	32.602	55223	9.913	ug/mlm
39)	n-C34	33.549	56634	9.964	ug/mlm
40)	n-C35	34.505	56440	10.021	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238D.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 16:20:38
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:37:53 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:29:41 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.587	58180	10.045	ug/mlm
42)	n-C37	36.832	56713	10.393	ug/mlm
43)	n-C38	38.271	55870	10.221	ug/mlm
44)	n-C39	39.976	55367	10.200	ug/mlm
45)	n-C40	41.959	54689	10.178	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

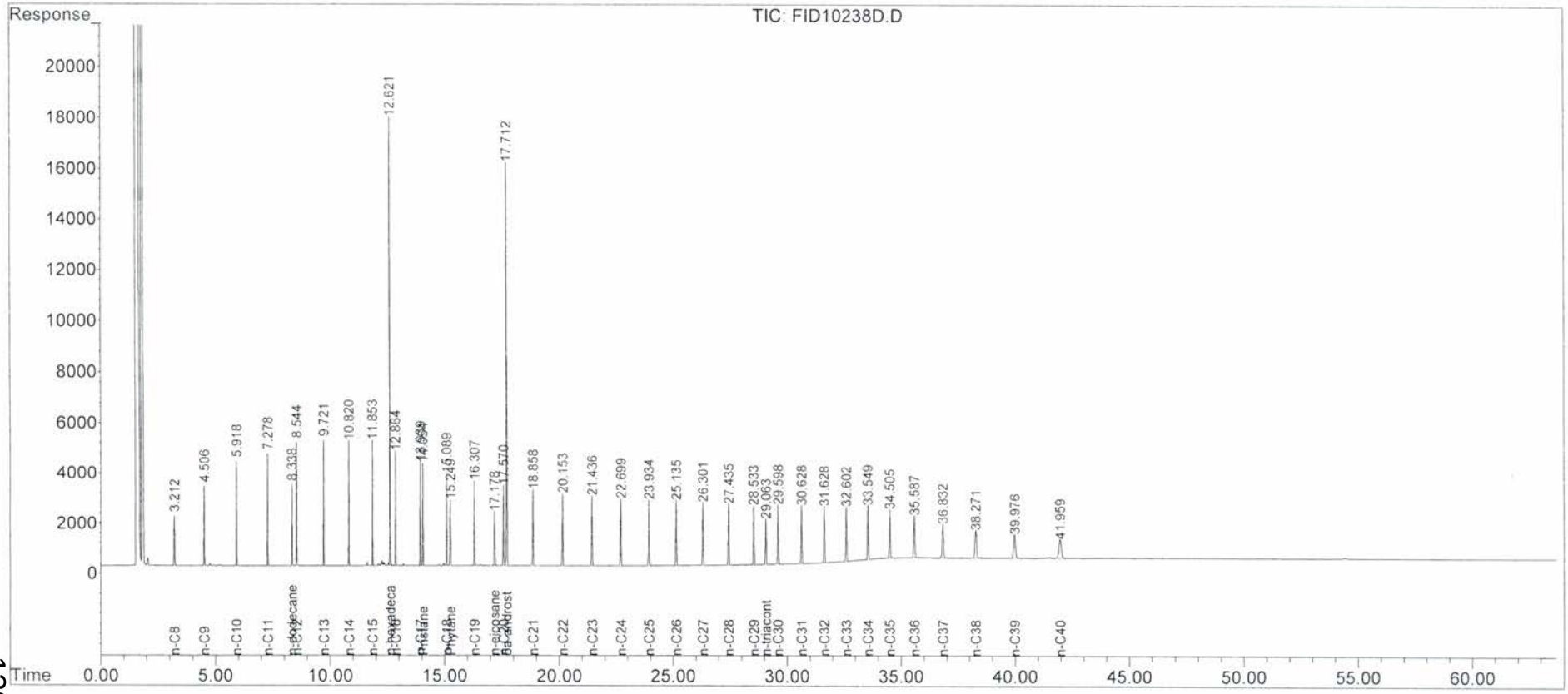
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238D.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 16:20:38
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:37:53 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:29:41 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238E.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 17:30:56
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:43:59 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:37:59 2014
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	12.621	262074	50.000	ug/mlm
16)	I	5a-androstane	17.713	330976	50.040	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.340	125033	24.905	ug/mlm
23)	S	n-eicosane-d42	17.179	133676	24.660	ug/mlm
34)	S	n-triacontane-d62	29.064	121216	24.819	ug/mlm
Target Compounds						
2)		n-C8	3.212	127197	25.378	ug/mlm
3)		n-C9	4.507	132980	25.367	ug/mlm
4)		n-C10	5.920	138602	25.376	ug/mlm
5)		n-C11	7.280	143430	25.468	ug/mlm
7)		n-C12	8.546	149628	25.322	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	9.722	153165	25.367	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	10.821	155075	25.217	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	11.855	158143	25.046	ug/mlm
15)		n-C16	12.865	159216	25.055	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	13.940	161998	25.506	ug/mlm
19)		Pristane	14.056	160516	25.230	ug/mlm
20)		n-C18	15.092	160526	25.520	ug/mlm
21)		Phytane	15.248	142710	25.930	ug/mlm
22)		n-C19	16.309	164400	26.230	ug/mlm
24)		n-C20	17.572	161051	25.334	ug/mlm
25)		n-C21	18.860	164880	25.249	ug/mlm
26)		n-C22	20.156	161845	25.151	ug/mlm
27)		n-C23	21.440	160837	25.120	ug/mlm
28)		n-C24	22.700	160169	25.090	ug/mlm
29)		n-C25	23.934	159112	25.084	ug/mlm
30)		n-C26	25.138	160703	25.029	ug/mlm
31)		n-C27	26.306	158010	24.903	ug/mlm
32)		n-C28	27.437	156768	24.826	ug/mlm
33)		n-C29	28.537	155115	24.873	ug/mlm
35)		n-C30	29.598	154287	24.772	ug/mlm
36)		n-C31	30.633	153299	25.402	ug/mlm
37)		n-C32	31.633	151402	24.747	ug/mlm
38)		n-C33	32.605	142947	24.733	ug/mlm
39)		n-C34	33.552	146202	24.822	ug/mlm
40)		n-C35	34.507	145032	24.782	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238E.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 17:30:56
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:43:59 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:37:59 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.590	150184	25.003	ug/mlm
42)	n-C37	36.836	146700	25.914	ug/mlm
43)	n-C38	38.279	144026	25.373	ug/mlm
44)	n-C39	39.983	143304	25.437	ug/mlm
45)	n-C40	41.966	142633	25.560	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

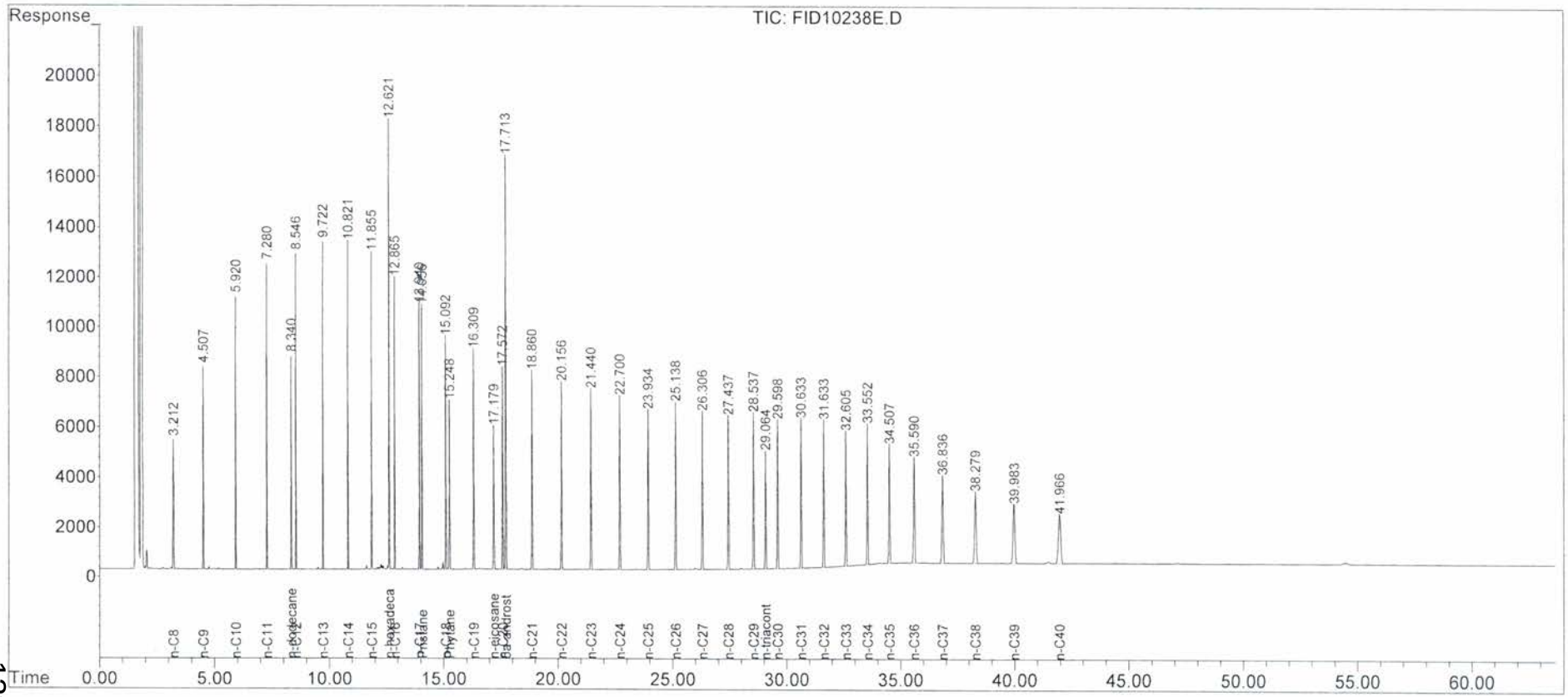
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238E.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 17:30:56
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:43:59 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:37:59 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238F.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 18:41:17
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:51:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:44:06 2014
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	12.621	253536	50.000	ug/mlm
16)	I 5a-androstane	17.713	318576	50.040	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.340	193746	39.731	ug/mlm
23)	S n-eicosane-d42	17.181	205736	39.316	ug/mlm
34)	S n-triacontane-d62	29.069	185857	39.649	ug/mlm
	Target Compounds				
2)	n-C8	3.212	193756	39.744	ug/mlm
3)	n-C9	4.508	203949	40.006	ug/mlm
4)	n-C10	5.921	212975	40.082	ug/mlm
5)	n-C11	7.280	219456	40.053	ug/mlm
7)	n-C12	8.546	228878	39.861	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	9.723	233778	39.903	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.822	236023	39.572	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.856	240711	39.382	ug/mlm
15)	n-C16	12.866	241711	39.298	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.941	245442	39.925	ug/mlm
19)	Pristane	14.057	243906	39.763	ug/mlm
20)	n-C18	15.093	243636	40.056	ug/mlm
21)	Phytane	15.253	216621	40.798	ug/mlm
22)	n-C19	16.312	249352	41.202	ug/mlm
24)	n-C20	17.573	244058	39.788	ug/mlm
25)	n-C21	18.863	249620	39.620	ug/mlm
26)	n-C22	20.156	244917	39.475	ug/mlm
27)	n-C23	21.442	243314	39.436	ug/mlm
28)	n-C24	22.703	242036	39.346	ug/mlm
29)	n-C25	23.939	240481	39.354	ug/mlm
30)	n-C26	25.140	242633	39.249	ug/mlm
31)	n-C27	26.310	238638	39.119	ug/mlm
32)	n-C28	27.439	236899	39.021	ug/mlm
33)	n-C29	28.537	234460	39.127	ug/mlm
35)	n-C30	29.604	233656	39.079	ug/mlm
36)	n-C31	30.636	232156	40.090	ug/mlm
37)	n-C32	31.636	229887	39.183	ug/mlm
38)	n-C33	32.609	216925	39.133	ug/mlm
39)	n-C34	33.555	222609	39.415	ug/mlm
40)	n-C35	34.513	220557	39.280	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238F.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 18:41:17
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:51:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:44:06 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.593	227882	39.523	ug/mlm
42)	n-C37	36.839	222420	40.872	ug/mlm
43)	n-C38	38.287	218934	40.117	ug/mlm
44)	n-C39	39.982	218297	40.269	ug/mlm
45)	n-C40	41.983	216299	40.215	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

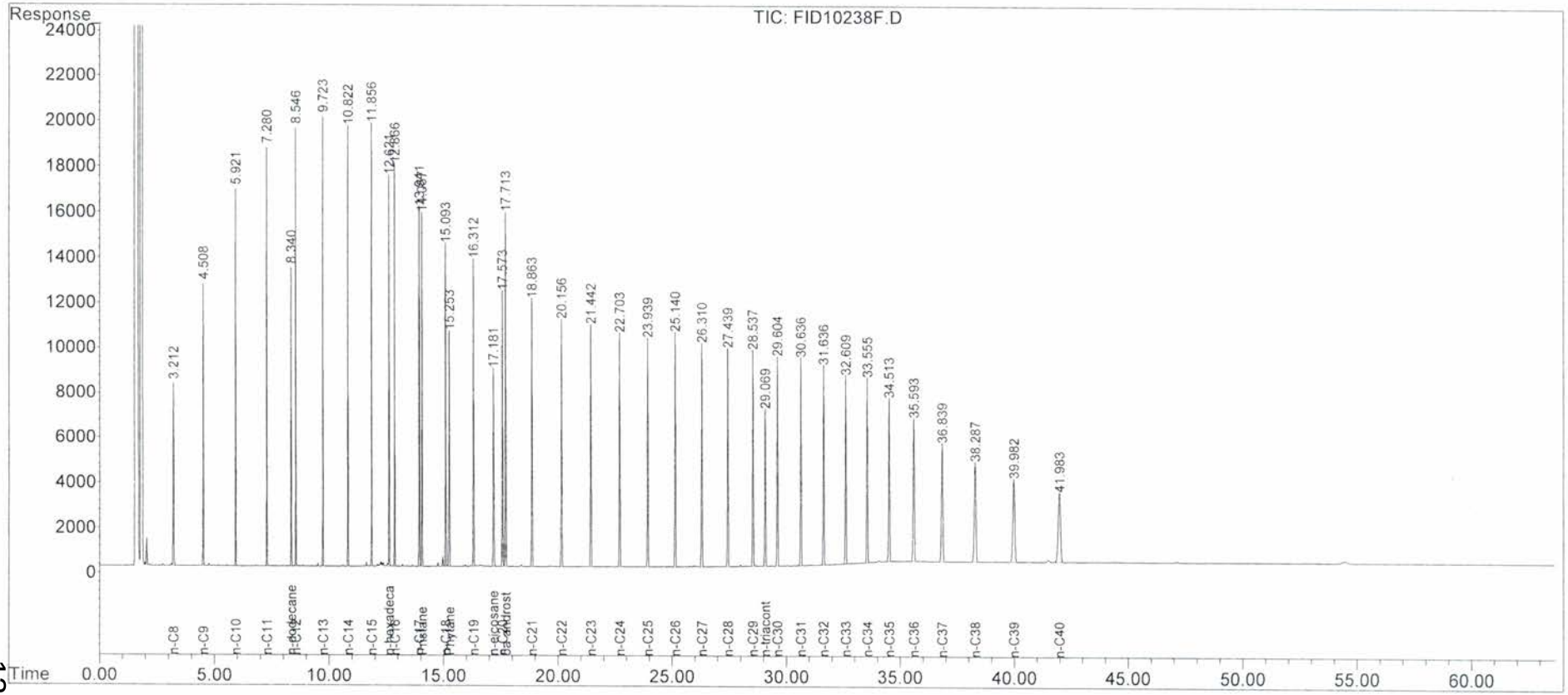
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238F.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 18:41:17
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:51:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:44:06 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238G.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 19:51:32
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:16:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:52:00 2014
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	12.621	257592	50.000	ug/mlm
16) I	5a-androstane	17.713	326515	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.340	255385	51.358	ug/mlm
23) S	n-eicosane-d42	17.181	272282	50.667	ug/mlm
34) S	n-triacontane-d62	29.065	247304	51.674	ug/mlm
	Target Compounds				
2)	n-C8	3.213	245321	49.425	ug/mlm
3)	n-C9	4.508	258237	49.615	ug/mlm
4)	n-C10	5.921	269760	49.688	ug/mlm
5)	n-C11	7.280	278257	49.770	ug/mlm
7)	n-C12	8.547	290030	49.480	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	9.724	296394	49.636	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.823	299974	49.353	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.856	305883	49.195	ug/mlm
15)	n-C16	12.867	307510	49.199	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.943	312301	49.320	ug/mlm
19)	Pristane	14.059	310221	49.211	ug/mlm
20)	n-C18	15.093	309666	49.459	ug/mlm
21)	Phytane	15.254	275846	50.597	ug/mlm
22)	n-C19	16.312	317236	50.970	ug/mlm
24)	n-C20	17.576	310890	49.349	ug/mlm
25)	n-C21	18.864	318322	49.245	ug/mlm
26)	n-C22	20.157	312715	49.154	ug/mlm
27)	n-C23	21.443	310706	49.149	ug/mlm
28)	n-C24	22.707	309345	49.103	ug/mlm
29)	n-C25	23.940	307467	49.124	ug/mlm
30)	n-C26	25.140	310652	49.094	ug/mlm
31)	n-C27	26.307	305462	48.959	ug/mlm
32)	n-C28	27.439	303843	48.939	ug/mlm
33)	n-C29	28.540	299566	48.888	ug/mlm
35)	n-C30	29.605	300840	49.279	ug/mlm
36)	n-C31	30.636	298086	50.394	ug/mlm
37)	n-C32	31.638	295348	49.305	ug/mlm
38)	n-C33	32.609	278264	49.148	ug/mlm
39)	n-C34	33.554	285069	49.401	ug/mlm
40)	n-C35	34.514	283203	49.330	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238G.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 19:51:32
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:16:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:52:00 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.598	293172	49.705	ug/mlm
42)	n-C37	36.839	285593	51.240	ug/mlm
43)	n-C38	38.280	280844	50.191	ug/mlm
44)	n-C39	39.975	280102	50.340	ug/mlm
45)	n-C40	41.984	278700	50.476	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

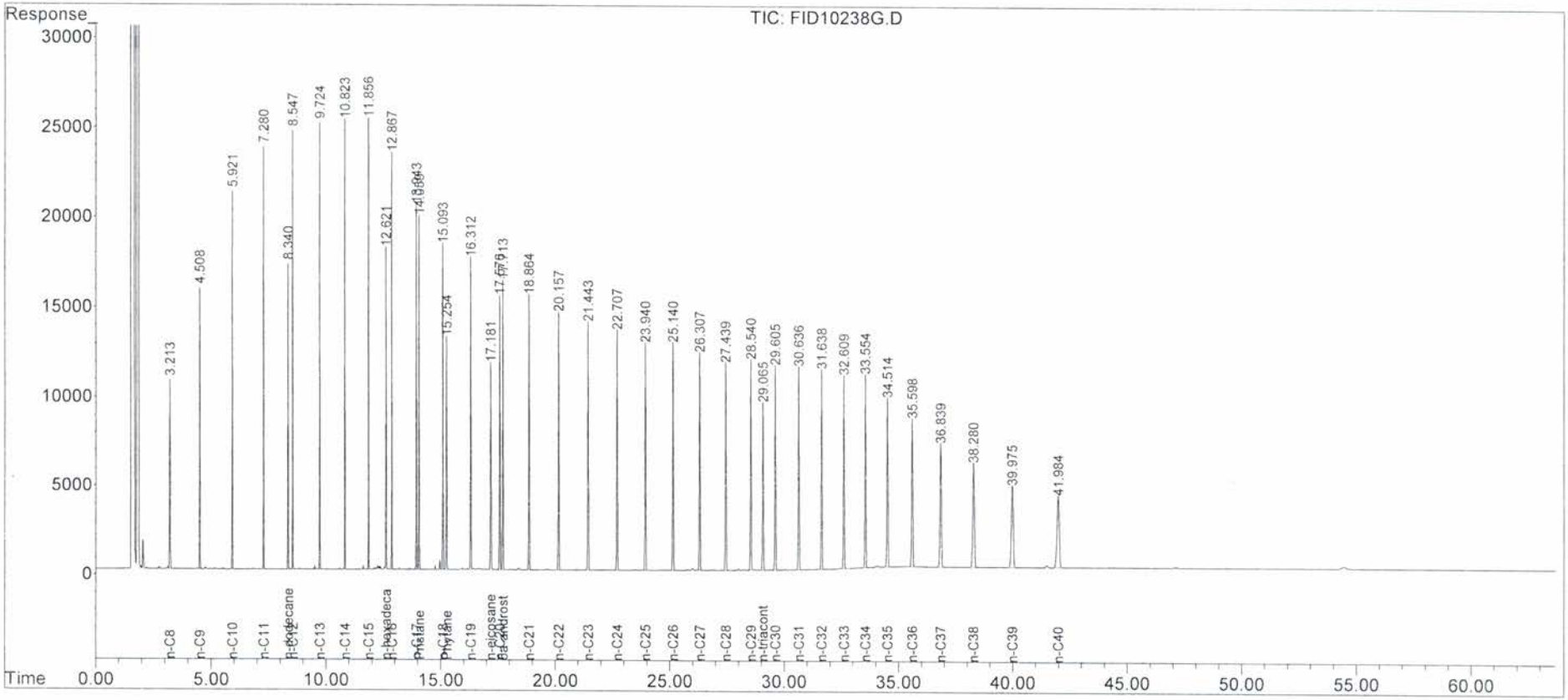
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238G.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 19:51:32
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:16:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:52:00 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238H.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 21:01:54
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:47:24 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:17:03 2014
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	12.620	256096	50.000	ug/mlm
16)	I	5a-androstane	17.714	319081	50.040	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.343	477944	96.243	ug/mlm
23)	S	n-eicosane-d42	17.185	501421	95.474	ug/mlm
34)	S	n-triacontane-d62	29.072	450349	96.703	ug/mlm
Target Compounds						
2)		n-C8	3.212	491962	99.276	ug/mlm
3)		n-C9	4.510	513805	98.815	ug/mlm
4)		n-C10	5.922	535122	98.483	ug/mlm
5)		n-C11	7.283	550502	98.407	ug/mlm
7)		n-C12	8.550	572080	97.624	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	9.727	583192	97.772	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	10.827	588292	97.102	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	11.860	597622	96.525	ug/mlm
15)		n-C16	12.872	599639	96.387	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	13.949	608072	97.967	ug/mlm
19)		Pristane	14.063	603801	97.873	ug/mlm
20)		n-C18	15.100	602220	98.192	ug/mlm
21)		Phytane	15.258	534602	100.277	ug/mlm
22)		n-C19	16.317	615644	101.086	ug/mlm
24)		n-C20	17.582	601436	97.622	ug/mlm
25)		n-C21	18.872	617139	97.695	ug/mlm
26)		n-C22	20.168	603119	97.038	ug/mlm
27)		n-C23	21.452	599912	97.205	ug/mlm
28)		n-C24	22.714	596040	96.940	ug/mlm
29)		n-C25	23.947	591663	96.917	ug/mlm
30)		n-C26	25.151	597149	96.778	ug/mlm
31)		n-C27	26.319	586732	96.522	ug/mlm
32)		n-C28	27.448	581652	96.149	ug/mlm
33)		n-C29	28.546	574121	96.273	ug/mlm
35)		n-C30	29.614	571548	96.065	ug/mlm
36)		n-C31	30.646	567904	98.583	ug/mlm
37)		n-C32	31.644	562266	96.360	ug/mlm
38)		n-C33	32.619	528468	95.824	ug/mlm
39)		n-C34	33.561	541071	96.208	ug/mlm
40)		n-C35	34.521	537074	95.883	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238H.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 21:01:54
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:47:24 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:17:03 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.608	556026	96.503	ug/mlm
42)	n-C37	36.849	542515	99.595	ug/mlm
43)	n-C38	38.302	534886	97.710	ug/mlm
44)	n-C39	39.998	533119	97.867	ug/mlm
45)	n-C40	42.003	530166	98.004	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

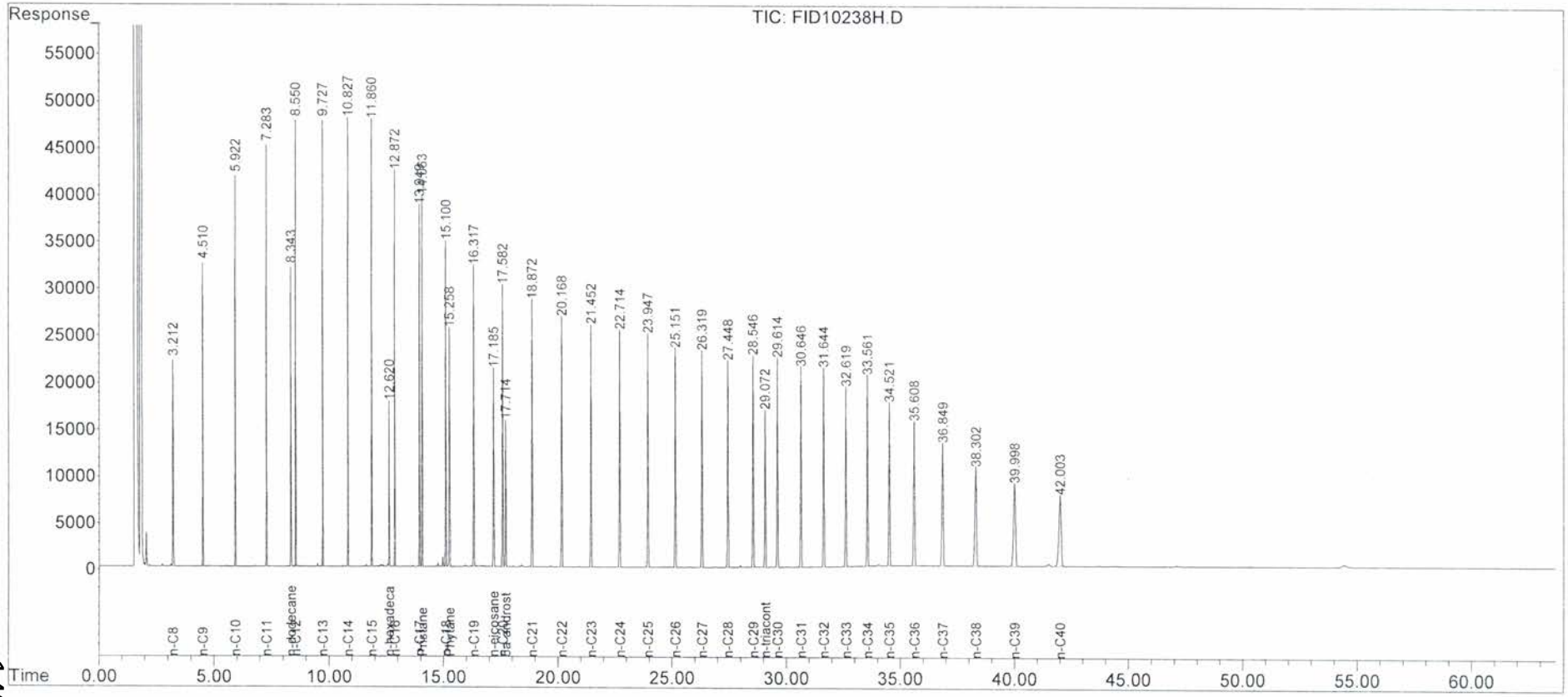
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238H.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 21:01:54
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:47:24 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:17:03 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	94	0.00
2		n-C8	0.972	1.063	-9.4	103	0.00
3		n-C9	1.020	1.141	-11.9	106	0.00
4		n-C10	1.066	1.206	-13.1	107	0.00
5		n-C11	1.097	1.253	-14.2	108	0.00
6	S	n-dodecane-d26	0.972	0.954	1.9	94	0.00
7		n-C12	1.147	1.284	-11.9	105	0.00
10		n-C13	1.168	1.308	-12.0	105	0.00
12		n-C14	1.185	1.338	-12.9	106	0.00
14		n-C15	1.210	1.370	-13.2	107	0.00
15		n-C16	1.215	1.393	-14.7	108	0.00
16	I	5a-androstane	1.000	1.000	0.0	94	0.00
18		n-C17	0.978	1.099	-12.4	106	0.00
19		Pristane	0.970	1.090	-12.4	106	0.00
20		n-C18	0.965	1.103	-14.3	107	0.00
21		Phytane	0.838	0.829	1.1	93	0.00
22		n-C19	0.958	1.079	-12.6	106	0.00
23	S	n-eicosane-d42	0.825	0.828	-0.4	96	0.00
24		n-C20	0.968	1.102	-13.8	107	0.00
25		n-C21	0.993	1.118	-12.6	106	0.00
26		n-C22	0.976	1.112	-13.9	107	0.00
27		n-C23	0.969	1.099	-13.4	107	0.00
28		n-C24	0.965	1.088	-12.7	106	-0.01
29		n-C25	0.958	1.000	-4.4	98	-0.01
30		n-C26	0.968	1.097	-13.3	106	-0.01
31		n-C27	0.953	1.087	-14.1	107	0.00
32		n-C28	0.948	1.078	-13.7	107	-0.01
33		n-C29	0.934	1.067	-14.2	107	-0.01
34	S	n-triacontane-d62	0.730	0.737	-1.0	96	-0.01
35		n-C30	0.932	1.066	-14.4	108	0.00
36		n-C31	0.902	1.001	-11.0	104	0.00
37		n-C32	0.914	1.019	-11.5	105	-0.01
38		n-C33	0.864	0.962	-11.3	105	-0.01
39		n-C34	0.882	0.988	-12.0	105	-0.01
40		n-C35	0.879	0.955	-8.6	102	-0.02
41		n-C36	0.904	0.980	-8.4	101	-0.01
42		n-C37	0.856	0.829	3.2	91	-0.02
43		n-C38	0.860	0.813	5.5	88	-0.02

44	n-C39	0.856	0.771	9.9	84	-0.03
45	n-C40	0.850	0.758	10.8	83	-0.05

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Mon Aug 25 11:08:11 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.620	245826	50.000	ug/mlm
16) I	5a-androstane	17.711	311242	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.338	117242	24.524	ug/mlm
23) S	n-eicosane-d42	17.177	127944	24.924	ug/mlm
34) S	n-triacontane-d62	29.062	116307	25.633	ug/mlm
	Target Compounds				
2)	n-C8	3.212	130929	27.388	ug/mlm
3)	n-C9	4.506	140888	28.102	ug/mlm
4)	n-C10	5.918	148172	28.268	ug/mlm
5)	n-C11	7.278	154232	28.591	ug/mlm
7)	n-C12	8.545	157761	27.964	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	9.722	161501	28.132	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.821	164442	28.216	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.854	168908	28.394	ug/mlm
15)	n-C16	12.864	171383	28.694	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.939	171835	28.253	ug/mlm
19)	Pristane	14.055	169917	28.161	ug/mlm
20)	n-C18	15.090	172467	28.730	ug/mlm
21)	Phytane	15.251	133144	25.558	ug/mlm
22)	n-C19	16.307	174026	29.209	ug/mlm
24)	n-C20	17.571	171922	28.553	ug/mlm
25)	n-C21	18.859	174569	28.278	ug/mlm
26)	n-C22	20.154	173137	28.531	ug/mlm
27)	n-C23	21.439	171292	28.428	ug/mlm
28)	n-C24	22.701	169715	28.284	ug/mlm
29)	n-C25	23.933	155996	26.191	ug/mlm
30)	n-C26	25.134	170874	28.390	ug/mlm
31)	n-C27	26.304	169218	28.553	ug/mlm
32)	n-C28	27.434	167824	28.462	ug/mlm
33)	n-C29	28.533	166072	28.585	ug/mlm
35)	n-C30	29.598	166004	28.636	ug/mlm
36)	n-C31	30.630	159869	28.481	ug/mlm
37)	n-C32	31.630	159153	27.981	ug/mlm
38)	n-C33	32.602	149570	27.823	ug/mlm
39)	n-C34	33.548	153934	28.071	ug/mlm
40)	n-C35	34.503	148532	27.168	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.590	152414	27.096	ug/mlm
42)	n-C37	36.831	132975	24.987	ug/mlm
43)	n-C38	38.274	126886	23.715	ug/mlm
44)	n-C39	39.963	120492	22.624	ug/mlm
45)	n-C40	41.951	117946	22.296	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

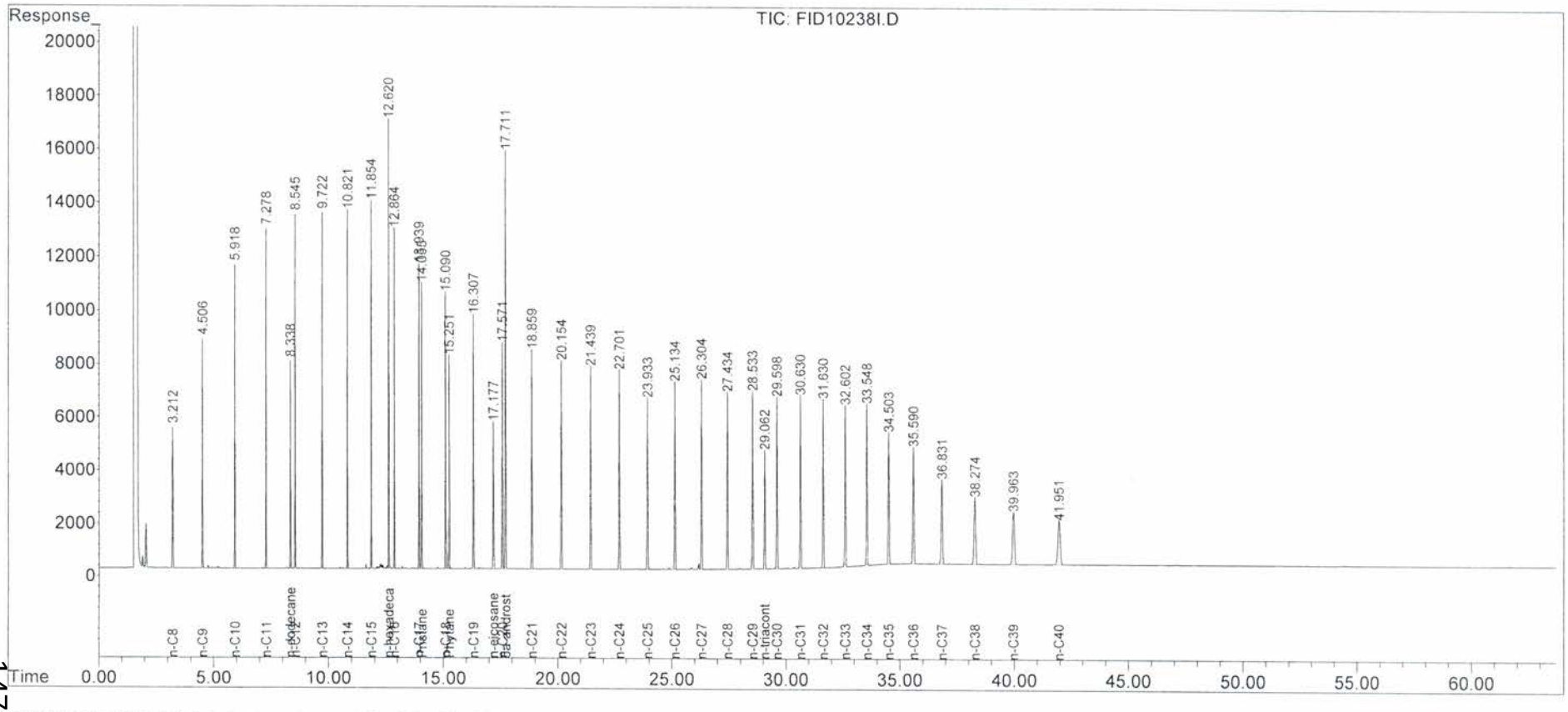
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	100	0.00
2		n-C8	0.972	0.954	1.9	98	0.00
3		n-C9	1.020	0.991	2.8	98	0.00
4		n-C10	1.066	1.038	2.6	98	0.00
5		n-C11	1.097	1.072	2.3	98	0.00
6	S	n-dodecane-d26	0.972	0.952	2.1	99	0.00
7		n-C12	1.147	1.121	2.3	98	0.00
10		n-C13	1.168	1.146	1.9	98	0.00
12		n-C14	1.185	1.169	1.4	98	0.00
14		n-C15	1.210	1.189	1.7	98	0.00
15		n-C16	1.215	1.202	1.1	99	0.00
16	I	5a-androstane	1.000	1.000	0.0	99	0.00
18		n-C17	0.978	0.971	0.7	99	0.00
19		Pristane	0.970	0.963	0.7	99	0.00
20		n-C18	0.965	0.960	0.5	99	0.00
21		Phytane	0.838	0.832	0.7	99	0.00
22		n-C19	0.958	0.953	0.5	99	0.00
23	S	n-eicosane-d42	0.825	0.827	-0.2	101	0.00
24		n-C20	0.968	0.965	0.3	99	0.00
25		n-C21	0.993	0.987	0.6	99	0.00
26		n-C22	0.976	0.971	0.5	99	0.00
27		n-C23	0.969	0.964	0.5	99	0.00
28		n-C24	0.965	0.958	0.7	98	-0.01
29		n-C25	0.958	0.952	0.6	98	-0.01
30		n-C26	0.968	0.961	0.7	98	-0.01
31		n-C27	0.953	0.945	0.8	98	-0.01
32		n-C28	0.948	0.940	0.8	98	-0.01
33		n-C29	0.934	0.928	0.6	98	0.00
34	S	n-triacontane-d62	0.730	0.732	-0.3	101	-0.01
35		n-C30	0.932	0.925	0.8	98	0.00
36		n-C31	0.902	0.898	0.4	99	-0.01
37		n-C32	0.914	0.909	0.5	99	0.00
38		n-C33	0.864	0.863	0.1	99	-0.01
39		n-C34	0.882	0.881	0.1	99	-0.01
40		n-C35	0.879	0.876	0.3	99	-0.02
41		n-C36	0.904	0.907	-0.3	99	-0.01
42		n-C37	0.856	0.858	-0.2	99	-0.03
43		n-C38	0.860	0.866	-0.7	99	-0.02

44	n-C39	0.856	0.864	-0.9	99	-0.02
45	n-C40	0.850	0.859	-1.1	99	-0.03

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Mon Aug 25 11:11:48 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.620	260844	50.000	ug/mlm
16) I	5a-androstane	17.710	328127	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.338	124118	24.468	ug/mlm
23) S	n-eicosane-d42	17.178	134709	24.892	ug/mlm
34) S	n-triacontane-d62	29.062	121844	25.471	ug/mlm
	Target Compounds				
2)	n-C8	3.210	124773	24.597	ug/mlm
3)	n-C9	4.507	129846	24.408	ug/mlm
4)	n-C10	5.919	135430	24.350	ug/mlm
5)	n-C11	7.278	140010	24.460	ug/mlm
7)	n-C12	8.545	146263	24.433	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	9.722	150223	24.661	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.821	152487	24.658	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.854	155542	24.641	ug/mlm
15)	n-C16	12.865	156929	24.761	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.939	159971	24.949	ug/mlm
19)	Pristane	14.055	158314	24.888	ug/mlm
20)	n-C18	15.089	158120	24.984	ug/mlm
21)	Phytane	15.249	140789	25.635	ug/mlm
22)	n-C19	16.307	162012	25.793	ug/mlm
24)	n-C20	17.570	158758	25.010	ug/mlm
25)	n-C21	18.859	162470	24.964	ug/mlm
26)	n-C22	20.154	159429	24.920	ug/mlm
27)	n-C23	21.438	158490	24.950	ug/mlm
28)	n-C24	22.700	157588	24.911	ug/mlm
29)	n-C25	23.934	156481	24.920	ug/mlm
30)	n-C26	25.136	157824	24.873	ug/mlm
31)	n-C27	26.301	155239	24.846	ug/mlm
32)	n-C28	27.434	154162	24.800	ug/mlm
33)	n-C29	28.534	152240	24.856	ug/mlm
35)	n-C30	29.597	151793	24.837	ug/mlm
36)	n-C31	30.628	151276	25.563	ug/mlm
37)	n-C32	31.631	149624	24.952	ug/mlm
38)	n-C33	32.602	141397	24.949	ug/mlm
39)	n-C34	33.549	144656	25.022	ug/mlm
40)	n-C35	34.507	143731	24.937	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.588	148759	25.085	ug/mlm
42)	n-C37	36.827	145003	25.844	ug/mlm
43)	n-C38	38.279	142599	25.280	ug/mlm
44)	n-C39	39.967	142337	25.351	ug/mlm
45)	n-C40	41.968	140912	25.267	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

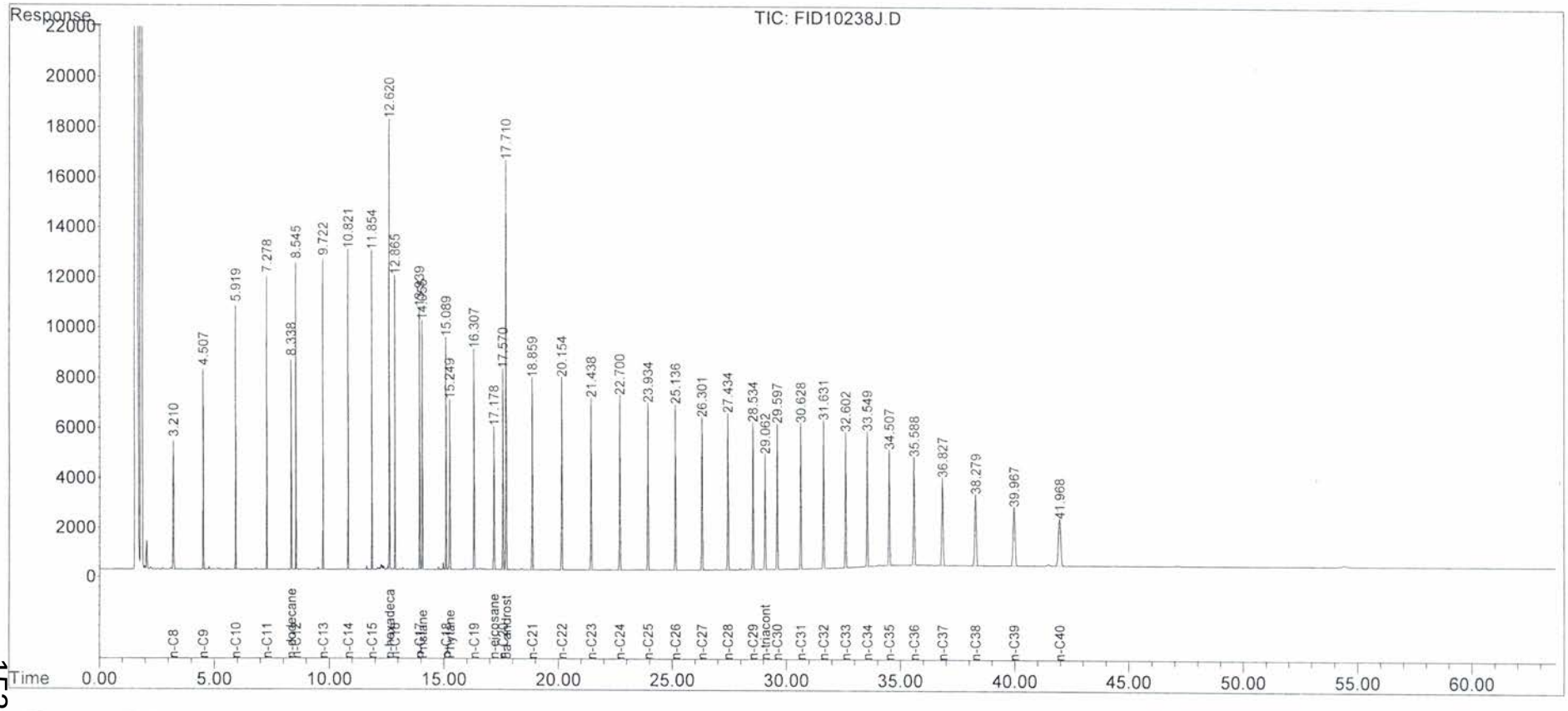
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Aliphatic Mass Discrimination Ratio

Arcadis Mayflower AR Client Project # B0086022.1401

Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data

Mass Discrimination

File Name	Sample Name	n-C20 (Area)	n-C36 (Area)	n-C36/n-C20 ratio	Q
FID10238C.D	AL-WKC1-1.25-021	7996	7301	0.91	
FID10238D.D	AL-WKC2-10-021	61621	58180	0.94	
FID10238E.D	AL-WKC3-25-021	161051	150184	0.93	
FID10238F.D	AL-WKC4-40-021	244058	227882	0.93	
FID10238G.D	AL-WKC5-50-021	310890	293172	0.94	
FID10238H.D	AL-WKC6-100-003	601436	556026	0.92	
FID10238I.D	AL-WKICV-25-005	171922	152414	0.89	
FID10238J.D	AL-WKCC-25-030	158758	148759	0.94	
FID10240B.D	AL-WKCC-25-030	165852	153517	0.93	
FID10240G.D	AL-WKCC-25-030	160131	150238	0.94	

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

Aliphatic Internal Standard Area Data

B&B Laboratories
Project J13034
Report 14-3305

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

Client Project # B0086022.1401

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)
FID10238E.D	**AL-WKC3-25-021**	**262074**	**131037**	**524148**	**330976**	**165488**	**661952**
FID10238I.D	**AL-WKICV-25-005**	**245826**	**122913**	**491652**	**311242**	**155621**	**622484**
FID10238J.D	**AL-WKCC-25-030**	**260844**	**130422**	**521688**	**328127**	**164064**	**656254**
FID10240B.D	**AL-WKCC-25-030**	**269503**	**134752**	**539006**	**341748**	**170874**	**683496**
FID10240C.D	AL-SRM2779-20-003	226391			359431		
FID10240F.D	Al-WKPEM-003	239664			308233		
ENV3335A.D	Method Blank	213817			274233		
ENV3335B.D	Blank Spike	226360			289970		
ENV3335C.D	Blank Spike Dupl	217439			278251		
ARC2050.D	SHN-Cove-005(B)090314	213023			272681		
FID10240G.D	**AL-WKCC-25-030**	**260373**	**130187**	**520746**	**330616**	**165308**	**661232**

Polycyclic Aromatic Hydrocarbon
Initial Calibration Data
and
Initial Calibration Verification Data

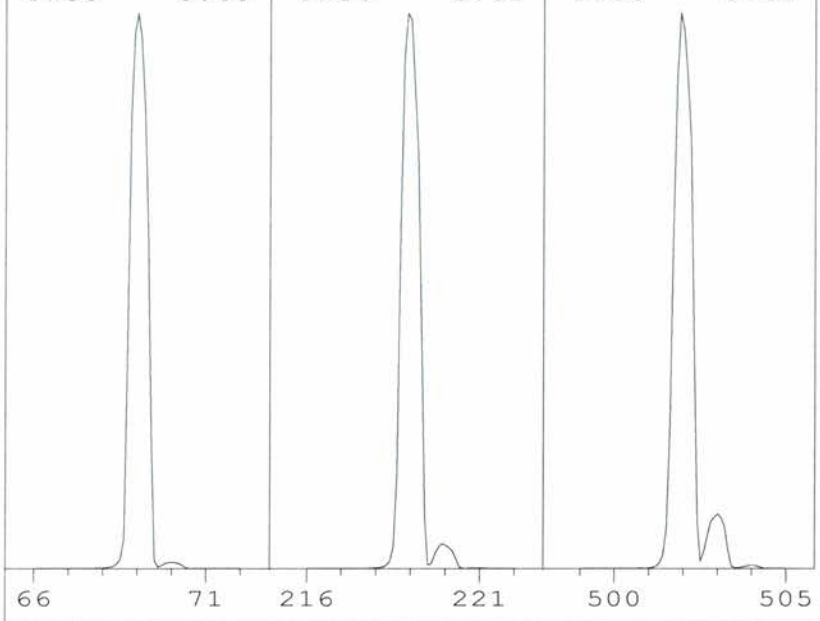
PAH ICAL
AR 50226.M

GC/MS 5
(PAH-2014)

Autotune

Sat Sep 06 15:42:25 2014 Instrument: GCMS5
C:\MSDCHEM\1\5975\atune.u US83141113

Mass	69.00	Mass	218.90	Mass	501.90
Ab	422485	Ab	438816	Ab	40504
Pw50	0.60	Pw50	0.61	Pw50	0.61

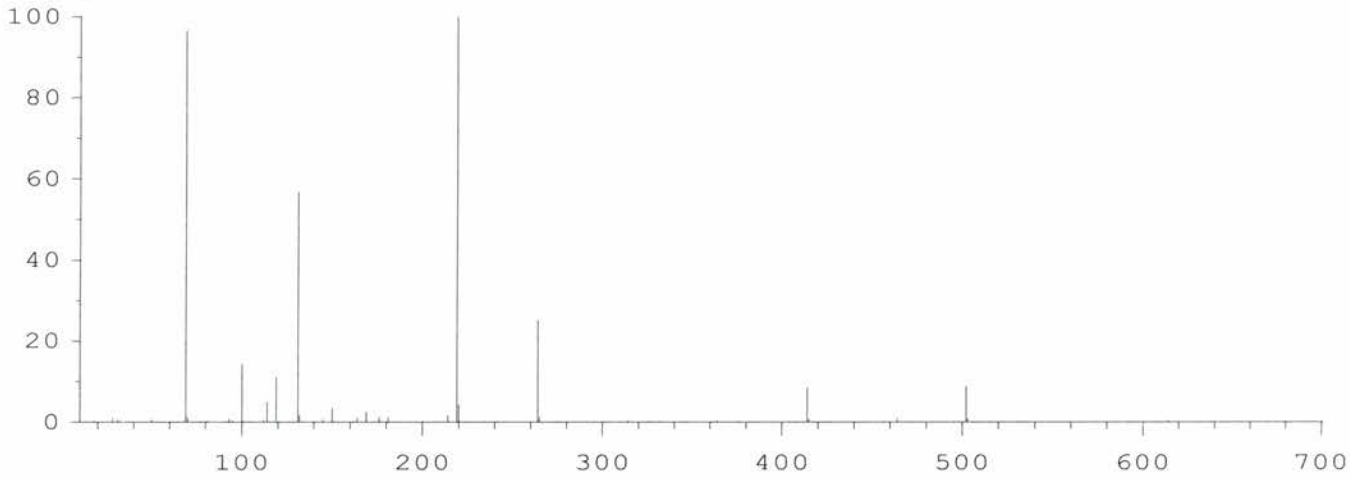


Ion Pol	Pos	MassGain	-602
		MassOffs	-37
Emission	34.6	AmuGain	1985
EIEnrgy	69.9	AmuOffs	123.19
Filament	1	Wid219	-0.017
		DC Pol	Neg
Repeller	23.92		
IonFcus	90.2	HEDEnab	On
EntLens	32.0	EMVolts	1765
EntOffs	17.57		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	230	Turbo Speed	100
MS Quad	150	HiVac	0.00e+00

Scan: 10.00 - 701.00 Samples: 8 Thresh: 100 Step: 0.10
102 peaks Base: 219.00 Abundance: 421952



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	407936	100.00	70.00	4599	1.13
219.00	421952	103.44	220.00	18752	4.44
502.10	37712	9.24	503.00	3994	10.59

Air/Water Check: H2O~0.32% N2~0.97% O2~0.38% CO2~0.04% N2/H2O~306.66%

Column(1) Flow: 0 Column(2): 1.39 ml/min. Interface Temp: 290

Ramp Criteria:

Ion Focus Maximum	90	volts using ion	502;	EM Gain	40396
Repeller Maximum	35	volts using ion	219;	Gain Factor	0.40

MassGain Values(Samples): -589(3) -581(2) -573(1) -550(0) -463(FS)

TARGET MASS:	50	69	131	219	414	502	1050
Amu Offset:	123.2	123.2	123.2	123.2	123.2	123.2	123.2
Entrance Lens Offset:	17.6	17.6	17.6	17.6	17.6	17.6	17.6

MS5596
YM

Response Factor Report GCMS5

Method Path : C:\GCMS5\MS50226\
Method File : AR50226.M
Title : PAH Calibration Table-2013A
Last Update : Mon Sep 08 07:05:23 2014
Response Via : Initial Calibration

Calibration Files
1 =MS50226B.D 2 =MS50226C.D 3 =MS50226D.D 4 =MS50226E.D
5 =MS50226F.D 6 =MS50226G.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorene-d10	ISTD							
2)	S	Naphthalene-d8	1.522	1.597	1.632	1.675	1.745	1.713	1.647	4.93
3)	T	cis/trans Decalin	0.380	0.383	0.379	0.386	0.395	0.387	0.385	1.47
4)	un	C1-Decalins	0.380	0.383	0.379	0.386	0.395	0.387	0.385	1.47
5)	un	C2-Decalins	0.380	0.383	0.379	0.386	0.395	0.387	0.385	1.47
6)	un	C3-Decalins	0.380	0.383	0.379	0.386	0.395	0.387	0.385	1.47
7)	un	C4-Decalins	0.380	0.383	0.379	0.386	0.395	0.387	0.385	1.47
8)	T	Naphthalene	1.768	1.836	1.890	1.941	2.016	1.964	1.903	4.76
9)	T	2-Methylnaphth...	1.213	1.271	1.307	1.346	1.414	1.406	1.326	5.93
10)	T	1-Methylnaphth...	1.102	1.154	1.178	1.219	1.276	1.252	1.197	5.42
11)	T	2,6-Dimethylna...	1.075	1.130	1.163	1.209	1.278	1.278	1.189	6.89
12)	T	1,6,7-Trimethy...	1.007	1.053	1.078	1.126	1.194	1.198	1.109	6.96
13)	un	C2-Naphthalenes	1.768	1.836	1.890	1.941	2.016	1.964	1.903	4.76
14)	un	C3-Naphthalenes	1.768	1.836	1.890	1.941	2.016	1.964	1.903	4.76
15)	un	C4-Naphthalenes	1.768	1.836	1.890	1.941	2.016	1.964	1.903	4.76
16)	T	Benzothiophene	1.417	1.481	1.517	1.560	1.623	1.587	1.531	4.90
17)	un	C1-Benzothioph...	1.417	1.481	1.517	1.560	1.623	1.587	1.531	4.90
18)	un	C2-Benzothioph...	1.417	1.481	1.517	1.560	1.623	1.587	1.531	4.90
19)	un	C3-Benzothioph...	1.417	1.481	1.517	1.560	1.623	1.587	1.531	4.90
20)	un	C4-Benzothioph...	1.417	1.481	1.517	1.560	1.623	1.587	1.531	4.90
21)	S	Acenaphthene-d10	0.913	0.959	0.981	1.020	1.073	1.060	1.001	6.17
22)	T	Biphenyl	1.556	1.641	1.682	1.741	1.812	1.761	1.699	5.44
23)	T	Acenaphthylene	1.680	1.733	1.758	1.827	1.948	2.023	1.828	7.27
24)	T	Acenaphthene	1.028	1.093	1.128	1.180	1.240	1.216	1.148	6.98
25)	T	Dibenzofuran	1.648	1.756	1.809	1.884	1.965	1.915	1.830	6.34
26)	T	Fluorene	1.285	1.361	1.384	1.442	1.517	1.500	1.415	6.26
27)	T	1-Methylfluorene	0.724	0.761	0.769	0.811	0.868	0.901	0.806	8.45
28)	un	C1-Fluorenes	1.285	1.361	1.384	1.442	1.517	1.500	1.415	6.26
29)	un	C2-Fluorenes	1.285	1.361	1.384	1.442	1.517	1.500	1.415	6.26
30)	un	C3-Fluorenes	1.285	1.361	1.384	1.442	1.517	1.500	1.415	6.26
31)	I	Pyrene-d10	ISTD							
32)	S	Phenanthrene-d10	0.856	0.903	0.943	0.998	1.048	1.031	0.963	7.82
33)	T	Carbazole	0.884	0.958	0.996	1.065	1.151	1.174	1.038	10.90
34)	T	Dibenzothiophene	1.004	1.084	1.136	1.201	1.263	1.236	1.154	8.54
35)	T	4-Methyldibenz...	0.653	0.702	0.737	0.784	0.832	0.826	0.756	9.42
36)	un	2/3-Methyldibe...	0.653	0.702	0.737	0.784	0.832	0.826	0.756	9.42
37)	un	1-Methyldibenz...	0.653	0.702	0.737	0.784	0.832	0.826	0.756	9.42
38)	un	C2-Dibenzothio...	1.004	1.084	1.136	1.201	1.263	1.236	1.154	8.54
39)	un	C3-Dibenzothio...	1.004	1.084	1.136	1.201	1.263	1.236	1.154	8.54
40)	un	C4-Dibenzothio...	1.004	1.084	1.136	1.201	1.263	1.236	1.154	8.54
41)	T	Phenanthrene	1.030	1.120	1.185	1.252	1.311	1.261	1.193	8.72
42)	T	Anthracene	0.920	1.008	1.063	1.140	1.219	1.237	1.098	11.28
43)	un	3-Methylphenan...	0.786	0.829	0.864	0.921	0.984	0.997	0.897	9.50
44)	un	2-Methylphenan...	0.786	0.829	0.864	0.921	0.984	0.997	0.897	9.50
45)	un	2-Methylanthra...	0.786	0.829	0.864	0.921	0.984	0.997	0.897	9.50
46)	un	4/9-Methylphen...	0.786	0.829	0.864	0.921	0.984	0.997	0.897	9.50
47)	T	1-Methylphenan...	0.786	0.829	0.864	0.921	0.984	0.997	0.897	9.50
48)	T	3,6-Dimethylph...	0.658	0.706	0.724	0.772	0.835	0.864	0.760	10.38
49)	T	Retene	0.349	0.372	0.385	0.411	0.449	0.468	0.406	11.25
50)	un	C2-Phenanthren...	1.030	1.120	1.185	1.252	1.311	1.261	1.193	8.72
51)	un	C3-Phenanthren...	1.030	1.120	1.185	1.252	1.311	1.261	1.193	8.72
52)	un	C4-Phenanthren...	1.030	1.120	1.185	1.252	1.311	1.261	1.193	8.72
53)	T	Naphthobenzoth...	0.988	1.049	1.074	1.138	1.239	1.286	1.129	10.19
54)	un	C1-Naphthobenz...	0.988	1.049	1.074	1.138	1.239	1.286	1.129	10.19
55)	un	C2-Naphthobenz...	0.988	1.049	1.074	1.138	1.239	1.286	1.129	10.19
56)	un	C3-Naphthobenz...	0.988	1.049	1.074	1.138	1.239	1.286	1.129	10.19

Method Path : C:\GCMS5\MS50226\
Method File : AR50226.M
Title : PAH Calibration Table-2013A

57)	un	C4-Naphthobenz...	0.988	1.049	1.074	1.138	1.239	1.286	1.129	10.19
58)	T	Fluoranthene	1.099	1.179	1.225	1.300	1.414	1.411	1.271	10.03
59)	T	Pyrene	1.269	1.338	1.375	1.443	1.528	1.501	1.409	7.06
60)	T	2-Methylfluora...	0.724	0.762	0.783	0.830	0.906	0.950	0.826	10.55
61)	T	Benzo(b)fluorene	0.696	0.735	0.759	0.810	0.889	0.946	0.806	11.92
62)	un	C1-Fluoranthen...	1.099	1.179	1.225	1.300	1.414	1.411	1.271	10.03
63)	un	C2-Fluoranthen...	1.099	1.179	1.225	1.300	1.414	1.411	1.271	10.03
64)	un	C3-Fluoranthen...	1.099	1.179	1.225	1.300	1.414	1.411	1.271	10.03
65)	un	C4-Fluoranthen...	1.099	1.179	1.225	1.300	1.414	1.411	1.271	10.03
66)	S	Chrysene-d12	0.939	1.017	1.072	1.161	1.261	1.238	1.114	11.43
67)	T	Benz(a)anthracene	1.041	1.088	1.117	1.184	1.327	1.409	1.195	12.10
68)	T	Chrysene/Triph...	1.052	1.142	1.211	1.305	1.418	1.415	1.257	11.82
69)	un	C1-Chrysenes	1.052	1.142	1.211	1.305	1.418	1.415	1.257	11.82
70)	un	C2-Chrysenes	1.052	1.142	1.211	1.305	1.418	1.415	1.257	11.82
71)	un	C3-Chrysenes	1.052	1.142	1.211	1.305	1.418	1.415	1.257	11.82
72)	un	C4-Chrysenes	1.052	1.142	1.211	1.305	1.418	1.415	1.257	11.82
73)	I	Benzo(a)pyrene-d12	----------ISTD----------							
74)	un	C29-Hopane	0.553	0.557	0.559	0.570	0.595	0.592	0.571	3.19
75)	un	18a-Oleanane	0.553	0.557	0.559	0.570	0.595	0.592	0.571	3.19
76)	T	C30-Hopane	0.553	0.557	0.559	0.570	0.595	0.592	0.571	3.19
77)	T	Benzo(b)fluora...	1.198	1.255	1.275	1.332	1.434	1.453	1.324	7.70
78)	T	Benzo(k,j)fluo...	1.212	1.272	1.317	1.412	1.536	1.528	1.379	9.78
79)	un	Benzo(a)fluora...	1.212	1.272	1.317	1.412	1.536	1.528	1.379	9.78
80)	T	Benzo(e)pyrene	1.398	1.515	1.536	1.619	1.718	1.716	1.584	7.90
81)	T	Benzo(a)pyrene	1.200	1.271	1.303	1.379	1.487	1.531	1.362	9.44
82)	T	Indeno(1,2,3-c...	1.368	1.455	1.513	1.609	1.775	1.899	1.603	12.56
83)	T	Dibenzo(a,h)an...	1.046	1.130	1.209	1.283	1.445	1.549	1.277	14.94
84)	un	C1-Dibenzo(a,h...	1.046	1.130	1.209	1.283	1.445	1.549	1.277	14.94
85)	un	C2-Dibenzo(a,h...	1.046	1.130	1.209	1.283	1.445	1.549	1.277	14.94
86)	un	C3-Dibenzo(a,h...	1.046	1.130	1.209	1.283	1.445	1.549	1.277	14.94
87)	T	Benzo(g,h,i)pe...	1.291	1.353	1.377	1.439	1.549	1.618	1.438	8.65
88)	S	Perylene-d12	1.048	1.126	1.159	1.237	1.333	1.365	1.212	10.17
89)	T	Perylene	1.396	1.461	1.500	1.591	1.717	1.721	1.564	8.66
90)	S	5(b)H-Cholane	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36
91)	un	C20-TAS	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36
92)	un	C21-TAS	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36
93)	un	C26(20S)-TAS	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36
94)	un	C26(20R)/C27(2...	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36
95)	un	C28(20S)-TAS	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36
96)	un	C27(20R)-TAS	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36
97)	un	C28(20R)-TAS	0.288	0.295	0.297	0.312	0.334	0.332	0.310	6.36

(#) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226B.D
Acq On : 6 Sep 2014 8:20 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 08 06:32:29 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Sun Sep 07 09:33:19 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	239011	251.05		0.00
31) Pyrene-d10	29.446	212	419708	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	366378	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.638	136	28994	18.49		0.01
21) Acenaphthene-d10	19.470	164	17388	18.24		0.00
32) Phenanthrene-d10	24.569	188	28690	17.79		0.01
66) Chrysene-d12	33.630	240	31441	16.85		0.00
88) Perylene-d12	38.471	264	30684	17.30		0.00
90) 5(b)H-Cholane	34.035	217	8442	18.63		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.993	138	7171m	31.05		
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	13.701	128	33189	18.32		97
9) 2-Methylnaphthalene	15.937	142	22930	18.16		94
10) 1-Methylnaphthalene	16.271	142	20883	18.32		94
11) 2,6-Dimethylnaphthalene	18.029	156	20446	18.06		90
12) 1,6,7-Trimethylnaphtha...	20.872	170	19219	18.20		88
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	13.869	134	26900	18.46		100
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	17.508	154	29534	18.26		90
23) Acenaphthylene	18.982	152	31957	18.36		97
24) Acenaphthene	19.572	154	19683	18.02		94
25) Dibenzofuran	20.168	168	31324	17.98		100
26) Fluorene	21.335	166	24128	17.91		96
27) 1-Methylfluorene	23.321	180	13888	18.11		91
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	25.397	167	29525	16.98		100
34) Dibenzothiophene	24.217	184	33252	17.21		96
35) 4-Methyldibenzothiophene	25.714	198	22006	17.39		100
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	24.637	178	34396	17.21		99
42) Anthracene	24.818	178	30858	16.78		94
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226B.D
Acq On : 6 Sep 2014 8:20 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 08 06:32:29 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Sun Sep 07 09:33:19 2014
Response via : Initial Calibration

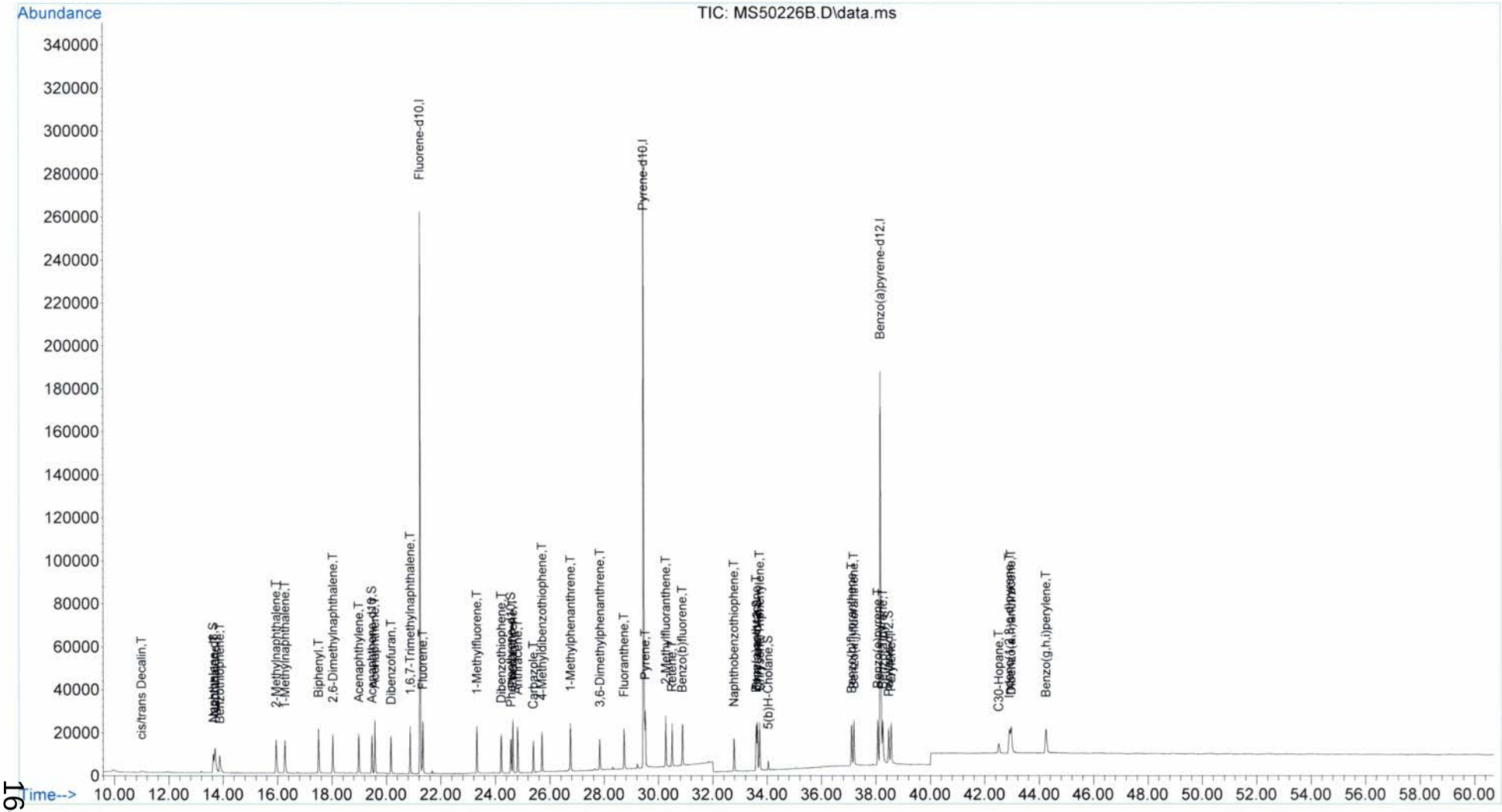
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.758	192	26129	17.40			94
48)	3,6-Dimethylphenanthrene	27.835	206	22087	17.36			89
49)	Retene	30.498	234	11714	17.24		#	39
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
53)	Naphthobenzothiophene	32.773	234	33279	17.60			100
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	28.723	202	37061	17.41		#	100
59)	Pyrene	29.512	202	42550	18.03		#	100
60)	2-Methylfluoranthene	30.268	216	24283	17.56		#	100
61)	Benzo(b)fluorene	30.876	216	23410	17.35			98
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	33.599	228	34516	17.25			96
68)	Chrysene/Triphenylene	33.724	228	34934	16.59			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	42.513	191	16190	19.37			100
77)	Benzo(b)fluoranthene	37.111	252	34922	18.02			100
78)	Benzo(k,j)fluoranthene	37.194	252	35536	17.60			100
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.069	252	41051	17.71			99
81)	Benzo(a)pyrene	38.249	252	35081	17.60			100
82)	Indeno(1,2,3-c,d)pyrene	42.901	276	40054	17.07			100
83)	Dibenzo(a,h)anthracene	42.964	278	30368	16.25			90
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	44.246	276	37263	17.70			95
89)	Perylene	38.554	252	40853	17.84		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226B.D
Acq On : 6 Sep 2014 8:20 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 08 06:32:29 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Sun Sep 07 09:33:19 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226C.D
Acq On : 6 Sep 2014 9:27 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 08 06:38:41 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:33:10 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	238162	251.05		0.00
31) Pyrene-d10	29.446	212	415978	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	366233	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	151614	105.01		-0.01
21) Acenaphthene-d10	19.470	164	91082	105.21		0.00
32) Phenanthrene-d10	24.558	188	150052	105.62		-0.01
66) Chrysene-d12	33.630	240	168766	108.33		0.00
88) Perylene-d12	38.471	264	164772	107.46		0.00
90) 5(b)H-Cholane	34.035	217	43109	102.17		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.993	138	35931m	99.56		
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	13.701	128	171722	102.40		97
9) 2-Methylnaphthalene	15.937	142	119730	104.07		93
10) 1-Methylnaphthalene	16.271	142	108903	104.15		94
11) 2,6-Dimethylnaphthalene	18.029	156	107052	104.99		87
12) 1,6,7-Trimethylnaphtha...	20.872	170	100068	104.71		93
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	13.869	134	140064	104.19		100
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	17.496	154	155200	105.16		95
23) Acenaphthylene	18.982	152	164244	103.05		97
24) Acenaphthene	19.572	154	104321	107.02		94
25) Dibenzofuran	20.168	168	166278	106.33		100
26) Fluorene	21.335	166	127259	104.38		96
27) 1-Methylfluorene	23.321	180	72723	105.89		94
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	25.397	167	158518	108.02		100
34) Dibenzothiophene	24.217	184	177899	106.77		95
35) 4-Methyldibenzothiophene	25.714	198	117304	108.26		100
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	24.637	178	185304	108.39		99
42) Anthracene	24.818	178	167451	109.61		94
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226C.D
Acq On : 6 Sep 2014 9:27 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 08 06:38:41 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:33:10 2014
Response via : Initial Calibration

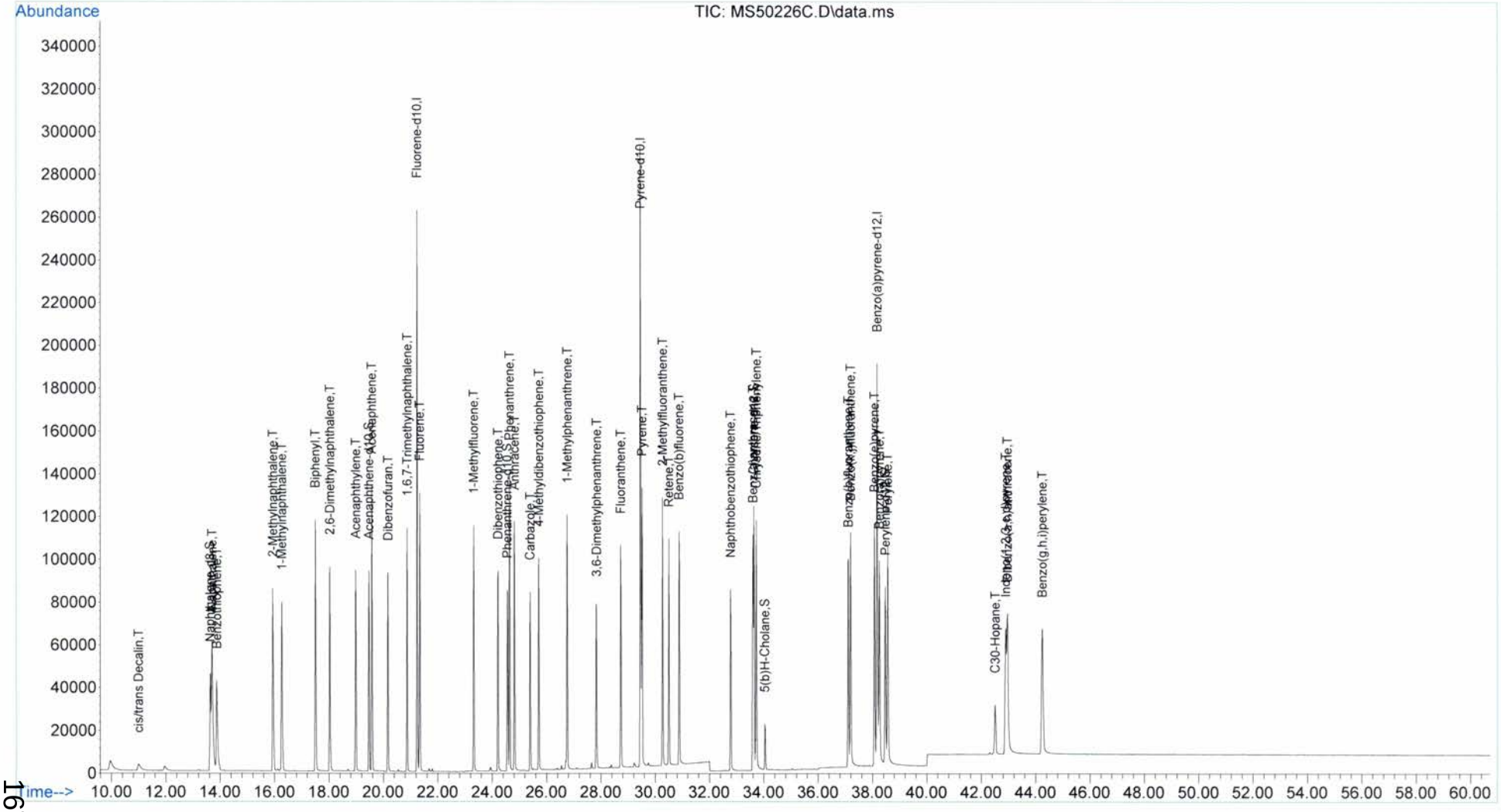
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.758	192	136657	104.80			94
48) 3,6-Dimethylphenanthrene	27.835	206	117492	107.58			86
49) Retene	30.498	234	61873	106.68		#	38
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.774	234	174996	106.70			100
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	28.723	202	196983	108.01		#	100
59) Pyrene	29.512	202	222338	105.55		#	100
60) 2-Methylfluoranthene	30.268	216	126596	105.31		#	100
61) Benzo(b)fluorene	30.876	216	122478	106.06			98
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.599	228	178856	103.52			96
68) Chrysene/Triphenylene	33.724	228	187904	107.56			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	42.513	191	81463	100.67			100
77) Benzo(b)fluoranthene	37.111	252	182870	104.35			99
78) Benzo(k,j)fluoranthene	37.194	252	186441	105.18			99
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.069	252	222280	108.66			99
81) Benzo(a)pyrene	38.249	252	185736	105.83			99
82) Indeno(1,2,3-c,d)pyrene	42.901	276	212863	106.33			100
83) Dibenzo(a,h)anthracene	42.964	278	163951	107.15			90
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	44.246	276	195185	103.34			95
89) Perylene	38.555	252	213787	104.70		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226C.D
Acq On : 6 Sep 2014 9:27 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 08 06:38:41 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:33:10 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226D.D
Acq On : 6 Sep 2014 10:34 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 08 06:46:34 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Sun Sep 07 09:31:07 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	238726	251.05		0.00
31) Pyrene-d10	29.446	212	407136	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	358186	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	388204	261.75		0.00
21) Acenaphthene-d10	19.470	164	233292	262.10		0.00
32) Phenanthrene-d10	24.557	188	383268	268.22		0.00
66) Chrysene-d12	33.630	240	435228	274.05		0.00
88) Perylene-d12	38.471	264	414740	266.63		0.00
90) 5(b)H-Cholane	34.035	217	106199	254.59		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.993	138	89251m	402.69		
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	13.701	128	443091	258.61		97
9) 2-Methylnaphthalene	15.937	142	308476	261.22		93
10) 1-Methylnaphthalene	16.271	142	278761	259.89		94
11) 2,6-Dimethylnaphthalene	18.029	156	276206	263.53		86
12) 1,6,7-Trimethylnaphtha...	20.872	170	256828	262.21		95
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	13.869	134	359464	260.90		100
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	17.496	154	398555	262.23		95
23) Acenaphthylene	18.982	152	417624	257.35		97
24) Acenaphthene	19.572	154	269874	267.66		94
25) Dibenzofuran	20.159	168	429113	265.09		100
26) Fluorene	21.335	166	324475	257.95		95
27) 1-Methylfluorene	23.321	180	184088	260.76		95
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	25.397	167	403255	269.51		100
34) Dibenzothiophene	24.217	184	456107	268.99		94
35) 4-Methyldibenzothiophene	25.714	198	301348	273.78		100
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	24.637	178	479715	274.72		99
42) Anthracene	24.818	178	432146	275.91		94
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226D.D
Acq On : 6 Sep 2014 10:34 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 08 06:46:34 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Sun Sep 07 09:31:07 2014
Response via : Initial Calibration

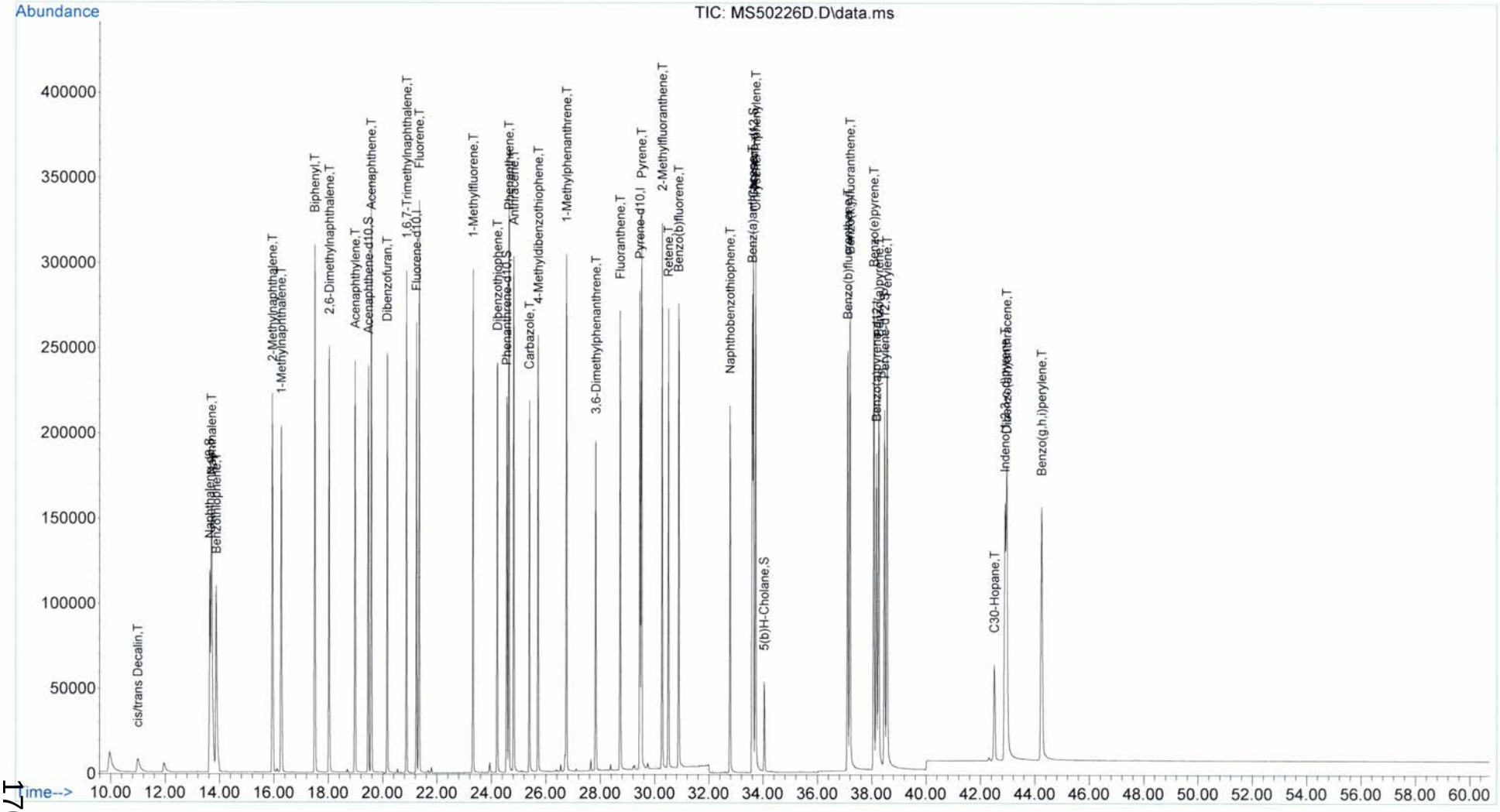
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.758	192	348231	265.50			93
48)	3,6-Dimethylphenanthrene	27.835	206	294774	266.00			87
49)	Retene	30.498	234	156533	266.97		#	38
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53)	Naphthobenzothiophene	32.773	234	438488	265.05			100
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	28.723	202	500839	270.75		#	100
59)	Pyrene	29.512	202	559057	263.98		#	100
60)	2-Methylfluoranthene	30.268	216	318226	263.60		#	100
61)	Benzo(b)fluorene	30.876	216	309525	266.43			98
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.599	228	449258	259.74			97
68)	Chrysene/Triphenylene	33.724	228	487220	273.29			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	42.512	191	200034	251.91			100
77)	Benzo(b)fluoranthene	37.111	252	454179	258.82			100
78)	Benzo(k,j)fluoranthene	37.194	252	472230	265.79			100
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.069	252	551146	264.46			99
81)	Benzo(a)pyrene	38.249	252	465659	263.46			99
82)	Indeno(1,2,3-c,d)pyrene	42.901	276	541093	267.88			100
83)	Dibenzo(a,h)anthracene	42.964	278	428897	275.57			90
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	44.246	276	485738	256.77			95
89)	Perylene	38.554	252	536756	262.61		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226D.D
Acq On : 6 Sep 2014 10:34 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 08 06:46:34 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Sun Sep 07 09:31:07 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226E.D
Acq On : 6 Sep 2014 11:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 08 06:57:08 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:46:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	232883	251.05		0.00
31) Pyrene-d10	29.446	212	395193	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	348720	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	777244	299.12		0.00
21) Acenaphthene-d10	19.470	164	473356	303.35		0.00
32) Phenanthrene-d10	24.557	188	787302	310.76		0.00
66) Chrysene-d12	33.630	240	915196	320.90		0.00
88) Perylene-d12	38.471	264	861787	313.53		0.00
90) 5(b)H-Cholane	34.035	217	217037	302.35		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.993	138	177111m	287.44		
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	13.701	128	887871	294.79		97
9) 2-Methylnaphthalene	15.937	142	620112	298.46		93
10) 1-Methylnaphthalene	16.271	142	562603	299.61		94
11) 2,6-Dimethylnaphthalene	18.029	156	560240	303.30		86
12) 1,6,7-Trimethylnaphtha...	20.872	170	523154	304.61		94
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.		
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.869	134	721522	298.66		100
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	17.496	154	804880	301.29		95
23) Acenaphthylene	18.982	152	846414	300.33		97
24) Acenaphthene	19.572	154	550471	308.37		93
25) Dibenzofuran	20.159	168	872113	304.74		100
26) Fluorene	21.335	166	659578	299.64		95
27) 1-Methylfluorene	23.321	180	378972	308.86		94
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	25.397	167	837514	314.84		100
34) Dibenzothiophene	24.217	184	936306	309.04		95
35) 4-Methyldibenzothiophene	25.714	198	621991	316.06		100
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	24.637	178	984464	312.79		100
42) Anthracene	24.818	178	899600	318.90		94
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226E.D
Acq On : 6 Sep 2014 11:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 08 06:57:08 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:46:49 2014
Response via : Initial Calibration

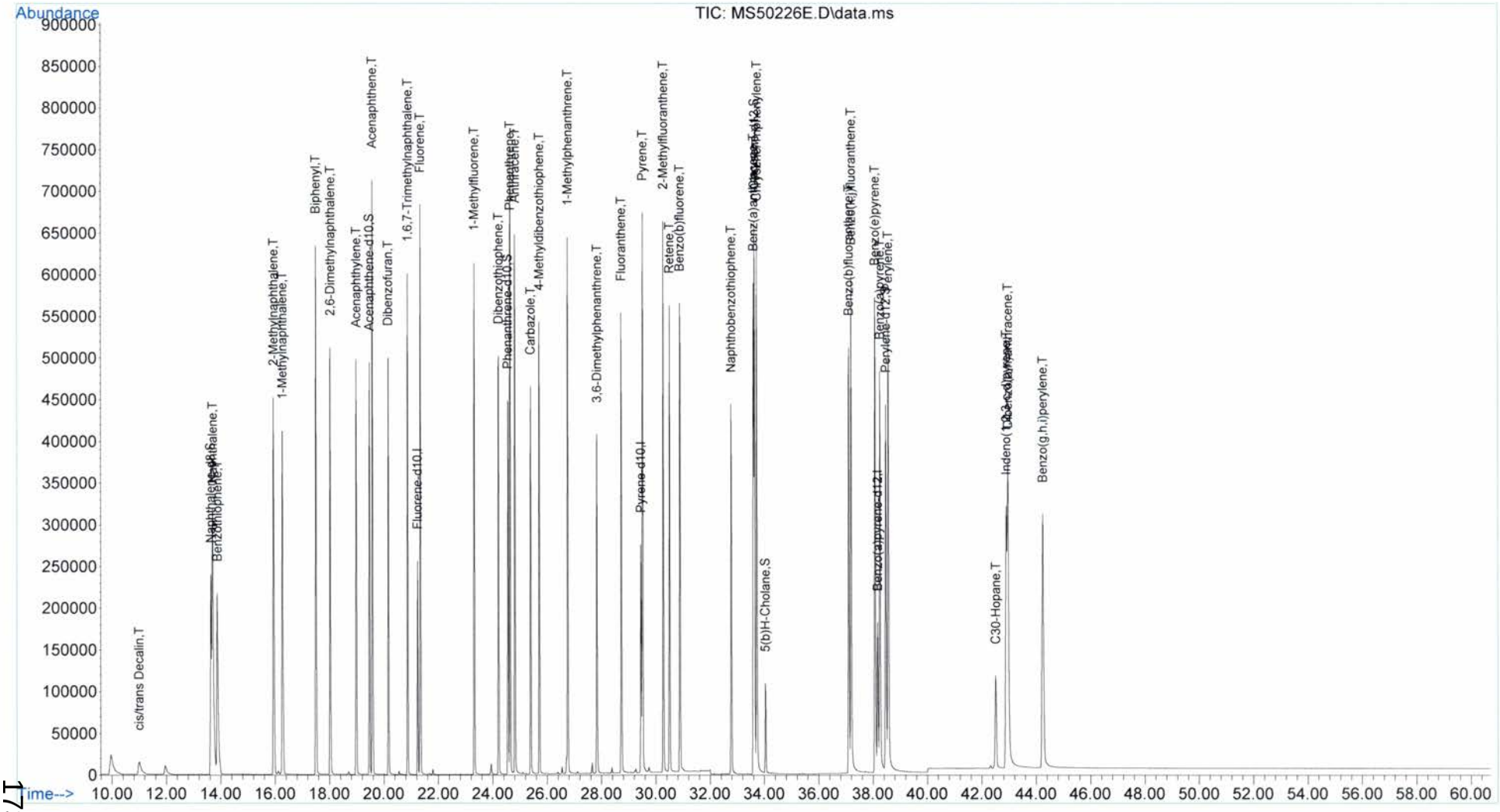
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.758	192	720952	310.57			93
48) 3,6-Dimethylphenanthrene	27.835	206	609902	313.37			87
49) Retene	30.498	234	324630	313.80		#	40
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.773	234	902117	311.55			100
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	28.723	202	1031917	314.59		#	100
59) Pyrene	29.512	202	1138708	306.83		#	100
60) 2-Methylfluoranthene	30.268	216	655289	309.98		#	100
61) Benzo(b)fluorene	30.876	216	641340	313.78			98
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.599	228	924447	305.79			97
68) Chrysene/Triphenylene	33.724	228	1020010	317.18			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	42.512	191	397242	292.31			100
77) Benzo(b)fluoranthene	37.110	252	923840	302.49			100
78) Benzo(k,j)fluoranthene	37.194	252	985591	314.08			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.068	252	1130815	309.92			99
81) Benzo(a)pyrene	38.249	252	959470	309.05			99
82) Indeno(1,2,3-c,d)pyrene	42.901	276	1120382	312.34			100
83) Dibenzo(a,h)anthracene	42.964	278	886216	312.81			90
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	44.246	276	988037	299.65			96
89) Perylene	38.554	252	1108180	309.12		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226E.D
Acq On : 6 Sep 2014 11:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 08 06:57:08 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:46:49 2014
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226F.D
Acq On : 7 Sep 2014 12:49 am
Operator : ECM(YMIAO)
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 08 06:59:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:57:37 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	231525	251.05		0.00
31) Pyrene-d10	29.446	212	395592	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	356931	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	1609710	584.93		0.00
21) Acenaphthene-d10	19.470	164	990467	596.20		0.00
32) Phenanthrene-d10	24.558	188	1654800	603.79		0.00
66) Chrysene-d12	33.630	240	1990051	636.91		0.00
88) Perylene-d12	38.471	264	1901298	623.06		0.00
90) 5(b)H-Cholane	34.035	217	476501	606.22		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.993	138	360305m	558.15		
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	13.691	128	1833450	574.78		98
9) 2-Methylnaphthalene	15.937	142	1295309	587.48		93
10) 1-Methylnaphthalene	16.260	142	1171147	587.32		97
11) 2,6-Dimethylnaphthalene	18.029	156	1177785	598.59		85
12) 1,6,7-Trimethylnaphtha...	20.872	170	1102884	602.55		96
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.		
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.869	134	1492105	582.75		100
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	17.496	154	1666324	586.59		94
23) Acenaphthylene	18.982	152	1794885	600.10		97
24) Acenaphthene	19.572	154	1150686	602.94		93
25) Dibenzofuran	20.159	168	1808832	592.07		100
26) Fluorene	21.335	166	1379456	588.09		95
27) 1-Methylfluorene	23.321	180	806809	615.02		94
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	25.397	167	1811273	625.36		100
34) Dibenzothiophene	24.217	184	1971001	599.92		94
35) 4-Methyldibenzothiophene	25.714	198	1321157	617.89		100
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	24.637	178	2063556	603.69		100
42) Anthracene	24.818	178	1926355	625.04		94
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226F.D
Acq On : 7 Sep 2014 12:49 am
Operator : ECM(YMIAO)
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 08 06:59:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:57:37 2014
Response via : Initial Calibration

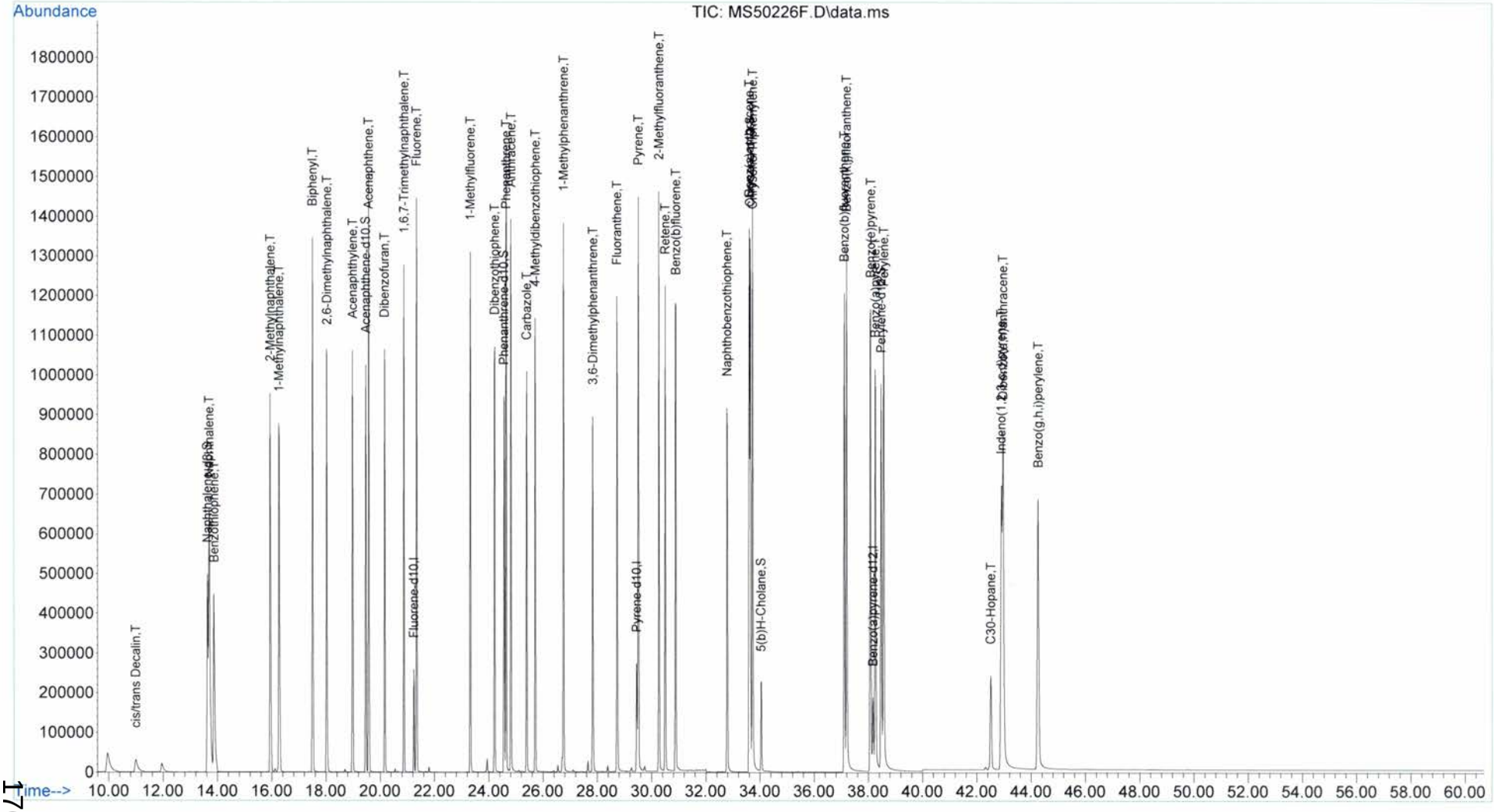
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.758	192	1542541	612.56			93
48) 3,6-Dimethylphenanthrene	27.835	206	1321149	625.82			87
49) Retene	30.498	234	708879	631.09		#	42
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.774	234	1966966	628.47			100
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	28.723	202	2247289	631.85		#	100
59) Pyrene	29.512	202	2414914	604.50		#	100
60) 2-Methylfluoranthene	30.268	216	1431046	626.43		#	100
61) Benzo(b)fluorene	30.892	216	1409156	635.89			90
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.599	228	2074374	635.58			97
68) Chrysene/Triphenylene	33.724	228	2217511	630.00			97
69) C1-Chrysenes	0.000		0	N.D.	d		
70) C2-Chrysenes	0.000		0	N.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	42.513	191	848225	577.24			100
77) Benzo(b)fluoranthene	37.111	252	2036668	607.99			99
78) Benzo(k,j)fluoranthene	37.194	252	2193879	629.76			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.083	252	2456556	609.81			100
81) Benzo(a)pyrene	38.249	252	2118816	617.87			99
82) Indeno(1,2,3-c,d)pyrene	42.901	276	2531279	636.53			100
83) Dibenzo(a,h)anthracene	42.964	278	2043221	648.15			90
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	44.257	276	2177695	601.98			96
89) Perylene	38.568	252	2448472	618.52		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226F.D
Acq On : 7 Sep 2014 12:49 am
Operator : ECM(YMIAO)
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 08 06:59:57 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 06:57:37 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226G.D
Acq On : 7 Sep 2014 1:56 am
Operator : ECM(YMIAO)
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 08 07:02:39 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:00:08 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	240226	251.05		0.00
31) Pyrene-d10	29.446	212	414843	250.63		0.00
73) Benzo(a)pyrene-d12	38.180	264	385895	250.32		0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	8198756	2754.74		0.00
21) Acenaphthene-d10	19.470	164	5076485	2810.43		0.00
32) Phenanthrene-d10	24.569	188	8536077	2824.15		0.01
66) Chrysene-d12	33.646	240	10246335	2926.90		0.02
88) Perylene-d12	38.485	264	10525790	3005.62		0.01
90) 5(b)H-Cholane	34.051	217	2557865	2858.14		0.02
Target Compounds						Qvalue
3) cis/trans Decalin	10.994	138	1834815m	2654.72		
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	13.691	128	9266998	2688.46		98
9) 2-Methylnaphthalene	15.937	142	6681864	2792.81		93
10) 1-Methylnaphthalene	16.271	142	5961420	2756.88		93
11) 2,6-Dimethylnaphthalene	18.029	156	6108573	2850.74		90
12) 1,6,7-Trimethylnaphtha...	20.872	170	5742294	2877.78		82
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.		
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.859	134	7570710	2734.16		100
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	17.496	154	8401209	2729.74		96
23) Acenaphthylene	18.982	152	9670242	2966.66		97
24) Acenaphthene	19.583	154	5853842	2816.33		89
25) Dibenzofuran	20.168	168	9143444	2755.95		100
26) Fluorene	21.345	166	7076845	2773.97		92
27) 1-Methylfluorene	23.333	180	4344938	3025.07		81
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	25.397	167	9690746	2999.71		100
34) Dibenzothiophene	24.217	184	10115508	2787.47		99
35) 4-Methyldibenzothiophene	25.714	198	6882563	2904.04		100
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	24.648	178	10403342	2756.82		100
42) Anthracene	24.818	178	10247870	2985.09		96
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226G.D
Acq On : 7 Sep 2014 1:56 am
Operator : ECM(YMIAO)
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 08 07:02:39 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:00:08 2014
Response via : Initial Calibration

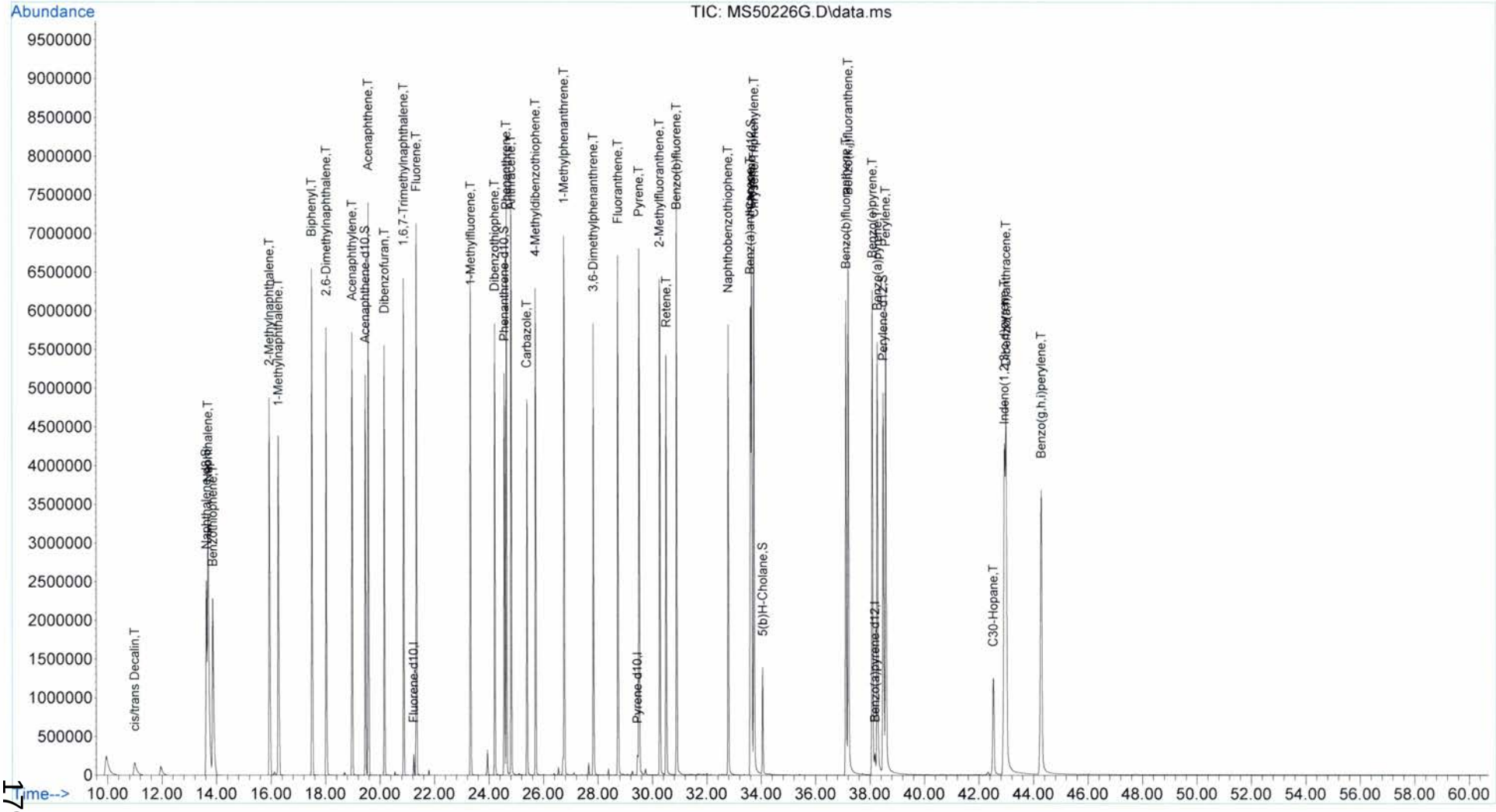
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.758	192	8194435	2931.76			96
48) 3,6-Dimethylphenanthrene	27.835	206	7163028	3046.09			95
49) Retene	30.514	234	3873767	3087.16		#	16
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.789	234	10698076	3067.75			100
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	28.739	202	11763330	2964.94		#	100
59) Pyrene	29.512	202	12433584	2821.36		#	100
60) 2-Methylfluoranthene	30.268	216	7866152	3089.23		#	100
61) Benzo(b)fluorene	30.893	216	7869169	3175.12			94
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.599	228	11542863	3148.98			100
68) Chrysene/Triphenylene	33.739	228	11609069	2945.24			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	42.523	191	4560747	2764.01			100
77) Benzo(b)fluoranthene	37.125	252	11154743	2918.83			99
78) Benzo(k,j)fluoranthene	37.208	252	11799871	2943.81			99
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.096	252	13269575	2890.68			99
81) Benzo(a)pyrene	38.277	252	11786903	3001.40			99
82) Indeno(1,2,3-c,d)pyrene	42.933	276	14640942	3187.74			100
83) Dibenzo(a,h)anthracene	42.996	278	11842258	3227.15			90
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	44.288	276	12297397	2979.57			96
89) Perylene	38.582	252	13266276	2926.30		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226G.D
Acq On : 7 Sep 2014 1:56 am
Operator : ECM(YMIAO)
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 08 07:02:39 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:00:08 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226I.D
Acq On : 7 Sep 2014 4:11 am
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 08 08:52:43 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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	83	0.00
2	S	Naphthalene-d8	1.647	1.690	-2.6	86	0.00
3	T	cis/trans Decalin	0.385	0.377	2.1	83	0.00
4	un	C1-Decalins	0.385	0.000	100.0#	0#	-12.16#
5	un	C2-Decalins	0.385	0.000	100.0#	0#	-14.28#
6	un	C3-Decalins	0.385	0.000	100.0#	0#	-16.90#
7	un	C4-Decalins	0.385	0.000	100.0#	0#	-18.64#
8	T	Naphthalene	1.903	1.869	1.8	82	0.01
9	T	2-Methylnaphthalene	1.326	1.293	2.5	82	0.00
10	T	1-Methylnaphthalene	1.197	1.171	2.2	83	0.00
11	T	2,6-Dimethylnaphthalene	1.189	1.052	11.5	75	0.00
12	T	1,6,7-Trimethylnaphthalene	1.109	0.987	11.0	76	0.00
13	un	C2-Naphthalenes	1.903	0.000	100.0#	0#	-18.40#
14	un	C3-Naphthalenes	1.903	0.000	100.0#	0#	-19.82#
15	un	C4-Naphthalenes	1.903	0.000	100.0#	0#	-22.19#
16	T	Benzothiophene	1.531	1.462	4.5	80	0.01
17	un	C1-Benzothiophenes	1.531	0.000	100.0#	0#	-15.79#
18	un	C2-Benzothiophenes	1.531	0.000	100.0#	0#	-18.19#
19	un	C3-Benzothiophenes	1.531	0.000	100.0#	0#	-20.10#
20	un	C4-Benzothiophenes	1.531	0.000	100.0#	0#	-22.03#
21	S	Acenaphthene-d10	1.001	0.975	2.6	83	0.00
22	T	Biphenyl	1.699	1.559	8.2	77	0.00
23	T	Acenaphthylene	1.828	1.490	18.5	71	0.00
24	T	Acenaphthene	1.148	1.074	6.4	79	-0.01
25	T	Dibenzofuran	1.830	1.686	7.9	78	0.00
26	T	Fluorene	1.415	1.310	7.4	79	0.00
27	T	1-Methylfluorene	0.806	0.000	100.0#	0#	-23.33#
28	un	C1-Fluorenes	1.415	0.000	100.0#	0#	-23.32#
29	un	C2-Fluorenes	1.415	0.000	100.0#	0#	-25.56#
30	un	C3-Fluorenes	1.415	0.000	100.0#	0#	-26.86#
31	I	Pyrene-d10	1.000	1.000	0.0	77	0.00
32	S	Phenanthrene-d10	0.963	1.013	-5.2	83	-0.01
33	T	Carbazole	1.038	0.838	19.3	65	0.00
34	T	Dibenzothiophene	1.154	1.117	3.2	76	0.00
35	T	4-Methyldibenzothiophene	0.756	0.000	100.0#	0#	-25.71#
36	un	2/3-Methyldibenzothiophene	0.756	0.000	100.0#	0#	-26.01#
37	un	1-Methyldibenzothiophene	0.756	0.000	100.0#	0#	-26.34#
38	un	C2-Dibenzothiophenes	1.154	0.000	100.0#	0#	-27.11#
39	un	C3-Dibenzothiophenes	1.154	0.000	100.0#	0#	-29.30#
40	un	C4-Dibenzothiophenes	1.154	0.000	100.0#	0#	-30.27#
41	T	Phenanthrene	1.193	1.218	-2.1	79	-0.01
42	T	Anthracene	1.098	0.986	10.2	71	0.00
43	un	3-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.38#
44	un	2-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.38#
45	un	2-Methylanthracene	0.897	0.000	100.0#	0#	-26.76#
46	un	4/9-Methylphenanthrene	0.897	0.000	100.0#	0#	-26.76#
47	T	1-Methylphenanthrene	0.897	0.825	8.0	74	0.00
48	T	3,6-Dimethylphenanthrene	0.760	0.000	100.0#	0#	-27.84#
49	T	Retene	0.406	0.000	100.0#	0#	-30.51#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226I.D
Acq On : 7 Sep 2014 4:11 am
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 08 08:52:43 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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)
50	un	C2-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-28.38#
51	un	C3-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-29.74#
52	un	C4-Phenanthrenes/Anthracene	1.193	0.000	100.0#	0#	-31.35#
53	T	Naphthobenzothiophene	1.129	0.000	100.0#	0#	-32.79#
54	un	C1-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-34.38#
55	un	C2-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-35.92#
56	un	C3-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-37.00#
57	un	C4-Naphthobenzothiophenes	1.129	0.000	100.0#	0#	-37.93#
58	T	Fluoranthene	1.271	1.168	8.1	73	-0.02
59	T	Pyrene	1.409	1.395	1.0	78	0.00
60	T	2-Methylfluoranthene	0.826	0.000	100.0#	0#	-30.27#
61	T	Benzo(b)fluorene	0.806	0.000	100.0#	0#	-30.89#
62	un	C1-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-31.62#
63	un	C2-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-31.88#
64	un	C3-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-33.16#
65	un	C4-Fluoranthenes/Pyrenes	1.271	0.000	100.0#	0#	-35.14#
66	S	Chrysene-d12	1.114	1.130	-1.4	81	-0.02
67	T	Benz(a)anthracene	1.195	1.010	15.5	70	0.00
68	T	Chrysene/Triphenylene	1.257	1.218	3.1	78	-0.02
69	un	C1-Chrysenes	1.257	0.000	100.0#	0#	-35.09#
70	un	C2-Chrysenes	1.257	0.000	100.0#	0#	-36.39#
71	un	C3-Chrysenes	1.257	0.000	100.0#	0#	-37.75#
72	un	C4-Chrysenes	1.257	0.000	100.0#	0#	-38.39#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	74	-0.01
74	un	C29-Hopane	0.571	0.000	100.0#	0#	-40.57#
75	un	18a-Oleanane	0.571	0.000	100.0#	0#	-41.37#
76	T	C30-Hopane	0.571	0.000	100.0#	0#	-42.52#
77	T	Benzo(b)fluoranthene	1.324	1.277	3.5	74	-0.01
78	T	Benzo(k,j)fluoranthene	1.379	1.257	8.8	70	-0.01
79	un	Benzo(a)fluoranthene	1.379	0.000	100.0#	0#	-37.11#
80	T	Benzo(e)pyrene	1.584	1.437	9.3	69	-0.03
81	T	Benzo(a)pyrene	1.362	1.261	7.4	71	-0.03
82	T	Indeno(1,2,3-c,d)pyrene	1.603	1.375	14.2	67	-0.03
83	T	Dibenzo(a,h)anthracene	1.277	1.135	11.1	69	-0.03
84	un	C1-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-47.52#
85	un	C2-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-49.08#
86	un	C3-Dibenzo(a,h)anthracenes	1.277	0.000	100.0#	0#	-48.56#
87	T	Benzo(g,h,i)perylene	1.438	1.367	4.9	73	-0.04
88	S	Perylene-d12	1.212	1.160	4.3	74	-0.01
89	T	Perylene	1.564	1.345	14.0	66	-0.03
90	S	5(b)H-Cholane	0.310	0.308	0.6	77	-0.02
91	un	C20-TAS	0.310	0.000	100.0#	0#	-33.44#
92	un	C21-TAS	0.310	0.000	100.0#	0#	-34.05#
93	un	C26(20S)-TAS	0.310	0.000	100.0#	0#	-38.47#
94	un	C26(20R)/C27(20S)-TAS	0.310	0.000	100.0#	0#	-39.17#
95	un	C28(20S)-TAS	0.310	0.000	100.0#	0#	-40.40#
96	un	C27(20R)-TAS	0.310	0.000	100.0#	0#	-40.40#
97	un	C28(20R)-TAS	0.310	0.000	100.0#	0#	-41.24#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS5\MS50226\
Data File : MS50226I.D
Acq On : 7 Sep 2014 4:11 am
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 08 08:52:43 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226I.D
Acq On : 7 Sep 2014 4:11 am
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 08 08:52:43 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.239	176	198798m	251.05		0.00
31) Pyrene-d10	29.446	212	313796m	250.63		0.00
73) Benzo(a)pyrene-d12	38.166	264	264461	250.32		-0.01
System Monitoring Compounds						
2) Naphthalene-d8	13.628	136	334649	256.55		0.00
21) Acenaphthene-d10	19.470	164	193062	243.55		0.00
32) Phenanthrene-d10	24.557	188	317423	263.25		-0.01
66) Chrysene-d12	33.630	240	353906	253.66		-0.02
88) Perylene-d12	38.471	264	306455	239.43		-0.01
90) 5(b)H-Cholane	34.035	217	81346	248.71		-0.02
Target Compounds						Qvalue
3) cis/trans Decalin	10.993	138	73955m	242.59		
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	13.701	128	364760	242.10		97
9) 2-Methylnaphthalene	15.937	142	254147	241.99		93
10) 1-Methylnaphthalene	16.271	142	230724	243.41		94
11) 2,6-Dimethylnaphthalene	18.029	156	208134	221.09		85
12) 1,6,7-Trimethylnaphtha...	20.872	170	195786	222.90		95
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.		
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.869	134	288618	238.10		100
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	17.496	154	307638	228.70		94
23) Acenaphthylene	18.982	152	294668m	203.53		
24) Acenaphthene	19.572	154	213970	235.46		93
25) Dibenzofuran	20.159	168	333147	229.95		100
26) Fluorene	21.335	166	255737	228.25		95
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	25.397	167	261433m	201.13		
34) Dibenzothiophene	24.217	184	345871	239.43		95
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	24.637	178	380041	254.39		99
42) Anthracene	24.818	178	308975	224.77		94
43) 3-Methylphenanthrene	0.000		0	N.D.		
44) 2-Methylphenanthrene	0.000		0	N.D.		
45) 2-Methylanthracene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226I.D
Acq On : 7 Sep 2014 4:11 am
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 08 08:52:43 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration

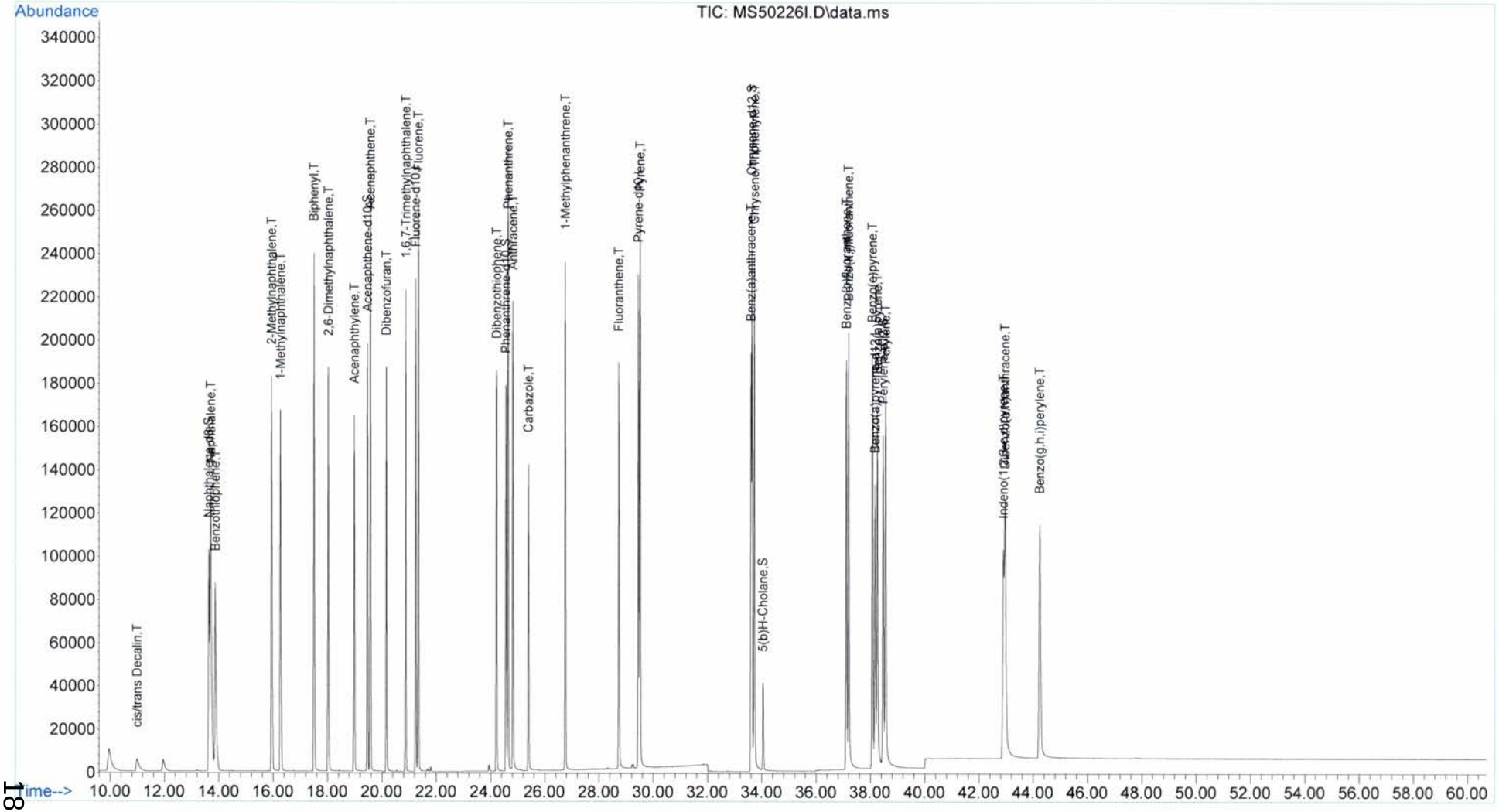
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.758	192	256451	228.41			93
48)	3,6-Dimethylphenanthrene	0.000		0	N.D.	d		
49)	Retene	0.000		0	N.D.	d		
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	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	28.723	202	368041	231.24		#	100
59)	Pyrene	29.512	202	437191	247.80		#	100
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	33.599	228	312946m	209.23			
68)	Chrysene/Triphenylene	33.724	228	377751	239.95			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	37.111	252	335882	240.06			100
78)	Benzo(k,j)fluoranthene	37.194	252	332639	228.26			100
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.069	252	380659	227.52			99
81)	Benzo(a)pyrene	38.249	252	332739	231.28			99
82)	Indeno(1,2,3-c,d)pyrene	42.901	276	363194	214.44			100
83)	Dibenzo(a,h)anthracene	42.964	278	297358	220.47			90
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	44.246	276	355976	234.35			95
89)	Perylene	38.554	252	355241	214.93		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS5\MS50226\
Data File : MS50226I.D
Acq On : 7 Sep 2014 4:11 am
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 08 08:52:43 2014
Quant Method : C:\GCMS5\MS50226\AR50226.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Mon Sep 08 07:05:23 2014
Response via : Initial Calibration



PAH Mass Discrimination Ratio

B&B Laboratories
Project J13034
Report 14-3305

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Mass Discrimination Sheet

Client Project #B0086002.1401

File Name	Sample Name	Benzo(g,h,i)perylene Concentration (ng/mL)	Phenanthrene Concentration (ng/mL)	Benzo(g,h,i)perylene/ Phenanthrene ratio	Q
MS50226B.D	PAH-WKC1-020-034	17.7	17.2	1.03	
MS50226C.D	PAH-WKC2-100-034	103	108	0.95	
MS50226D.D	PAH-WKC3-250-034	257	275	0.93	
MS50226E.D	PAH-WKC4-500-034	300	313	0.96	
MS50226F.D	PAH-WKC5-1000-034	602	604	1.00	
MS50226G.D	PAH-WKC6-5000-034	2980	2757	1.08	
MS50226I.D	PAH-WKICV-250-008	234	254	0.92	
MS50226Q.D	PAH-WKCCV-250-042	239	241	0.99	
MS50226S.D	PAH-WKCCV-250-042	226	240	0.94	

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 14-3305

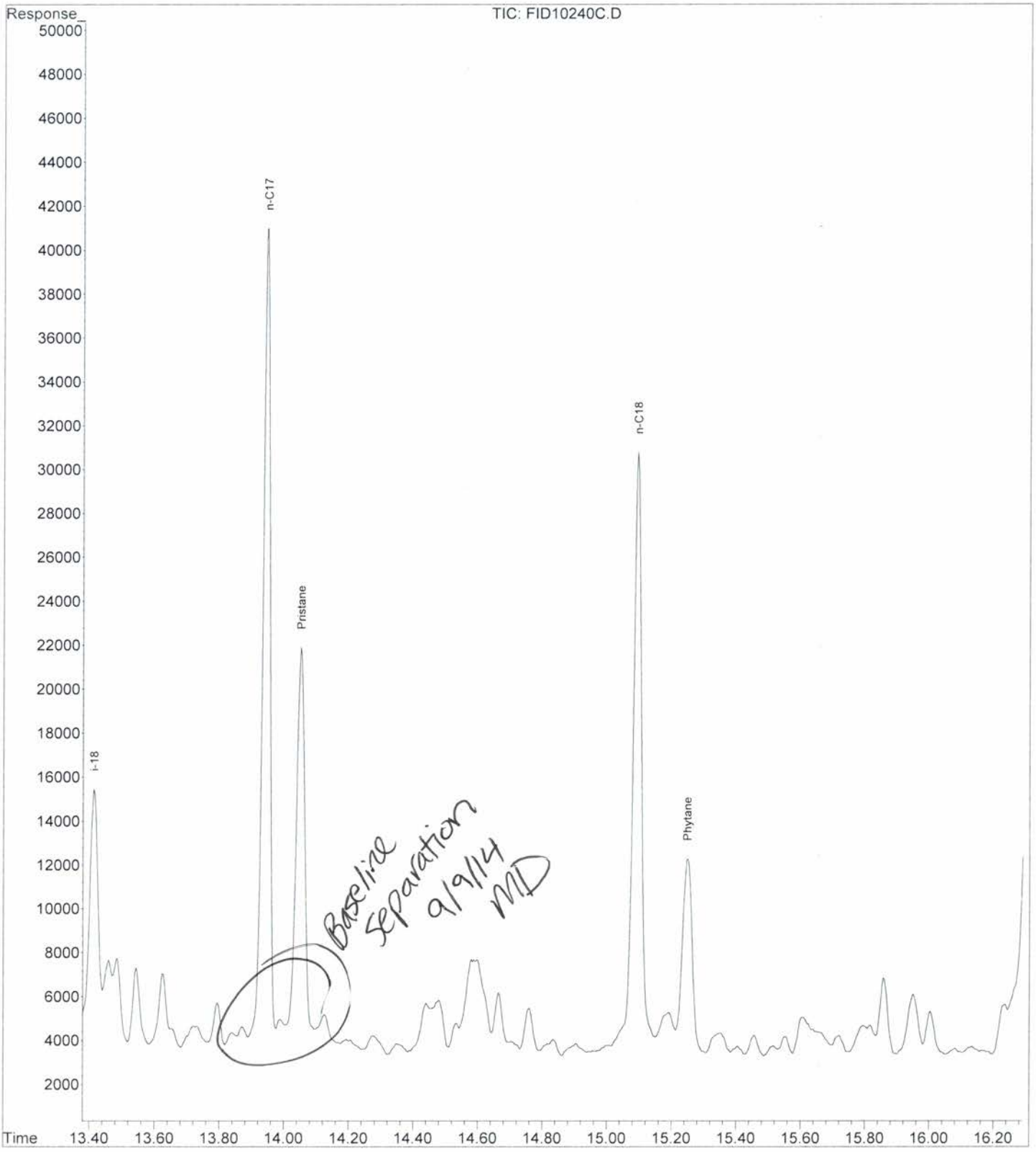
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
The Area of the Internal Standards in the Associated Calibration Standard

Client Project #B0086002.1401

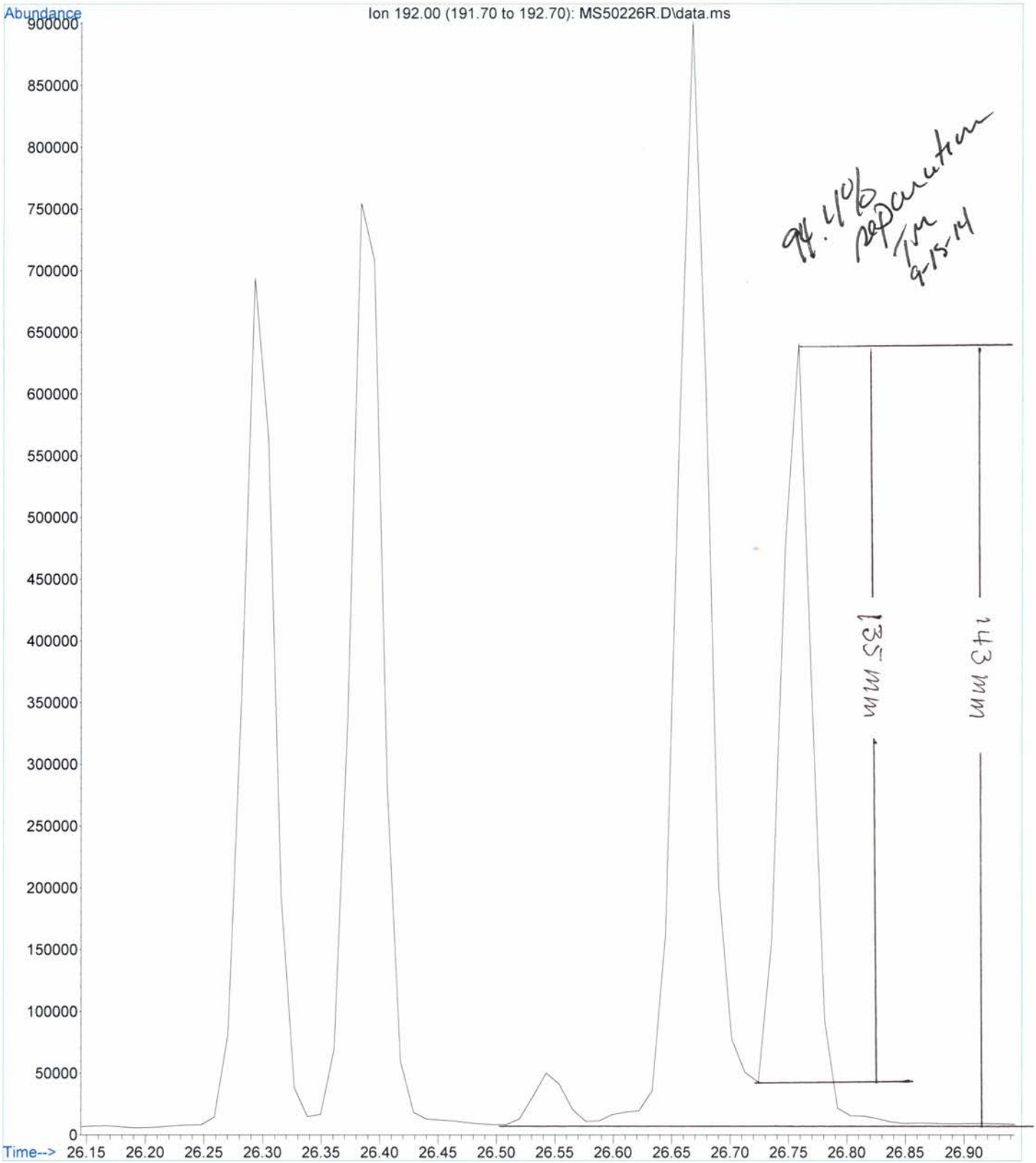
File Name	Sample Name	Internal Standard 1 Fluorene-d10				Internal Standard 2 Pyrene-d10				Internal Standard 3 Benzo(a)pyrene-d12			
		Response (Area)	50% (Area)	200% (Area)	Q	Response (Area)	50% (Area)	200% (Area)	Q	Response (Area)	50% (Area)	200% (Area)	Q
MS50226D.D	**PAH-WKC3-250-034**	**238726**	**119363**	**477452**		**407136**	**203568**	**814272**		**358186**	**179093**	**716372**	
MS50226I.D	PAH-WKICV-250-008	198798				313796				264461			
MS50226Q.D	**PAH-WKCCV-250-042**	**257685**	**128843**	**515370**		**449861**	**224931**	**899722**		**371983**	**185992**	**743966**	
MS50226R.D	PAH-WKSRM2779-4.0-005	289090				510143				478259			
ENV3335A.D	Method Blank	252528				454884				381692			
ENV3335B.D	Blank Spike	276110				488218				432110			
ENV3335C.D	Blank Spike Dupl.	263885				465054				405720			
ARC2050.D	SHN-Cove-005(B)090314	256231				462970				384830			
MS50226S.D	**PAH-WKCCV-250-042**	**251206**	**125603**	**502412**		**438548**	**219274**	**877096**		**376312**	**188156**	**752624**	

SRM-2279 Reference Oil Aliphatic and PAH Resolution Checks

File : P:\2013\J13034\Aliphatics\ENV 3335\FID10240\FID10240C.D
Operator : Meghan Dailey
Acquired : 08-Sep-2014, 21:04:36 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: AL-SRM2779-20-003
Misc Info :
Vial Number: 3



```
File        :C:\GCMS5\MS50226\MS50226R.D
Operator    : ECM(YMIAO)
Acquired    :  9 Sep 2014  10:01 am using AcqMethod PAH-2014.M
Instrument :   GCMS5
Sample Name: PAH-WKSRM2779-4.0-005
Misc Info  :
Vial Number: 57
```



Supporting Documents

Shipping, Sample Receiving, and Project Initiation Documents

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 09/05/14 SDG#: 14090501

Sender: Arcadis - Mayflower AR Rhiannon Parmelee

1. Number of Shipping Containers: 1 cooler

Comments: large blue cooler

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

Airbill Number: 802556040862 Comments: Priority Overnight

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: none

4. Chain of Custody Records?
No (Yes) Comments: none

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

Temperature/Comments: 0.5°C (T5

6. List of Broken Containers:

NONE

7. Number of Samples Expected: 1 Number of Samples Received: 1

8. Problems/Discrepancies:

None

9. Resolutions:

N/A

10. Checked in by: Kurt Kibler Date: 09/05/14

Receiving Intergrity Report Rev 0.xls

Large Blue Cooler

Ice type: wet ice

Cooler Temp: 0.5°C

T5

Custody seal: Intact

SUG# 140905O1

eurofins | B/B Laboratories

486877

CUSTODY SEAL

DATE: 9/4/14

SIGNATURE:

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

ORIGIN ID:MPJA (315) 446-7123
ARCADIS

6723 TOWPATH RD

SYRACUSE, NY 13214
UNITED STATES US

SHIP DATE: 04SEP14
ACTWGT: 27.4 LB
CAD: /P051501
DIMS: 24x13x13 IN

BILL SENDER

TO **AMANDA BREWSTER**
B AND B LABS
14391 S DOWLING RD
B
COLLEGE STATION TX 77845
(979) 693-3446

INV:
PO:
REF:
DEPT:

FedEx Express

J142014061901176

TRK# 0200 **8025 5604 0862**

FRI - 05 SEP 10:30A
PRIORITY OVERNIGHT

XH CLLA

77845
TX-US **IAH**

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: ExxonMobil

Project ID: Mayflower Pipeline

B&B Contact: ~~Amanda~~ Brewster

Sampler Signature:

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs (1006)	Analyses: Aliphatics/TPH (1016)	Other Instructions / Comments
SHN-COVE-005(B)090314	9-3-14	1030	Sheen	none	40z glass jar	1	X	X	
					Total # of Containers	1			

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Rhiannon Parmelee	ARCADIS	9/4/14	1600	Printed Name: FEDEX			
Signature:				Signature:			
Printed Name:				Printed Name: Kurt Kibler	B&B Labs	9/5/14	14:30
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

Report 14-3305

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 14090501
Client: Arcadis - Mayflower AR
Initiation Date: 9/08/14

Number of Samples: 1
Matrix: net
Due Date: 45 days: 10/23/14
Comments:

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, All — Volume(s): 100ml
Spike Standard(s): PAH, All — Volume(s): 100ml
Internal Standard(s): PAH, All — Volume(s): 100ml
Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster — Date: 9/08/14
Laboratory Manager Signature: [signature] — Date: 9/8/14

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
66732	J13034	Arcadis - Mayflower AR	ARC2050	SHN-Cove-005(B)090314	09/03/14	09/05/14	PAH, TPH, ALI	NET		14090501	Cooler 1	Arcadis: Rhiannon Parmelee	4oz clear glass jar	B0086022.1401

Amanda Brewster

From: Amanda Brewster <amandabrewster@tdi-bi.com>
Sent: Monday, September 08, 2014 9:09 AM
To: 'Parmelee, Rhiannon'
Cc: 'Juan Ramirez (juanramirez@tdi-bi.com)'; 'Donell Frank (donellfrank@tdi-bi.com)'; 'Patil, Sonal'; 'Drost, Dave'
Subject: Sample Received 9/05/14
Attachments: COC 9-05-14.pdf

Hi Rhiannon,

We received your sample on 9/05/14 in good condition.
The internal temperature of the cooler was 0.5ºC.
A PDF of the COC is attached for your records.

Regards,
Amanda

From: Parmelee, Rhiannon [mailto:Rhiannon.Parmelee@arcadis-us.com]
Sent: Thursday, September 04, 2014 10:12 PM
To: 'Amanda J. Brewster' (amandabrewster@tdi-bi.com)
Cc: Juan Ramirez (juanramirez@tdi-bi.com); Donell Frank (donellfrank@tdi-bi.com); Patil, Sonal; Drost, Dave
Subject: Mayflower - sheen sample shipment

Amanda –

Attached is the COC for the sheen net sample that was collected yesterday and shipped priority overnight FedEx to you. The tracking number is: 8025 5604 0862. For billing, this is the same project number as the last sheen sample (B0086022.1401).

Thanks,
Rhiannon

Rhiannon Parmelee, P.E. | Senior Environmental Engineer | rhiannon.parmelee@arcadis-us.com

ARCADIS U.S., Inc. | 630 Plaza Drive, Suite 100 | Highlands Ranch, CO 80129
T: 303 471 3904 | M: 206 914 9625
www.arcadis-us.com

ARCADIS, Imagine the result

Professional Registration/PE-WA, AR, MT
Please consider the environment before printing this email.

Laboratory Bench Sheet Logs

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

MATRIX
- [X] OTHER
- [ ] WATER
- [ ] SEDIMENT
- [ ] TISSUE

net

Job #: J13034 SDG #: 14090501

Client: Arcadis - Mayflower AR

Analysis: [X] PAH [ ] PESTS [ ] PCB [X] ALI

Other : TPH

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: PAH - WKSU - 2500 - 006 Bottle 2 of 3
Pest/PCB: — Bottle ___ of ___
Aliphatic: AL - WKSU - 200 - 003 Bottle 3 of 7
Other: — Bottle ___ of ___

Spike: 100 µL
PAH: PAH - WKSU - 1000 - 029 Bottle 1 of 2
Pest/PCB: — Bottle ___ of ___
Aliphatic: AL - WKSU - 100 - 022 Bottle 1 of 1
Other: — Bottle ___ of ___

GC Int Std: 100 µL
PAH: PAH - WKIS - 2500 - 006 Bottle 1 of 3
Pest/PCB: — Bottle ___ of ___
Aliphatic: AL - WKIS - 500 - 003 Bottle 3 of 7
Other: — Bottle ___ of ___

Turbo Vap
Bath T (C): ___
Pressure (>20psi): ___
Check Water Level: ___
Turbo Vap Date: ___

General Comments:

Report 14-3305

	Added	Witness
Surrogate:	9/8/14 CBS	9/8/14 SM
Spike:	9/8/14 CBS	9/8/14 SM
Internal:	9/8/14 CBS	9/8/14 CK

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Extraction Comments
1	ENV3335A	Method Blank	—			
2	ENV3335B	Blank Spike	—			
3	ENV3335C	Blank Spike Duplicate	—			
4	ARC2050	SHN-Cove-005(B)090314	1 net			150mL DCM
5						
6						
7						
8						
9						
10						
11						
12						

Internal Chain of Custody

	Date:	Date:
Extraction Prep	9/8/14	9/8/14
Initials:	CBS	CBS
Extraction	9/8/14	9/8/14
Initials:	CBS	CBS
Concentration	9/8/14	9/8/14
Initials:	CBS	CBS
Short Columns	9/8/14	9/5/14
Initials:	CBS	CBS

ENV 3335

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Extraction Comments
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Internal Chain of Custody

Concentration Short Columns	Date: 9/8/14	Date: 9/8/14
	Initials: CBS	Initials: CBS
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: 9/8/14	Initials: CBS

Dry Weight Page

—

Lipid/EOM Page

EOM1154

Clean-up/Separation/Other Columns

—

Lot Numbers

DCM: I697354333
Hexane: —
Hydromatrix: —
Water: DK943-B
Silica: BCBL8361V
Alumina: VA26EZEMS
Sodium Sulfate: 3143C513
Pentane: —
Copper: —
Hydrochloric Acid: —
SPE Columns: —
Other: —

Sample Storage Box #

J13034-3

HPLC Storage Box #

—

QC Review

Date	Initials
9/8/14	CBS

Equipment Used

☐ ASE1 ☒ ASE3 ☐ HPLC1
☐ ASE2 ☐ PLE ☐ HPLC2

Copied to Folders

9/8/14 CBS

B&B LABORATORIES EOM LOGBOOK

MATRIX: (OTHER) SEDIMENT / WATER — Nut

Job #: J13034 SDG #: 14090501

Client: Arcadis - Mayflower AR

General comments:

Lab Manager Date/Int: 9/8/14 [illegible]

Transferred by Date/Int: 9/8/14 CSA
From ENV Pg: ENV 3335
From DRY Pg: N/A

Date/Int: 9/8/14 CSD

Bal. Cal. X

Date/Int: 9/8/14 CSS

	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
1	ENV3335A	Method Blank	1		3	30.102	30.102	0.000	0		
2	ENV3335B	Blank Spike	1		3	30.182	30.193	0.011	330		
3	ENV3335C	Blank Spike Dup	1		3	30.401	30.413	0.012	360		
4	ARC2050	SHN-Cove-005(B) 090314	1 net		3	29.910	29.932	0.022	660		
5											
6											
7											
8											
9											
10											
11											
12											

Extracted using 150mL of DCM. 9/8/14 CSS

EOM 1154

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											

9/8/14

$$EOM = \frac{(EOM\ Wt.\ (mg))\ (Final\ Extract\ Vol.\ (ml))}{(Smpl\ Wt/Vol.\ (g/L))\ (0.10\ ml)} \times 1000$$

$$\%RPD = \frac{(EOM_1 - EOM_2)}{(EOM_1 + EOM_2) \times 0.5} \times 100\%$$

	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl Lipid Wt. (mg)
Solvent Blank	29.716	29.716	0.000 mg
EOM Standard: EOM-WKLC-10-005 (1of1)	29.836	40.071	10.235 mg

The Relative Percent Difference (RPD) between duplicates must be ≤ 25%.

Date/Int:	RPD

Sample:

Duplicate: 9/8/14

EOM 1154

Last Page

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

Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
September 25, 2014 and September 29, 2014
Collection Dates

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

(QC Batch ENV 3341)

October 13, 2014

Technical Report 14-3309

Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
September 25, 2014 and September 29, 2014
Collection Dates
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B&B Laboratories
September 16, 2014

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Narrative

Technical Report 14-3309
Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
Net Samples
September 25, 2014 and September 29, 2014
Collection Dates

October 13, 2014

Introduction

B&B Laboratories received a shipment of one (1) ice chest that was sent by David Drost of Arcadis using FedEx on September 25, 2014 and arrived on September 26, 2014 in College Station, Texas. The cooler arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	5.6°C no temperature blank	Three (3) net samples in 4 oz. glass jars.

B&B Laboratories received a shipment of one (1) ice chest that was sent by David Drost of Arcadis using FedEx on September 29, 2014 and arrived on September 30, 2014 in College Station, Texas. The cooler arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	8.8°C no temperature blank	One (1) net sample in a 4 oz. glass jars.

The net samples were collected on September 25, 2014 and September 29, 2014 in support of the Mayflower Pipeline Incident, (Arcadis-US Contract # B0086022.1401). The net 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 sample receiving discrepancies are noted on the receiving/integrity report pages. The net 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 TPH, ALI, PAH, selected hopane's, and TAS compounds in the net samples are included in this report.

Analytical Methods

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

Table 1. Standard Operating Procedures for each analytical test.

Matrix	Extraction	ALI/TPH	PAH
Net	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 method 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 a "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
Net	µg/net	µg/net	ng/net

Table 3. Data Qualifier Definitions.

Qualifier	Definition
B	Analyte detected in the method blank greater than 3X MDL
D	Diluted Value
E	Analyte concentration exceeds the calibration range of the GC/MS for that specific analysis.
I	Analytical interference
J	Analyte detected below the method detection limit
L	Loss due to matrix effect
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	**Net RLs**
Sample size	1 net, 1ml final extract
Unit of measure	µg/net
n-C9	0.35
n-C10	0.35
n-C11	0.35
n-C12	0.35
n-C13	0.35
i-c15	0.35
n-C14	0.35
i-c16	0.35
n-C15	0.35
n-C16	0.35
i-c18	0.35
n-C17	0.35
Pristane	0.35
n-C18	0.35
Phytane	0.35
n-C19	0.35
n-C20	0.35
n-C21	0.35
n-C22	0.35
n-C23	0.35
n-C24	0.35
n-C25	0.35
n-C26	0.35
n-C27	0.35
n-C28	0.35
n-C29	0.35
n-C30	0.35
n-C31	0.35
n-C32	0.35
n-C33	0.35
n-C34	0.35
n-C35	0.35
n-C36	0.35
n-C37	0.35
n-C38	0.35
n-C39	0.35
n-C40	0.35
Total Petroleum Hydrocarbons	20.0
Total Resolved Hydrocarbons	20.0
Unresolved Complex Mixture	20.0
Extractable Organic Matter	100

Table 4. Continued. Method Detection Limits.

PAH Sample size Unit of measure	Net RLs 1 net, 1ml final extract ng/net
cis/trans Decalin	10.0
C1-Decalins	10.0
C2-Decalins	10.0
C3-Decalins	10.0
C4-Decalins	10.0
Naphthalene	10.0
C1-Naphthalenes	10.0
C2-Naphthalenes	10.0
C3-Naphthalenes	10.0
C4-Naphthalenes	10.0
Benzothiophene	10.0
C1-Benzothiophenes	10.0
C2-Benzothiophenes	10.0
C3-Benzothiophenes	10.0
C4-Benzothiophenes	10.0
Biphenyl	10.0
Acenaphthylene	10.0
Acenaphthene	10.0
Dibenzofuran	10.0
Fluorene	10.0
C1-Fluorenes	10.0
C2-Fluorenes	10.0
C3-Fluorenes	10.0
Carbazole	10.0
Anthracene	10.0
Phenanthrene	10.0
C1-Phenanthrenes/Anthracenes	10.0
C2-Phenanthrenes/Anthracenes	10.0
C3-Phenanthrenes/Anthracenes	10.0
C4-Phenanthrenes/Anthracenes	10.0
Dibenzothiophene	10.0
C1-Dibenzothiophenes	10.0
C2-Dibenzothiophenes	10.0
C3-Dibenzothiophenes	10.0
C4-Dibenzothiophenes	10.0
Fluoranthene	10.0
Pyrene	10.0
C1-Fluoranthenes/Pyrenes	10.0
C2-Fluoranthenes/Pyrenes	10.0
C3-Fluoranthenes/Pyrenes	10.0
C4-Fluoranthenes/Pyrenes	10.0
Naphthobenzothiophene	10.0
C1-Naphthobenzothiophenes	10.0
C2-Naphthobenzothiophenes	10.0
C3-Naphthobenzothiophenes	10.0
C4-Naphthobenzothiophenes	10.0
Benz(a)anthracene	10.0
Chrysene/Triphenylene	10.0
C1-Chrysenes	10.0

PAH (continued) Sample size Unit of measure	**Net RLs** 1 net, 1ml final extract ng/net
C2-Chrysenes	10.0
C3-Chrysenes	10.0
C4-Chrysenes	10.0
Benzo(b)fluoranthene	10.0
Benzo(k,j)fluoranthene	10.0
Benzo(a)fluoranthene	10.0
Benzo(e)pyrene	10.0
Benzo(a)pyrene	10.0
Perylene	10.0
Indeno(1,2,3-c,d)pyrene	10.0
Dibenzo(a,h)anthracene	10.0
Benzo(g,h,i)perylene	10.0
Individual Alkyl Isomers,TAS, and Hopanes	
2-Methylnaphthalene	10.0
1-Methylnaphthalene	10.0
2,6-Dimethylnaphthalene	10.0
1,6,7-Trimethylnaphthalene	10.0
1-Methylfluorene	10.0
4-Methyldibenzothiophene	10.0
2/3-Methyldibenzothiophene	10.0
1-Methyldibenzothiophene	10.0
3-Methylphenanthrene	10.0
2/4-Methylphenanthrene	10.0
2-Methylanthracene	10.0
9-Methylphenanthrene	10.0
1-Methylphenanthrene	10.0
3,6-Dimethylphenanthrene	10.0
Retene	10.0
2-Methylfluoranthene	10.0
Benzo(b)fluorene	10.0
C29-Hopane	10.0
18a-Oleanane	10.0
C30-Hopane	10.0
C20-TAS	10.0
C21-TAS	10.0
C26(20S)-TAS	10.0
C26(20R)/C27(20S)-TAS	10.0
C28(20S)-TAS	10.0
C27(20R)-TAS	10.0
C28(20R)-TAS	10.0

Quality Assurance/Quality Control – Net

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

The quality assurance/quality control procedure for this program included the analyses of a method 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. Method 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 QA criterion for RPDs for valid laboratory 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 method blank and a blank spike/blank spike duplicate of no more than 20 samples. A standard reference oil (NIST 2779) was analyzed with this data set. Method 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 – Net

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.

Method 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

- The response (area) for d12-Benzo(a)pyrene was detected outside of the 50% to 200% range in client sample SHN-Cove-009(NB)092914 (ARC0258).

Comment

- It is unknown as to why this analyte was detected outside of the internal standard area range as specified in the PAH QC table (table 6).

Continuing Calibration Checks

Observation

- No variances were observed.

Surrogate Recoveries

Observation

- No variances were observed.

Method 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

- The concentrations reported for the C1-Naphthalenes, C1-Dibenzothiophenes, and the C1-Phenanthrene/Anthracenes are calculated using the RRF of the parent compound (Naphthalene, Dibenzothiophene, and Phenanthrene). The concentration of these individual isomers is based on their RRF or an individual isomer from the same family.

- 150mL of solvent was used to extract the organic material from the submitted net samples. The same amount of solvent was used for the method blank, the blank spike and blank spike duplicate. The internal QC samples are reported as either amount (µg) for the aliphatic and TPH analytes or amount (ng) for the PAH analytes. The net samples are reported as µg/net for the aliphatic and TPH analytes or ng/net for the PAH analytes.

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.
Method 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 to 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 RSD ≤ 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.
Method 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 14-3309

Arcadis - Mayflower AR
Sample Inventory

Client Project #B0086002.1401

#	File Number	Client Identification	Collection Date	Received Date	Analysis	Matrix	Comments	B&B SDG	Client Project #
1	ARC2055	SHN-Cove-006(NB)092514	09/25/14	09/26/14	PAH, TPH, ALI	Net	label does not match COC	14092601	B0086022.1401
2	ARC2056	SHN-Cove-007(NB)092514	09/25/14	09/26/14	PAH, TPH, ALI	Net	label does not match COC	14092601	B0086022.1401
3	ARC2057	SHN-Cove-008(NB)092514	09/25/14	09/26/14	PAH, TPH, ALI	Net	label does not match COC	14092601	B0086022.1401
4	ARC2058	SHN-Cove-009(NB)092914	09/29/14	09/30/14	PAH, TPH, ALI	Net		14093001	B0086022.1401

Other (Net) Samples

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

Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC2055.D	ARC2056.D	ARC2057.D	ARC2058.D
Client Name	SHN-Cove-006(NB)092514	SHN-Cove-007(NB)092514	SHN-Cove-008(NB)092514	SHN-Cove-009(NB)092914
Matrix	Net	Net	Net	Net
Collection Date	09/25/14	09/25/14	09/25/14	09/29/14
Received Date	09/26/14	09/26/14	09/26/14	09/30/14
Extraction Date	09/30/14	09/30/14	09/30/14	09/30/14
Extraction Batch	ENV 3341	ENV 3341	ENV 3341	ENV 3341
Date Acquired	07-Oct-2014, 01:42:25	07-Oct-2014, 02:52:50	07-Oct-2014, 04:03:13	07-Oct-2014, 05:13:43
Method	ALIFRONT.M	ALIFRONT.M	ALIFRONT.M	ALIFRONT.M
Sample	1.00	1.00	1.00	1.00
Dilution	1X	1X	1X	1X

Target Compounds	Su. Corrected Conc. (µg/net)	Q	Su. Corrected Conc. (µg/net)	Q	Su. Corrected Conc. (µg/net)	Q	Su. Corrected Conc. (µg/net)	Q
n-C9	3.629		<0.35	U	<0.35	U	<0.35	U
n-C10	7.426		<0.35	U	<0.35	U	<0.35	U
n-C11	17.278		<0.35	U	<0.35	U	<0.35	U
n-C12	32.907		0.095	J	<0.35	U	0.308	J
n-C13	46.452		0.093	J	<0.35	U	0.513	
i-C15	56.511		0.292	J	0.467		1.099	
n-C14	51.991		0.172	J	<0.35	U	0.513	
i-C16	66.777		0.384		0.760		0.159	J
n-C15	57.822		0.220	J	<0.35	U	1.573	
n-C16	43.358		0.215	J	<0.35	U	0.467	
i-C18	55.262		0.706		1.219		0.216	J
n-C17	22.715		0.185	J	<0.35	U	0.933	
Pristane	75.051		1.195		1.876		0.574	
n-C18	11.306		0.227	J	<0.35	U	1.522	
Phytane	87.221		2.163		2.418		0.180	J
n-C19	22.219		0.304	J	<0.35	U	1.297	
n-C20	12.204		0.457		<0.35	U	0.441	
n-C21	8.380		0.533		<0.35	U	1.010	
n-C22	5.195		0.861		<0.35	U	0.832	
n-C23	3.872		0.621		<0.35	U	0.309	J
n-C24	2.465		1.096		<0.35	U	0.919	
n-C25	<0.35	U	1.404		<0.35	U	0.820	
n-C26	<0.35	U	2.406		<0.35	U	0.462	
n-C27	<0.35	U	3.416		<0.35	U	1.166	
n-C28	<0.35	U	4.430		<0.35	U	0.982	
n-C29	<0.35	U	5.904		<0.35	U	1.428	
n-C30	<0.35	U	3.626		<0.35	U	0.663	
n-C31	<0.35	U	3.158		<0.35	U	1.219	
n-C32	<0.35	U	1.682		<0.35	U	<0.35	I
n-C33	<0.35	U	0.991		<0.35	U	<0.35	I
n-C34	<0.35	U	0.852		<0.35	U	<0.35	U
n-C35	<0.35	U	0.667		<0.35	U	<0.35	U
n-C36	<0.35	U	0.256	J	<0.35	U	<0.35	U
n-C37	<0.35	U	0.403		<0.35	U	<0.35	U
n-C38	<0.35	U	0.162	J	<0.35	U	<0.35	U
n-C39	<0.35	U	0.123	J	<0.35	U	<0.35	U
n-C40	<0.35	U	0.117	J	<0.35	U	<0.35	U
Total Alkanes	690		39.4		6.7		19.6	
Total Petroleum Hydrocarbons	71648		6028		4128		12160	
Total Resolved Hydrocarbons	4377		153		170		2534	
Unresolved Complex Mixture	67270		5874		3959		9625	
EOM (µg/net)	144510		7830		7110		162030	

Surrogate (Su)	Su Recovery (%)	Su Recovery (%)	Su Recovery (%)	Su Recovery (%)
n-dodecane-d26	94	72	55	83
n-eicosane-d42	84	91	95	98
n-triacontane-d62	96	98	97	97

Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Method Blank Report

Sample Name	ENV3341A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	09/30/14
Extraction Batch	ENV 3341
Date Acquired	06-Oct-2014, 21:00:04
Method	ALIFRONT.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg)	Q	Q	3X MDL Conc. (µg/Net)	Actual MDL Conc. (µg/Net)
n-C9	<0.35	U		1.050	0.350
n-C10	<0.35	U		1.050	0.350
n-C11	<0.35	U		1.050	0.350
n-C12	<0.35	U		1.050	0.350
n-C13	<0.35	U		1.050	0.350
i-C15	<0.35	U		1.050	0.350
n-C14	<0.35	U		1.050	0.350
i-C16	<0.35	U		1.050	0.350
n-C15	<0.35	U		1.050	0.350
n-C16	<0.35	U		1.050	0.350
i-C18	<0.35	U		1.050	0.350
n-C17	<0.35	U		1.050	0.350
Pristane	<0.35	U		1.050	0.350
n-C18	<0.35	U		1.050	0.350
Phytane	<0.35	U		1.050	0.350
n-C19	<0.35	U		1.050	0.350
n-C20	<0.35	U		1.050	0.350
n-C21	<0.35	U		1.050	0.350
n-C22	<0.35	U		1.050	0.350
n-C23	<0.35	U		1.050	0.350
n-C24	<0.35	U		1.050	0.350
n-C25	<0.35	U		1.050	0.350
n-C26	<0.35	U		1.050	0.350
n-C27	<0.35	U		1.050	0.350
n-C28	<0.35	U		1.050	0.350
n-C29	<0.35	U		1.050	0.350
n-C30	<0.35	U		1.050	0.350
n-C31	<0.35	U		1.050	0.350
n-C32	<0.35	U		1.050	0.350
n-C33	<0.35	U		1.050	0.350
n-C34	<0.35	U		1.050	0.350
n-C35	<0.35	U		1.050	0.350
n-C36	<0.35	U		1.050	0.350
n-C37	<0.35	U		1.050	0.350
n-C38	<0.35	U		1.050	0.350
n-C39	<0.35	U		1.050	0.350
n-C40	<0.35	U		1.050	0.350
Total Alkanes					
Total Petroleum Hydrocarbons	<20	U		60.0	20.0
Total Resolved Hydrocarbons	<20	U		60.0	20.0
Unresolved Complex Mixture	<20	U		60.0	20.0
EOM (µg/net)	<100			300	100

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	87
n-eicosane-d42	95
n-triacontane-d62	99

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

Sample Name	ENV3341B.D	ENV3341C.D
Client Name	Blank Spike	Blank Spike Dupl
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	09/30/14	09/30/14
Extraction Batch	ENV 3341	ENV 3341
Date Acquired	06-Oct-2014, 22:10:24	06-Oct-2014, 23:21:05
Method	ALIFRONT.M	ALIFRONT.M
Sample	1.00	1.00
Dilution	1X	1X

Target Compounds	Su. Corrected Conc. (µg)	Recovery (%)	Q	Su. Corrected Conc. (µg)	Recovery (%)	Q	RPD (%)	Q	Spike Amount (µg)
n-C9	8.55	85		8.48	84		1		10.0
n-C10	9.08	91		9.13	91		1		10.0
n-C11	9.36	93		9.43	94		1		10.02
n-C12	9.47	95		9.54	95		1		10.0
n-C13	9.58	95		9.67	96		1		10.0
n-C14	9.63	96		9.75	97		1		10.00
n-C15	9.83	98		9.98	100		2		10.03
n-C16	9.87	99		10.1	101		2		10.0
n-C17	9.94	99		10.0	99		1		10.05
Pristane	9.92	99		10.0	100		1		10.03
n-C18	10.1	100		10.1	101		1		10.1
Phytane	10.3	100		10.4	101		1		10.32
n-C19	10.5	102		10.6	102		1		10.4
n-C20	10.2	101		10.2	102		1		10.0
n-C21	10.2	101		10.3	102		1		10.0
n-C22	10.2	102		10.3	103		1		10.02
n-C23	10.2	102		10.3	103		1		10.02
n-C24	10.5	105		10.7	106		1		10.0
n-C25	10.2	102		10.3	103		1		10.0
n-C26	10.2	102		10.3	103		1		10.0
n-C27	10.2	101		10.3	103		2		10.02
n-C28	10.2	101		10.3	103		1		10.0
n-C29	10.3	102		10.5	105		2		10.0
n-C30	10.2	102		10.5	104		2		10.0
n-C31	10.6	104		11.0	107		3		10.3
n-C32	10.3	103		10.8	107		4		10.0
n-C33	10.3	103		10.8	108		5		10.0
n-C34	10.3	103		11.0	109		6		10.0
n-C35	10.3	103		10.9	109		6		10.0
n-C36	10.4	104		11.1	111		6		10.00
n-C37	10.7	104		11.4	111		6		10.3
n-C38	10.5	104		11.2	112		7		10.0
n-C39	10.6	105		11.3	112		7		10.0
n-C40	10.5	105		11.3	113		7		10.0
Average %Recovery		100			103				

Surrogate (Su)	Su Recovery (%)	Su Recovery (%)
n-dodecane-d26	92	90
n-eicosane-d42	97	96
n-triacontane-d62	101	101

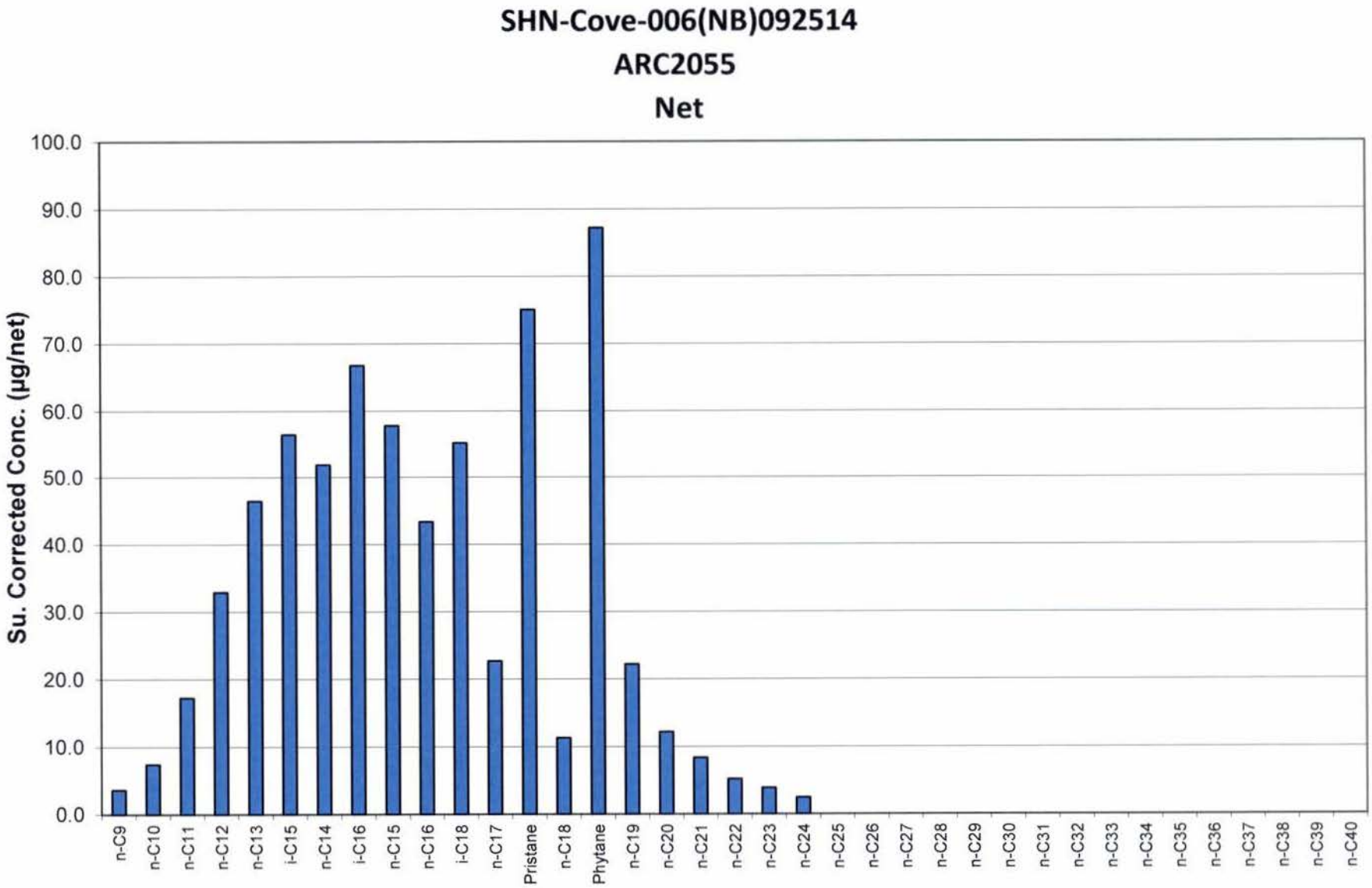
Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Standard Reference Material Report

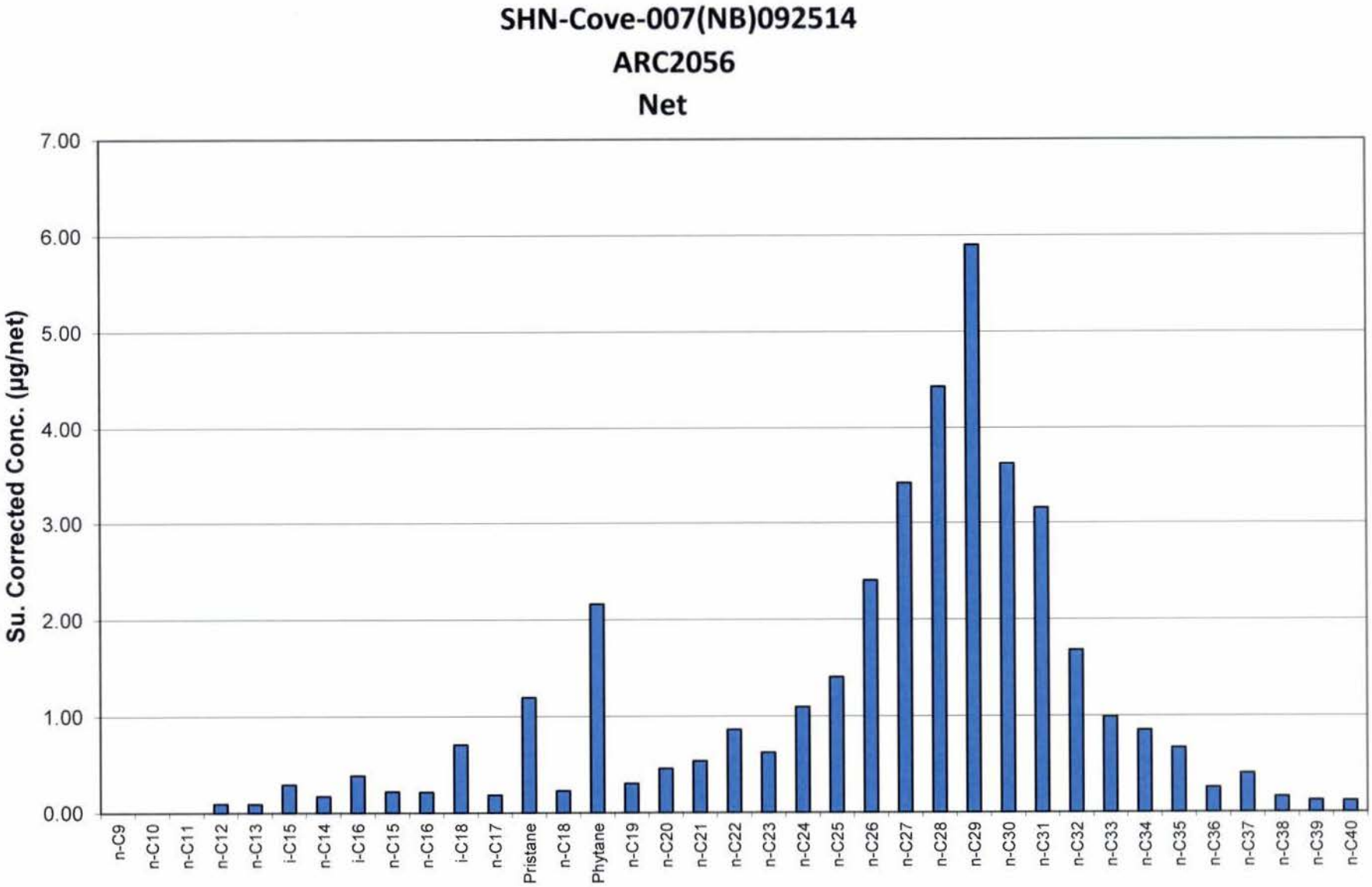
Sample Name	FID10247C.D
Client Name	AL-SRM2779-20-003
Matrix	Reference Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3341
Date Acquired	06-Oct-2014, 16:18:39
Method	ALIFRONT.M
Sample Weight (mg)	20.0
Dilution	1X

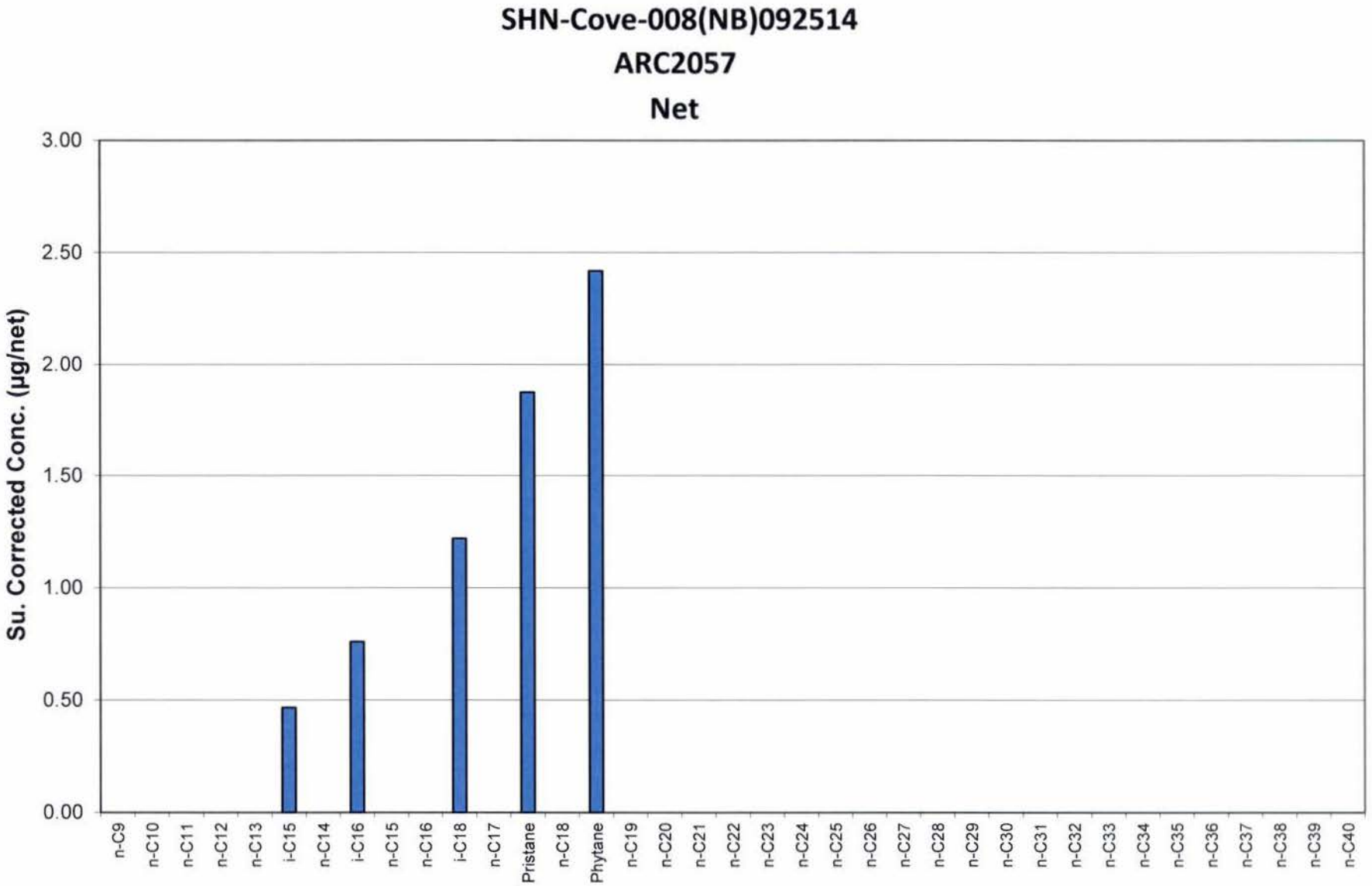
Target Compounds	Su. Corrected Conc. (µg/mg)	Q	Q	RPD (%)	B&B Average	-20% Conc. (µg/mg)	+20% Conc. (µg/mg)
n-C9	12.9			3	13.3	10.6	16.0
n-C10	11.3			5	11.8	9.47	14.2
n-C11	10.3			4	10.7	8.57	12.9
n-C12	8.90			5	9.36	7.49	11.2
n-C13	8.02			4	8.32	6.65	10.0
i-C15	1.85			1	1.88	1.50	2.25
n-C14	7.25			2	7.36	5.89	8.83
i-C16	2.65			7	2.83	2.27	3.40
n-C15	6.80			3	7.03	5.62	8.44
n-C16	5.82			1	5.90	4.72	7.07
i-C18	1.46			7	1.56	1.25	1.87
n-C17	4.56			3	4.68	3.74	5.61
Pristane	2.51			1	2.50	2.00	3.00
n-C18	3.75			2	3.84	3.07	4.61
Phytane	1.54			1	1.56	1.25	1.87
n-C19	3.63			2	3.54	2.83	4.25
n-C20	2.97			2	2.90	2.32	3.48
n-C21	2.41			1	2.44	1.95	2.93
n-C22	2.17			3	2.11	1.69	2.53
n-C23	1.95			2	1.91	1.53	2.29
n-C24	1.76			3	1.71	1.37	2.05
n-C25	1.50			6	1.42	1.13	1.70
n-C26	1.17			1	1.18	0.942	1.41
n-C27	0.913			3	0.939	0.751	1.13
n-C28	0.809			3	0.786	0.629	0.944
n-C29	0.802			6	0.755	0.604	0.906
n-C30	0.704			4	0.674	0.539	0.808
n-C31	0.597			7	0.559	0.447	0.671
n-C32	0.500			7	0.465	0.372	0.559
n-C33	0.497			4	0.479	0.383	0.575
n-C34	0.434			3	0.422	0.338	0.506
n-C35	0.366			8	0.339	0.271	0.406
n-C36	0.208	J		4	0.217	0.174	0.261
n-C37	0.197	J		7	0.211	0.169	0.254
n-C38	0.164	J		9	0.179	0.143	0.214
n-C39	0.169	J		1	0.170	0.136	0.204
n-C40	0.179	J		2	0.175	0.140	0.210
Total Petroleum Hydrocarbons	566			7	605	484	726

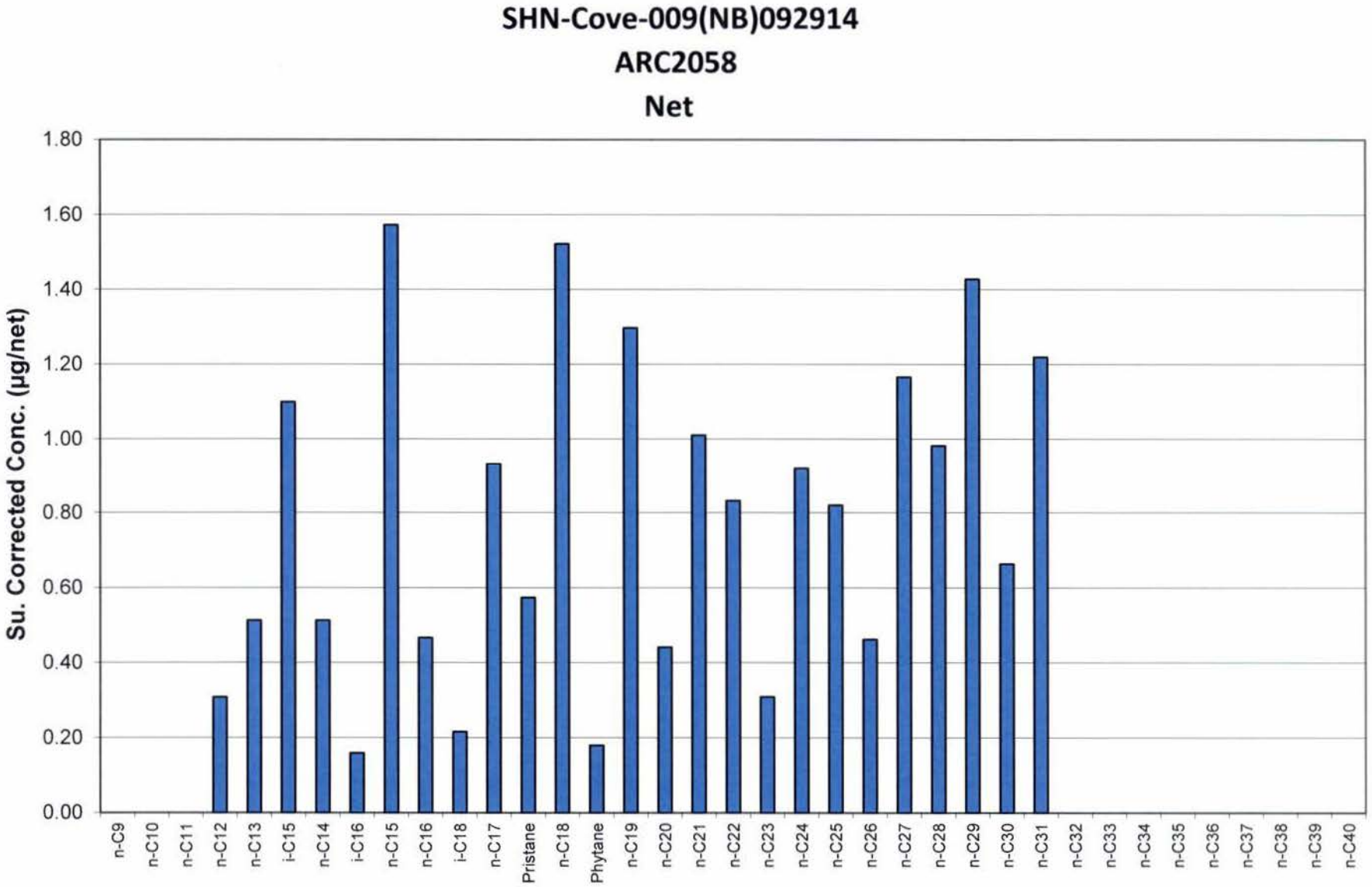
Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	97
n-eicosane-d42	98
n-triacontane-d62	94

Aliphatic Hydrocarbon Histograms


SHN-Cove-006(NB)092514
ARC2055
Net
Su. Corrected Conc. (µg/net)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
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

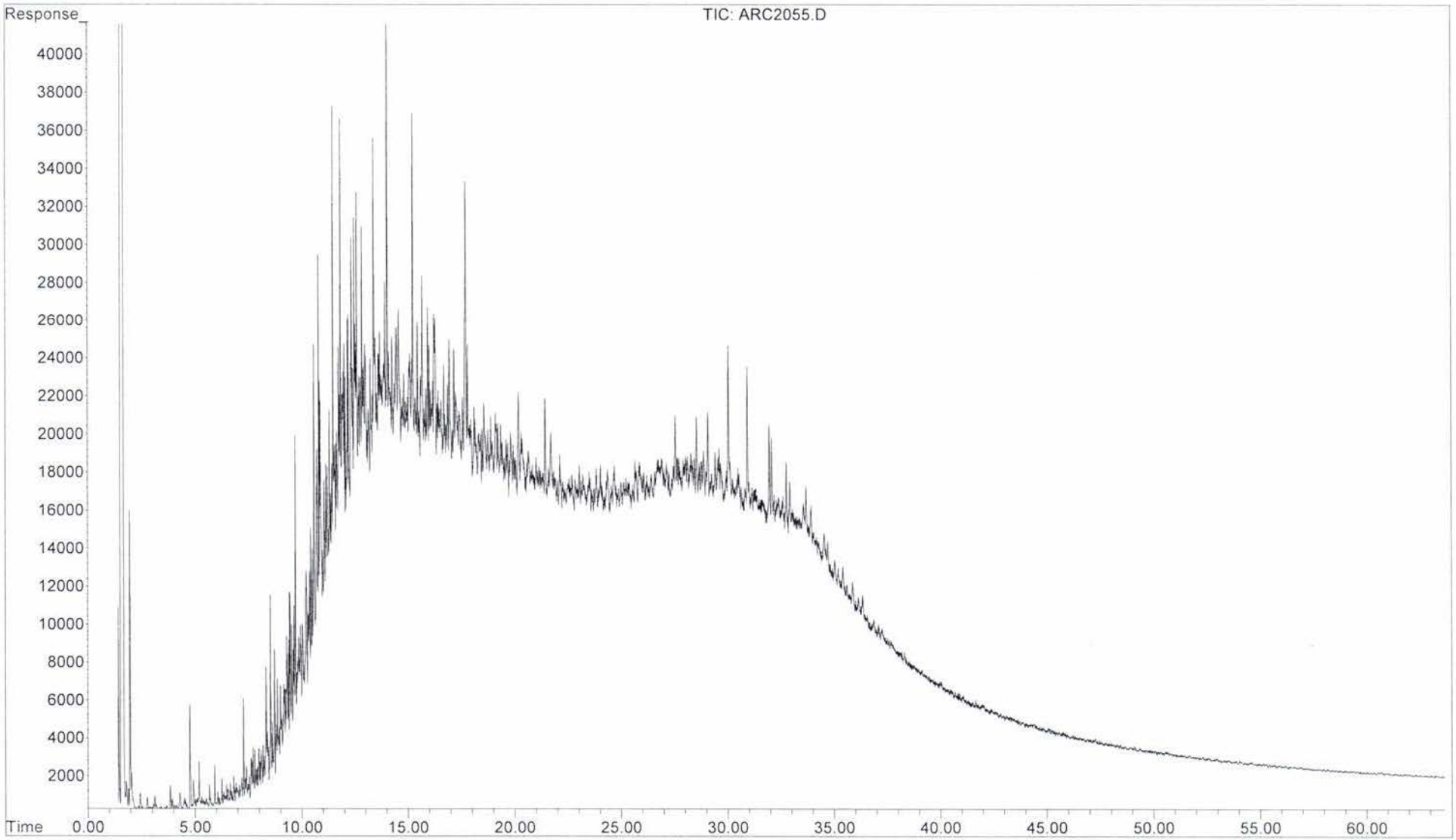

SHN-Cove-007(NB)092514
ARC2056
Net
Su. Corrected Conc. (µg/net)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
n-C9
n-C10
n-C11
n-C12
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pristane
n-C18
Phytane
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40


SHN-Cove-008(NB)092514
ARC2057
Net
Su. Corrected Conc. (µg/net)
3.00
2.50
2.00
1.50
1.00
0.50
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


SHN-Cove-009(NB)092914
ARC2058
Net
Su. Corrected Conc. (µg/net)
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
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 3341\FID10247\ARC2055.D
Operator : Meghan Dailey
Acquired : 07-Oct-2014, 01:42:25 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SHN-Cove-006(NB)092514
Misc Info :
Vial Number: 10



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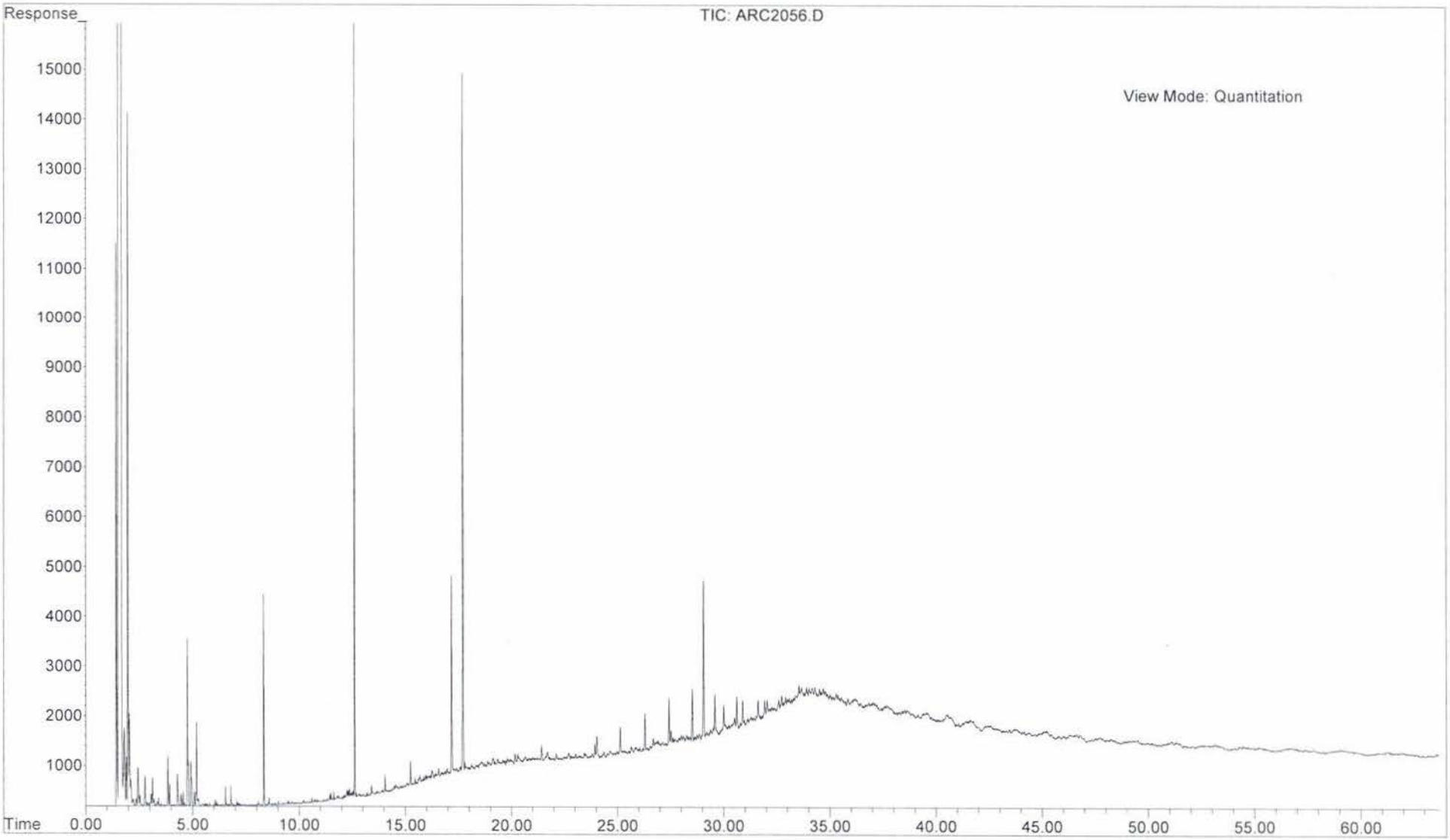
Operator : Meghan Dailey
Acquired : 07-Oct-2014, 02:52 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SHN-Cove-007(NB)092514
Misc Info :
Vial Number: 11



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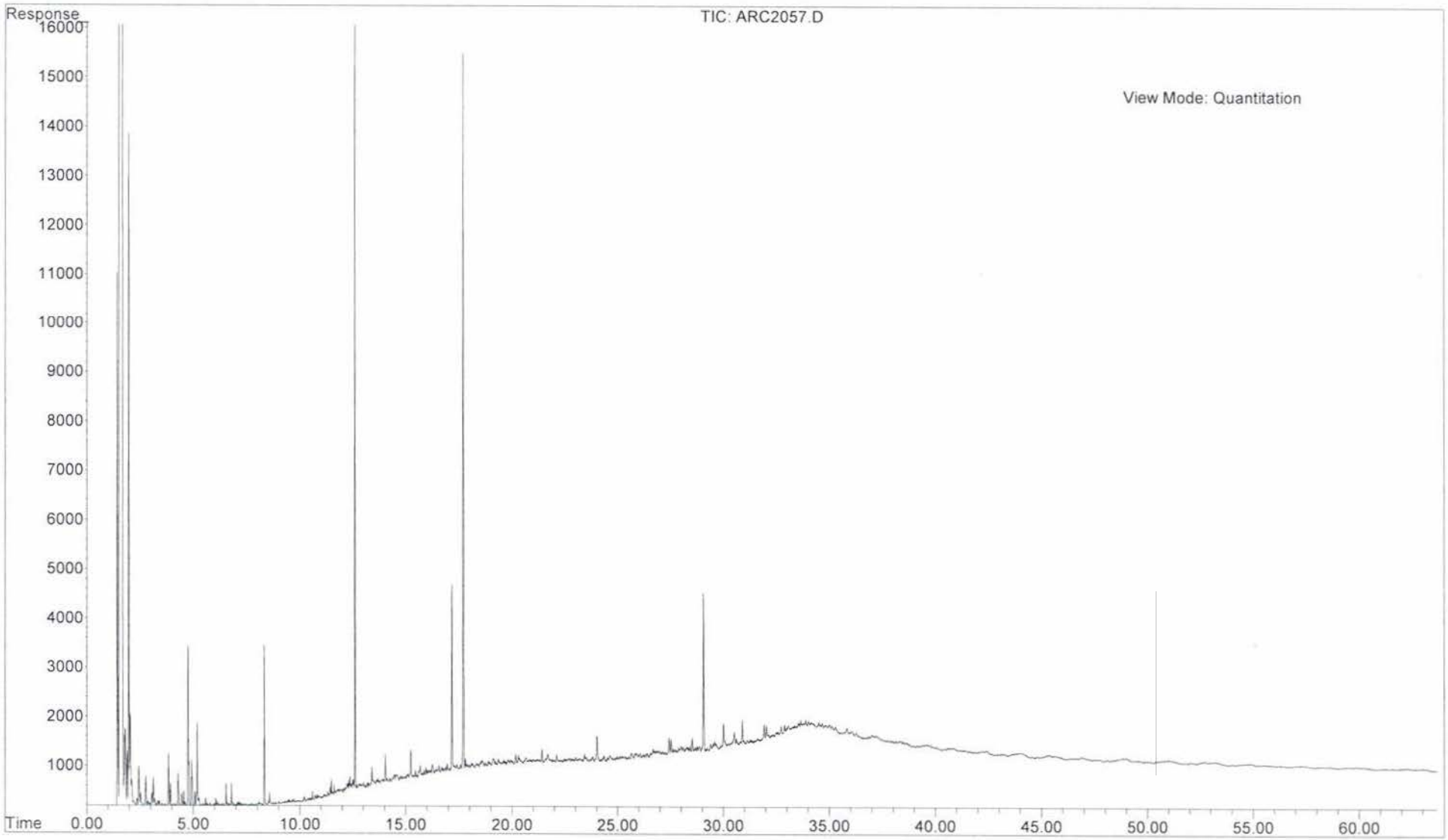
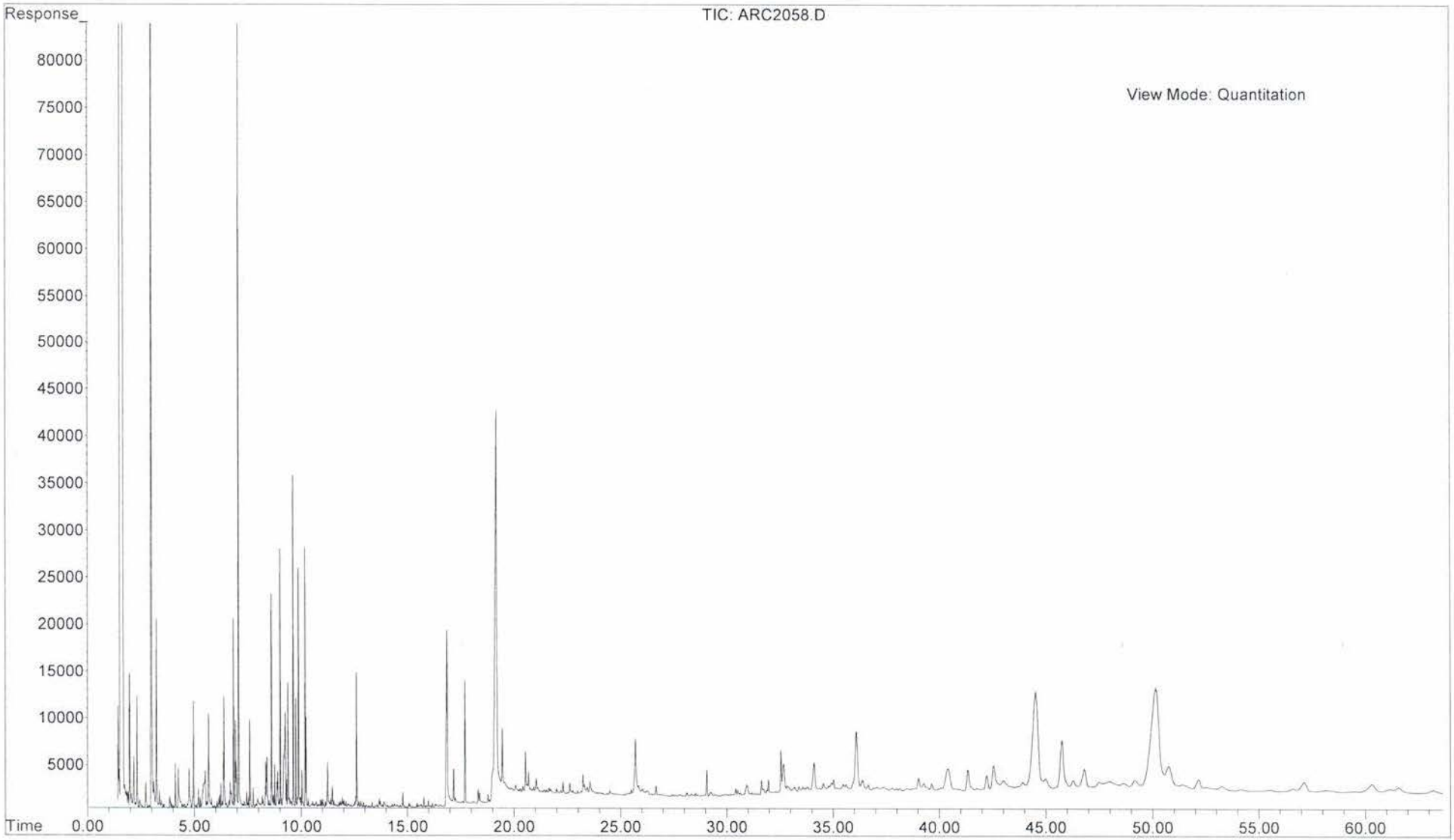
Operator : Meghan Dailey
Acquired : 07-Oct-2014, 04:03 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SHN-Cove-008(NB)092514
Misc Info :
Vial Number: 12



File :P:\2013\J13034\Aliphatics\ENV 3341\FID10247\ARC2058.D
Operator : Meghan Dailey
Acquired : 07-Oct-2014, 05:13 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SHN-Cove-009(NB)092914
Misc Info :
Vial Number: 13



Polycyclic Aromatic Hydrocarbon Concentration

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC2055.D	ARC2056.D	ARC2057.D	ARC2058.D
Client Name	SHN-Cove-006(NB)092514	SHN-Cove-007(NB)092514	SHN-Cove-008(NB)092514	SHN-Cove-009(NB)092914
Matrix	Net	Net	Net	Net
Collection Date	09/25/14	09/25/14	09/25/14	09/29/14
Received Date	09/26/14	09/26/14	09/26/14	09/30/14
Extraction Date	09/30/14	09/30/14	09/30/14	09/30/14
Extraction Batch	ENV 3341	ENV 3341	ENV 3341	ENV 3341
Date Acquired	10/3/14 2:39	10/3/14 3:48	10/3/14 4:58	10/3/14 9:34
Method	PAH-2014.M	PAH-2014.M	PAH-2014.M	PAH-2014.M
Sample	1.00	1.00	1.00	1.00
Dilution	10X	1X	1X	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	Su. Corrected Conc. (ng/Net)	Q	Su. Corrected Conc. (ng/Net)	Q	Su. Corrected Conc. (ng/Net)	Q
cis/trans Decalin	2040		<10	U	26.8		<10	U
C1-Decalins	4676		<10	U	50.9		<10	U
C2-Decalins	11186		<10	U	142		<10	U
C3-Decalins	26631		<10	U	241		<10	U
C4-Decalins	34479		<10	U	490		<10	U
Naphthalene	804		6.71	J	8.68	J	53.5	
C1-Naphthalenes	9308		10.1		19.2		7.98	J
C2-Naphthalenes	38729		66.8		181		19.6	
C3-Naphthalenes	60517		252		539		35.7	
C4-Naphthalenes	51767		308		811		<10	U
Benzothiophene	206		<10	U	0.931	J	<10	U
C1-Benzothiophenes	1868		<10	U	11.7		<10	U
C2-Benzothiophenes	7591		<10	U	28.0		<10	U
C3-Benzothiophenes	18788		<10	U	157		<10	U
C4-Benzothiophenes	23226		<10	U	339		<10	U
Biphenyl	1255		2.49	J	3.75	J	3.65	J
Acenaphthylene	384		<10	U	3.73	J	<10	U
Acenaphthene	783		<10	U	3.75	J	<10	U
Dibenzofuran	1112		9.79	J	13.6		13.7	
Fluorene	3137		13.1		24.4		10.2	
C1-Fluorenes	11659		17.6		139		<10	U
C2-Fluorenes	23989		266		461		<10	U
C3-Fluorenes	25717		647		860		<10	U
Carbazole	283		<10	U	8.34	J	12.0	
Anthracene	244		3.00	J	6.34	J	<10	U
Phenanthrene	9202		78.4		131		57.7	
C1-Phenanthrenes/Anthracenes	28181		431		686		75.8	
C2-Phenanthrenes/Anthracenes	49195		1264		1644		<10	U
C3-Phenanthrenes/Anthracenes	57113		1970		2295		<10	U
C4-Phenanthrenes/Anthracenes	30358		1281		1763		<10	U
Dibenzothiophene	7823		38.9		88.6		7.16	J
C1-Dibenzothiophenes	28765		309		575		12.8	
C2-Dibenzothiophenes	51555		1157		1561		20.0	
C3-Dibenzothiophenes	59426		2113		2470		<10	U
C4-Dibenzothiophenes	43361		1815		2077		<10	U
Fluoranthene	1193		36.1		40.8		9.14	J
Pyrene	2619		66.7		84.1		3.82	J
C1-Fluoranthenes/Pyrenes	11535		385		379		<10	U
C2-Fluoranthenes/Pyrenes	14089		487		592		<10	U
C3-Fluoranthenes/Pyrenes	15444		639		696		<10	U
C4-Fluoranthenes/Pyrenes	13720		372		540		<10	U
Naphthobenzothiophene	6149		238		279		<10	U
C1-Naphthobenzothiophenes	19026		867		1042		<10	U
C2-Naphthobenzothiophenes	29590		1581		1860		<10	U
C3-Naphthobenzothiophenes	32756		1455		1837		<10	U
C4-Naphthobenzothiophenes	20372		810		802		<10	U
Benz(a)anthracene	509		14.6		16.7		1.11	J
Chrysene/Triphenylene	2865		123		141		4.28	J
C1-Chrysenes	9489		359		448		<10	U
C2-Chrysenes	13364		619		649		<10	U
C3-Chrysenes	10041		429		388		<10	U
C4-Chrysenes	9486		351		251		<10	U
Benzo(b)fluoranthene	784		62.6		49.3		<10	U
Benzo(k,j)fluoranthene	109		19.5		8.01	J	<10	U
Benzo(a)fluoranthene	<100	U	<10	U	<10	U	<10	U
Benzo(e)pyrene	1404		68.5		75.2		<10	U
Benzo(a)pyrene	906		34.0		35.5		<10	U
Perylene	926		34.5		41.8		<10	U
Indeno(1,2,3-c,d)pyrene	323		20.0		21.1		<10	U
Dibenzo(a,h)anthracene	248		12.0		12.5		<10	U
Benzo(g,h,i)perylene	1454		82.4		84.7		<10	U
Total PAHs	943756		21225		28236		348	

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC2055.D	ARC2056.D	ARC2057.D	ARC2058.D
Client Name	SHN-Cove-006(NB)092514	SHN-Cove-007(NB)092514	SHN-Cove-008(NB)092514	SHN-Cove-009(NB)092914
Matrix	Net	Net	Net	Net
Collection Date	09/25/14	09/25/14	09/25/14	09/29/14
Received Date	09/26/14	09/26/14	09/26/14	09/30/14
Extraction Date	09/30/14	09/30/14	09/30/14	09/30/14
Extraction Batch	ENV 3341	ENV 3341	ENV 3341	ENV 3341
Date Acquired	10/3/14 2:39	10/3/14 3:48	10/3/14 4:58	10/3/14 9:34
Method	PAH-2014.M	PAH-2014.M	PAH-2014.M	PAH-2014.M
Sample	1.00	1.00	1.00	1.00
Dilution	10X	1X	1X	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	Su. Corrected Conc. (ng/Net)	Q	Su. Corrected Conc. (ng/Net)	Q	Su. Corrected Conc. (ng/Net)	Q
Individual Alkyl Isomers and Hopanes								
2-Methylnaphthalene	7849		9.15	J	15.6		8.86	J
1-Methylnaphthalene	6950		6.78	J	15.0		3.65	J
2,6-Dimethylnaphthalene	9442		14.4		42.6		2.75	J
1,6,7-Trimethylnaphthalene	6828		25.4		66.5		1.44	J
1-Methylfluorene	9434		104		104		<10	U
4-Methyldibenzothiophene	17858		188		357		8.66	J
2/3-Methyldibenzothiophene	13383		140		261		4.66	J
1-Methyldibenzothiophene	10503		121		217		5.27	J
3-Methylphenanthrene	7482		91.4		157		7.16	J
2-Methylphenanthrene	8926		113		193		7.78	J
2-Methylanthracene	475		78.3		84.2		68.6	
4/9-Methylphenanthrene	11321		159		260		6.49	J
1-Methylphenanthrene	6883		94.2		160		4.31	J
3,6-Dimethylphenanthrene	2660		75.6		100		<10	U
Retene	2866		118		143		<10	U
2-Methylfluoranthene	773		27.8		34.0		<10	U
Benzo(b)fluorene	1445		27.3		36.2		<10	U
C29-Hopane	21554		1761		1867		<10	U
18a-Oleanane	<100	U	<10	U	<10	U	<10	U
C30-Hopane	26197		2082		2215		<10	U
C20-TAS	6313		374		395		<10	U
C21-TAS	8484		435		465		<10	U
C26(20S)-TAS	9381		671		644		<10	U
C26(20R)/C27(20S)-TAS	29103		1815		2111		<10	U
C28(20S)-TAS	24356		1529		1541		<10	U
C27(20R)-TAS	19980		1382		1357		<10	U
C28(20R)-TAS	22326		1327		1440		<10	U
Surrogate Recovery								
Naphthalene-d8	71	D	59		42		65	
Acenaphthene-d10	96	D	81		69		84	
Phenanthrene-d10	98	D	90		84		106	
Chrysene-d12	96	D	94		92		88	
Perylene-d12	93	D	91		91		64	

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Method Blank Report

Sample Name	ENV3341A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	09/30/14
Extraction Batch	ENV 3341
Date Acquired	10/2/14 23:10
Method	PAH-2014.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	3X MDL	Actual MDL
cis/trans Decalin	<10	U	30.0	10.0
C1-Decalins	<10	U	30.0	10.0
C2-Decalins	<10	U	30.0	10.0
C3-Decalins	<10	U	30.0	10.0
C4-Decalins	<10	U	30.0	10.0
Naphthalene	<10	U	30.0	10.0
C1-Naphthalenes	<10	U	30.0	10.0
C2-Naphthalenes	<10	U	30.0	10.0
C3-Naphthalenes	<10	U	30.0	10.0
C4-Naphthalenes	<10	U	30.0	10.0
Benzothiophene	<10	U	30.0	10.0
C1-Benzothiophenes	<10	U	30.0	10.0
C2-Benzothiophenes	<10	U	30.0	10.0
C3-Benzothiophenes	<10	U	30.0	10.0
C4-Benzothiophenes	<10	U	30.0	10.0
Biphenyl	<10	U	30.0	10.0
Acenaphthylene	<10	U	30.0	10.0
Acenaphthene	<10	U	30.0	10.0
Dibenzofuran	<10	U	30.0	10.0
Fluorene	<10	U	30.0	10.0
C1-Fluorenes	<10	U	30.0	10.0
C2-Fluorenes	<10	U	30.0	10.0
C3-Fluorenes	<10	U	30.0	10.0
Carbazole	<10	U	30.0	10.0
Anthracene	<10	U	30.0	10.0
Phenanthrene	<10	U	30.0	10.0
C1-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C2-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C3-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C4-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
Dibenzothiophene	<10	U	30.0	10.0
C1-Dibenzothiophenes	<10	U	30.0	10.0
C2-Dibenzothiophenes	<10	U	30.0	10.0
C3-Dibenzothiophenes	<10	U	30.0	10.0
C4-Dibenzothiophenes	<10	U	30.0	10.0
Fluoranthene	<10	U	30.0	10.0
Pyrene	<10	U	30.0	10.0
C1-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C2-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C3-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C4-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
Naphthobenzothiophene	<10	U	30.0	10.0
C1-Naphthobenzothiophenes	<10	U	30.0	10.0
C2-Naphthobenzothiophenes	<10	U	30.0	10.0
C3-Naphthobenzothiophenes	<10	U	30.0	10.0
C4-Naphthobenzothiophenes	<10	U	30.0	10.0
Benz(a)anthracene	<10	U	30.0	10.0
Chrysene/Triphenylene	<10	U	30.0	10.0
C1-Chrysenes	<10	U	30.0	10.0
C2-Chrysenes	<10	U	30.0	10.0
C3-Chrysenes	<10	U	30.0	10.0
C4-Chrysenes	<10	U	30.0	10.0
Benzo(b)fluoranthene	<10	U	30.0	10.0
Benzo(k,j)fluoranthene	<10	U	30.0	10.0
Benzo(a)fluoranthene	<10	U	30.0	10.0
Benzo(e)pyrene	<10	U	30.0	10.0
Benzo(a)pyrene	<10	U	30.0	10.0
Perylene	<10	U	30.0	10.0
Indeno(1,2,3-c,d)pyrene	<10	U	30.0	10.0
Dibenzo(a,h)anthracene	<10	U	30.0	10.0
Benzo(g,h,i)perylene	<10	U	30.0	10.0
Total PAHs	0.00			

Sample Name	ENV3341A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	09/30/14
Extraction Batch	ENV 3341
Date Acquired	10/2/14 23:10
Method	PAH-2014.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	3X MDL	Actual MDL
Individual Alkyl Isomers and Hopanes				
2-Methylnaphthalene	<10	U	30.0	10.0
1-Methylnaphthalene	<10	U	30.0	10.0
2,6-Dimethylnaphthalene	<10	U	30.0	10.0
1,6,7-Trimethylnaphthalene	<10	U	30.0	10.0
1-Methylfluorene	<10	U	30.0	10.0
4-Methyldibenzothiophene	<10	U	30.0	10.0
2/3-Methyldibenzothiophene	<10	U	30.0	10.0
1-Methyldibenzothiophene	<10	U	30.0	10.0
3-Methylphenanthrene	<10	U	30.0	10.0
2-Methylphenanthrene	<10	U	30.0	10.0
2-Methylanthracene	<10	U	30.0	10.0
4/9-Methylphenanthrene	<10	U	30.0	10.0
1-Methylphenanthrene	<10	U	30.0	10.0
3,6-Dimethylphenanthrene	<10	U	30.0	10.0
Retene	<10	U	30.0	10.0
2-Methylfluoranthene	<10	U	30.0	10.0
Benzo(b)fluorene	<10	U	30.0	10.0
C29-Hopane	<10	U	30.0	10.0
18a-Oleanane	<10	U	30.0	10.0
C30-Hopane	<10	U	30.0	10.0
C20-TAS	<10	U	30.0	10.0
C21-TAS	<10	U	30.0	10.0
C26(20S)-TAS	<10	U	30.0	10.0
C26(20R)/C27(20S)-TAS	<10	U	30.0	10.0
C28(20S)-TAS	<10	U	30.0	10.0
C27(20R)-TAS	<10	U	30.0	10.0
C28(20R)-TAS	<10	U	30.0	10.0

Surrogate Recovery	
Naphthalene-d8	82
Acenaphthene-d10	86
Phenanthrene-d10	92
Chrysene-d12	94
Perylene-d12	96

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3341B.D	ENV3341C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	09/30/14	09/30/14
Extraction Batch	ENV 3341	ENV 3341
Date Acquired	10/3/14 0:20	10/3/14 1:29
Method	PAH-2014.M	PAH-2014.M
Sample	1.00	1.00
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	80.7		81		80.7		82		0		99.0
C1-Decalins	NA				NA						
C2-Decalins	NA				NA						
C3-Decalins	NA				NA						
C4-Decalins	NA				NA						
Naphthalene	84.1		85		82.4		84		2		98.6
C1-Naphthalenes	NA				NA						
C2-Naphthalenes	NA				NA						
C3-Naphthalenes	NA				NA						
C4-Naphthalenes	NA				NA						
Benzothiophene	83.8		84		83.1		83		1		99.7
C1-Benzothiophenes	NA				NA						
C2-Benzothiophenes	NA				NA						
C3-Benzothiophenes	NA				NA						
C4-Benzothiophenes	NA				NA						
Biphenyl	86.2		86		86.4		87		0		99.7
Acenaphthylene	87.4		87		87.1		87		0		99.9
Acenaphthene	89.0		89		88.1		88		1		101
Dibenzofuran	90.4		91		89.7		90		1		99.8
Fluorene	87.6		89		87.7		89		0		98.6
C1-Fluorenes	NA				NA						
C2-Fluorenes	NA				NA						
C3-Fluorenes	NA				NA						
Carbazole	89.5		90		91.2		92		2		99.7
Anthracene	91.6		91		91.5		91		0		100
Phenanthrene	93.9		94		93.6		94		0		99.7
C1-Phenanthrenes/Anthracenes	NA				NA						
C2-Phenanthrenes/Anthracenes	NA				NA						
C3-Phenanthrenes/Anthracenes	NA				NA						
C4-Phenanthrenes/Anthracenes	NA				NA						
Dibenzothiophene	112		114		112		114		0		98.9
C1-Dibenzothiophenes	NA				NA						
C2-Dibenzothiophenes	NA				NA						
C3-Dibenzothiophenes	NA				NA						
C4-Dibenzothiophenes	NA				NA						
Fluoranthene	97.6		97		98.7		98		1		101
Pyrene	95.8		96		96.4		96		1		100
C1-Fluoranthenes/Pyrenes	NA				NA						
C2-Fluoranthenes/Pyrenes	NA				NA						
C3-Fluoranthenes/Pyrenes	NA				NA						
C4-Fluoranthenes/Pyrenes	NA				NA						
Naphthobenzothiophene	98.0		97		99.2		99		1		101
C1-Naphthobenzothiophenes	NA				NA						
C2-Naphthobenzothiophenes	NA				NA						
C3-Naphthobenzothiophenes	NA				NA						
C4-Naphthobenzothiophenes	NA				NA						
Benz(a)anthracene	94.9		96		100		101		5		99.0
Chrysene/Triphenylene	94.7		96		98.4		99		4		99.1
C1-Chrysenes	NA				NA						
C2-Chrysenes	NA				NA						
C3-Chrysenes	NA				NA						
C4-Chrysenes	NA				NA						
Benzo(b)fluoranthene	95.1		95		94.9		95		0		100
Benzo(k,j)fluoranthene	96.7		97		96.3		96		0		100
Benzo(a)fluoranthene	NA				NA						
Benzo(e)pyrene	99.6		99		99.8		100		0		100
Benzo(a)pyrene	94.7		95		94.6		95		0		99.9
Perylene	95.6		96		95.8		96		0		100
Indeno(1,2,3-c,d)pyrene	94.1		94		94.9		95		1		100
Dibenzo(a,h)anthracene	94.4		95		95.2		96		1		99.2
Benzo(g,h,i)perylene	91.0		92		90.9		92		0		98.6
Average % Recovery			93				93				

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3341B.D	ENV3341C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	09/30/14	09/30/14
Extraction Batch	ENV 3341	ENV 3341
Date Acquired	10/3/14 0:20	10/3/14 1:29
Method	PAH-2014.M	PAH-2014.M
Sample	1.00	1.00
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	86.2		87		86.0		87		0		99.3
1-Methylnaphthalene	86.6		87		85.6		86		1		99.5
2,6-Dimethylnaphthalene	87.1		87		86.7		87		1		100
1,6,7-Trimethylnaphthalene	90.3		90		89.2		89		1		100
1-Methylfluorene	92.1		91		91.5		91		1		101
4-Methyldibenzothiophene	96.9		96		97.8		97		1		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	95.6		96		95.4		96		0		99.3
3,6-Dimethylphenanthrene	97.1		97		97.1		97		0		100
Retene	92.7		93		92.1		92		1		100
2-Methylfluoranthene	96.4		96		96.1		96		0		100
Benzo(b)fluorene	100		100		101		100		0		100
C29-Hopane	NA				NA						
18a-Oleanane	NA				NA						
C30-Hopane	93.5		94		95.4		95		2		100
C20-TAS	NA				NA						
C21-TAS	NA				NA						
C26(20S)-TAS	NA				NA						
C26(20R)/C27(20S)-TAS	NA				NA						
C28(20S)-TAS	NA				NA						
C27(20R)-TAS	NA				NA						
C28(20R)-TAS	NA				NA						

Surrogate Recovery		
Naphthalene-d8	86	82
Acenaphthene-d10	91	87
Phenanthrene-d10	96	93
Chrysene-d12	96	95
Perylene-d12	99	96

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

Sample Name	MS70123K.D
Client Name	PAH-WKSRM2779-4.0-005
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3341
Date Acquired	10/2/14 22:01
Method	PAH-2014.M
Sample Weight (mg)	4.2

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	756						
C1-Decalins	1193						
C2-Decalins	1127						
C3-Decalins	887						
C4-Decalins	580						
Naphthalene	754			13	855 ± 46	647	1081
C1-Naphthalenes	1535						
C2-Naphthalenes	1970						
C3-Naphthalenes	1487						
C4-Naphthalenes	795						
Benzothiophene	9.06	J					
C1-Benzothiophenes	35.3						
C2-Benzothiophenes	23.2						
C3-Benzothiophenes	37.8						
C4-Benzothiophenes	27.7						
Biphenyl	176						
Acenaphthylene	9.63	J					
Acenaphthene	8.74	J					
Dibenzofuran	34.3						
Fluorene	129						
C1-Fluorenes	313						
C2-Fluorenes	467						
C3-Fluorenes	274						
Carbazole	4.6	J					
Anthracene	3.8	J		9	3.42 ± 0.59	2.26	4.81
Phenanthrene	273			6	258 ± 27	185	342
C1-Phenanthrenes/Anthracenes	657						
C2-Phenanthrenes/Anthracenes	790						
C3-Phenanthrenes/Anthracenes	501						
C4-Phenanthrenes/Anthracenes	241						
Dibenzothiophene	51.1			1	51.8 ± 2.1	39.8	64.7
C1-Dibenzothiophenes	139						
C2-Dibenzothiophenes	198						
C3-Dibenzothiophenes	115						
C4-Dibenzothiophenes	76.3						
Fluoranthene	4.91	J		12	4.36 ± 0.40	3.17	5.71
Pyrene	12.1			21	14.81 ± 0.39	11.5	18.2
C1-Fluoranthenes/Pyrenes	80.6						
C2-Fluoranthenes/Pyrenes	135						
C3-Fluoranthenes/Pyrenes	168						
C4-Fluoranthenes/Pyrenes	103						
Naphthobenzothiophene	28.5						
C1-Naphthobenzothiophenes	65.4						
C2-Naphthobenzothiophenes	91.2						
C3-Naphthobenzothiophenes	65.8						
C4-Naphthobenzothiophenes	26.0						
Benz(a)anthracene	6.13	J		14	7.03 ± 0.85	4.94	9.46
Chrysene/Triphenylene	51.8			9	47.4 ± 1.7	36.6	58.9
C1-Chrysenes	125						
C2-Chrysenes	156						
C3-Chrysenes	109						
C4-Chrysenes	91.2						
Benzo(b)fluoranthene	5.84	J		4	5.62 ± 0.34	4.22	7.15
Benzo(k,j)fluoranthene	0.943	J					
Benzo(a)fluoranthene	<10	U					
Benzo(e)pyrene	10.7			1	10.78 ± 0.60	8.14	13.7
Benzo(a)pyrene	1.63	J					
Perylene	0.567	J					
Indeno(1,2,3-c,d)pyrene	0.628	J					
Dibenzo(a,h)anthracene	0.506	J		13	0.574 ± 0.091	0.386	0.798
Benzo(g,h,i)perylene	1.86	J		13	2.11 ± 0.26	1.48	2.84
Total PAHs	17020						

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

Sample Name	MS70123K.D
Client Name	PAH-WKSRM2779-4.0-005
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3341
Date Acquired	10/2/14 22:01
Method	PAH-2014.M
Sample Weight (mg)	4.2

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)
Individual Alkyl Isomers and Hopanes							
2-Methylnaphthalene	1412			14	1630 ± 50	1264	2016
1-Methylnaphthalene	1018			11	1140 ± 20	896	1392
2,6-Dimethylnaphthalene	535						
1,6,7-Trimethylnaphthalene	291						
1-Methylfluorene	270						
4-Methyldibenzothiophene	113						
2/3-Methyldibenzothiophene	52.6						
1-Methyldibenzothiophene	35.8						
3-Methylphenanthrene	186			10	206 ± 32	139	286
2-Methylphenanthrene	210			9	230 ± 14	173	293
2-Methylanthracene	18.2						
4/9-Methylphenanthrene	250			7	232 ± 19	170	301
1-Methylphenanthrene	153			10	169 ± 10	127	215
3,6-Dimethylphenanthrene	49.3						
Retene	6.09	J					
2-Methylfluoranthene	7.29	J					
Benzo(b)fluorene	17.8						
C29-Hopane	22.7						
18a-Oleanane	<10	U					
C30-Hopane	51.4						
C20-TAS	35.0						
C21-TAS	52.2						
C26(20S)-TAS	30.2						
C26(20R)/C27(20S)-TAS	100						
C28(20S)-TAS	70.3						
C27(20R)-TAS	59.7						
C28(20R)-TAS	49.4						

Surrogate Recovery	
Naphthalene-d8	85
Acenaphthene-d10	96
Phenanthrene-d10	94
Chrysene-d12	96
Perylene-d12	97

Peak Resolution	
4/9-Methylphenanthrene from 1-Methylyphenanthrene (m/z 192)	94%

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

Sample Name	MS70123J.D
Client Name	PAH-WKCCV-250-042
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3341
Date Acquired	10/2/14 20:52
Method	PAH-2014.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	249		0.5	248	210	285
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	251		1.9	247	210	283
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	254		2.0	249	212	287
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	259		4.0	249	212	287
Acenaphthylene	248		0.5	250	212	287
Acenaphthene	251		0.3	252	214	289
Dibenzofuran	262		4.9	250	212	287
Fluorene	249		1.0	247	210	283
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	246		1.1	249	212	287
Anthracene	257		2.8	250	213	288
Phenanthrene	266		6.5	249	212	287
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	263		6.2	247	210	284
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	264		4.6	252	214	290
Pyrene	266		6.1	250	213	288
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
C4-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	258		2.6	251	214	289
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
C4-Naphthobenzothiophenes	NA					
Benz(a)anthracene	246		0.5	248	210	285
Chrysene/Triphenylene	261		5.3	248	211	285
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	258		3.7	249	212	286
Benzo(k,j)fluoranthene	272		8.3	251	213	288
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	268		6.6	251	213	288
Benzo(a)pyrene	263		5.2	250	212	287
Perylene	265		5.7	250	213	288
Indeno(1,2,3-c,d)pyrene	251		0.5	250	213	288
Dibenzo(a,h)anthracene	249		0.3	248	211	285
Benzo(g,h,i)perylene	250		1.4	247	210	283

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

Sample Name	MS70123J.D
Client Name	PAH-WKCCV-250-042
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3341
Date Acquired	10/2/14 20:52
Method	PAH-2014.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	251		1.2	248	211	285
1-Methylnaphthalene	252		1.4	249	211	286
2,6-Dimethylnaphthalene	252		0.7	250	212	287
1,6,7-Trimethylnaphthalene	247		1.2	251	213	288
1-Methylfluorene	242		3.9	252	214	290
4-Methyldibenzothiophene	260		3.3	252	214	289
2/3-Methyldibenzothiophene	NA					
1-Methyldibenzothiophene	NA					
3-Methylphenanthrene	NA					
2-Methylphenanthrene	NA					
2-Methylanthracene	NA					
4/9-Methylphenanthrene	NA					
1-Methylphenanthrene	251		1.0	248	211	285
3,6-Dimethylphenanthrene	248		1.2	251	213	288
Retene	238		4.9	250	213	288
2-Methylfluoranthene	246		1.9	250	213	288
Benzo(b)fluorene	239		4.8	251	213	289
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	240		3.9	250	213	288
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	101
Acenaphthene-d10	99
Phenanthrene-d10	104
Chrysene-d12	106
Perylene-d12	104

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

Sample Name	MS70123I.D
Client Name	PAH-WKICV-250-008
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3341
Date Acquired	10/2/14 19:42
Method	PAH-2014.M
Sample Volume (mL)	1.0

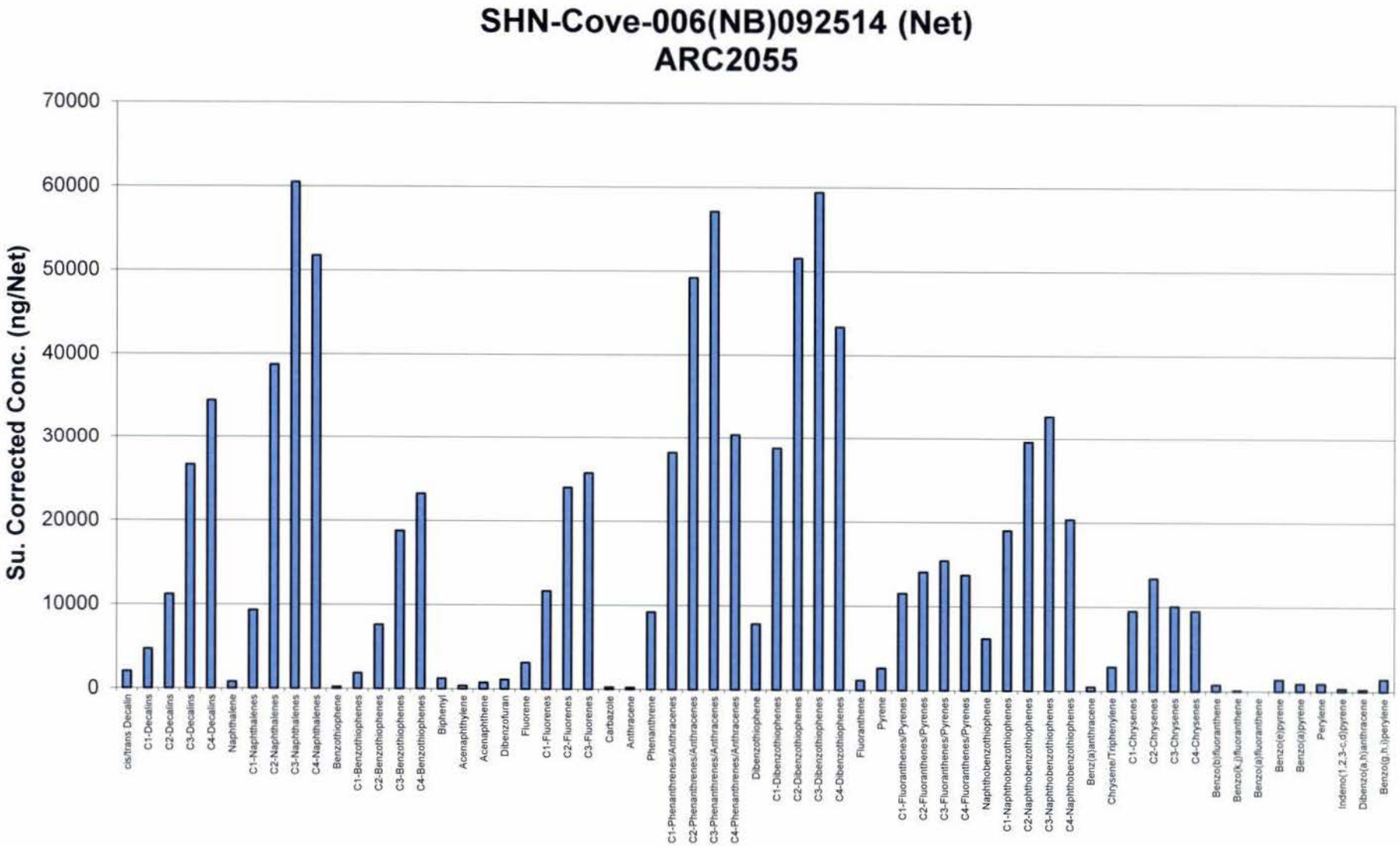
Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
cis/trans Decalin	228		9.5	250	200	300
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	225		10.8	250	200	300
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	222		11.9	250	200	300
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	222		12.2	251	201	301
Acenaphthylene	224		11.1	250	200	300
Acenaphthene	226		10.2	250	200	300
Dibenzofuran	228		9.5	250	200	300
Fluorene	225		10.5	250	200	300
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	211		17.2	250	200	300
Anthracene	236		6.0	250	200	300
Phenanthrene	239		4.4	250	200	300
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	230		8.5	250	200	300
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	239		4.8	250	200	300
Pyrene	242		3.2	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	227		9.9	250	200	300
Chrysene/Triphenylene	238		5.1	250	200	300
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	255		1.9	250	200	300
Benzo(k,j)fluoranthene	240		4.3	250	200	300
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	229		8.8	250	200	300
Benzo(a)pyrene	244		2.3	250	200	300
Perylene	227		10.1	251	200	301
Indeno(1,2,3-c,d)pyrene	225		10.4	250	200	300
Dibenzo(a,h)anthracene	227		9.6	250	200	300
Benzo(g,h,i)perylene	235		6.4	250	200	300

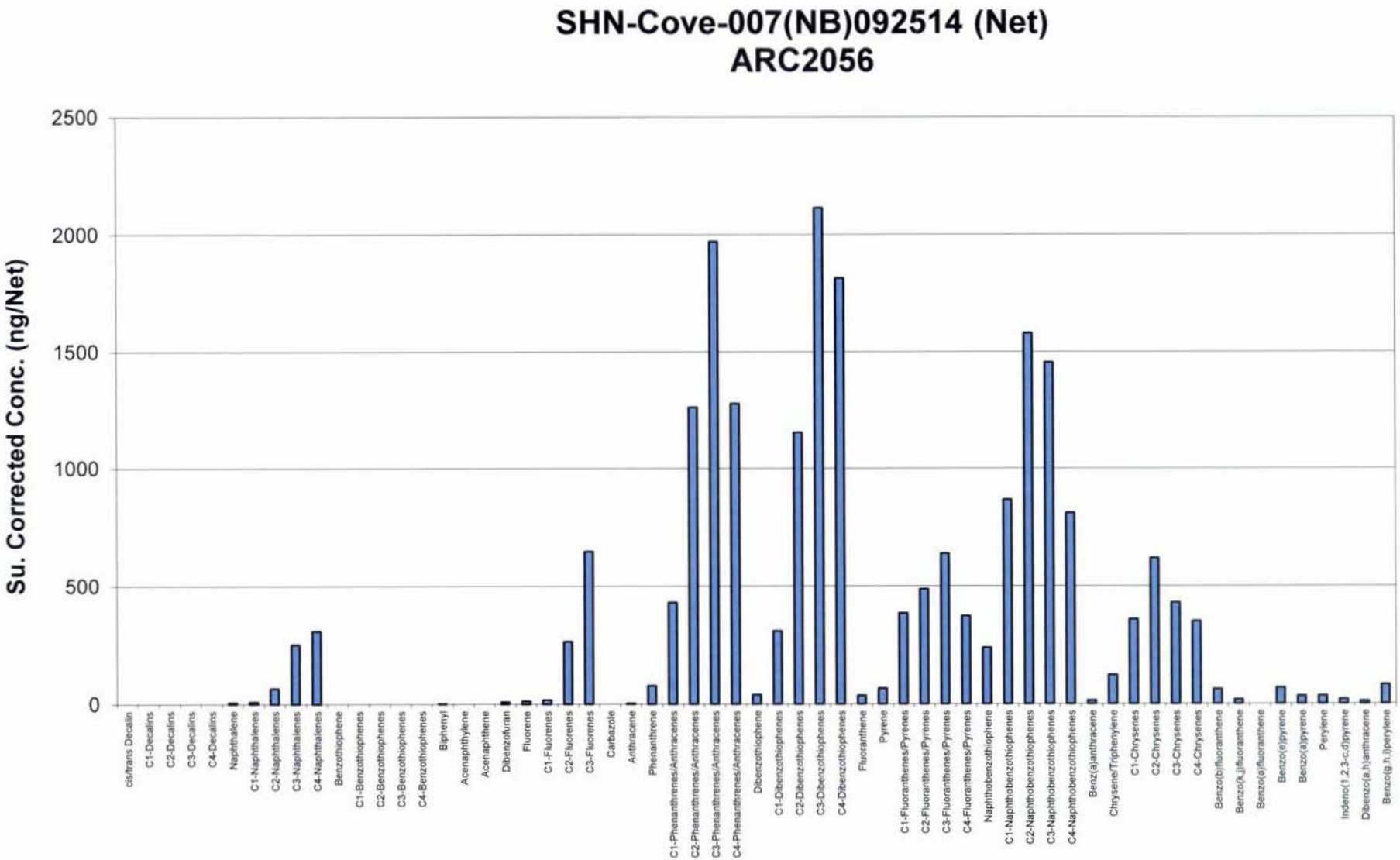
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

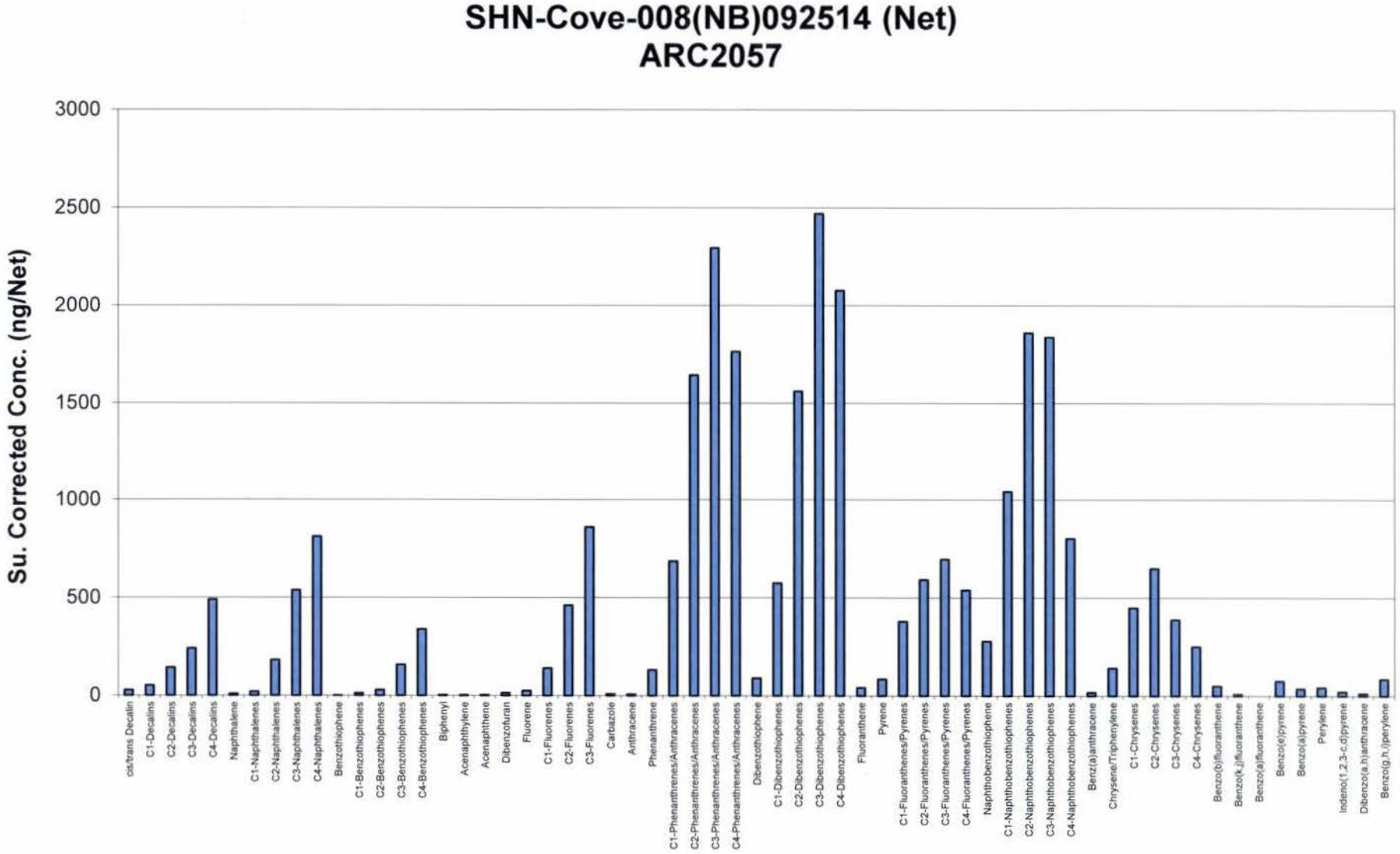
Sample Name	MS70123I.D
Client Name	PAH-WKICV-250-008
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3341
Date Acquired	10/2/14 19:42
Method	PAH-2014.M
Sample Volume (mL)	1.0

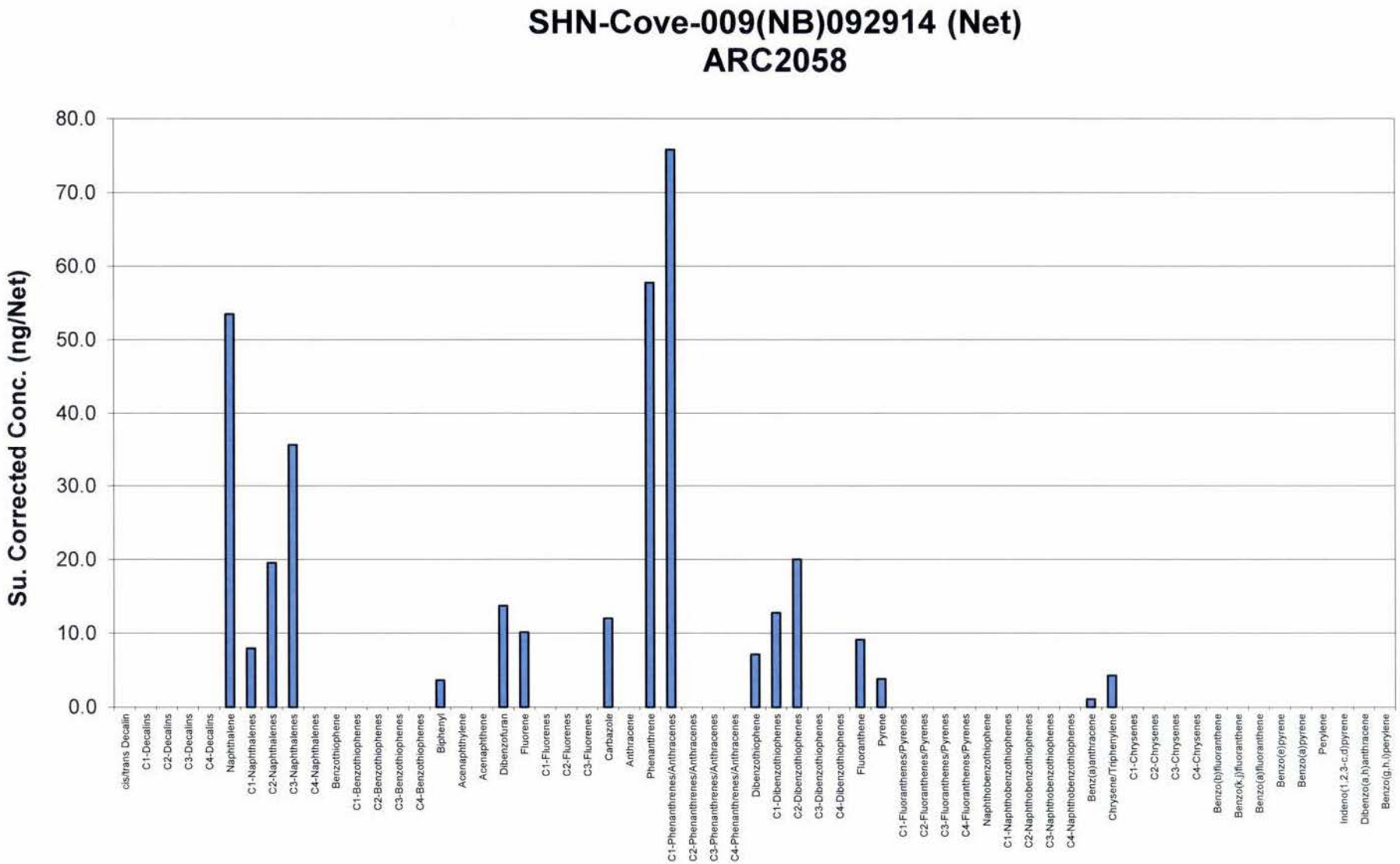
Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	234		6.6	250	200	301
1-Methylnaphthalene	233		7.3	251	200	301
2,6-Dimethylnaphthalene	220		12.8	250	200	300
1,6,7-Trimethylnaphthalene	226		10.2	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	225		10.6	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	239		4.4	250	200	300
Acenaphthene-d10	238		5.0	250	200	300
Phenanthrene-d10	250		0.0	250	200	300
Chrysene-d12	249		0.4	250	200	300
Perylene-d12	249		0.3	250	200	300

Polycyclic Aromatic Hydrocarbon Histograms


SHN-Cove-006(NB)092514 (Net)
ARC2055
Su. Corrected Conc. (ng/Net)
70000
60000
50000
40000
30000
20000
10000
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-Dibenzothiophenes
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

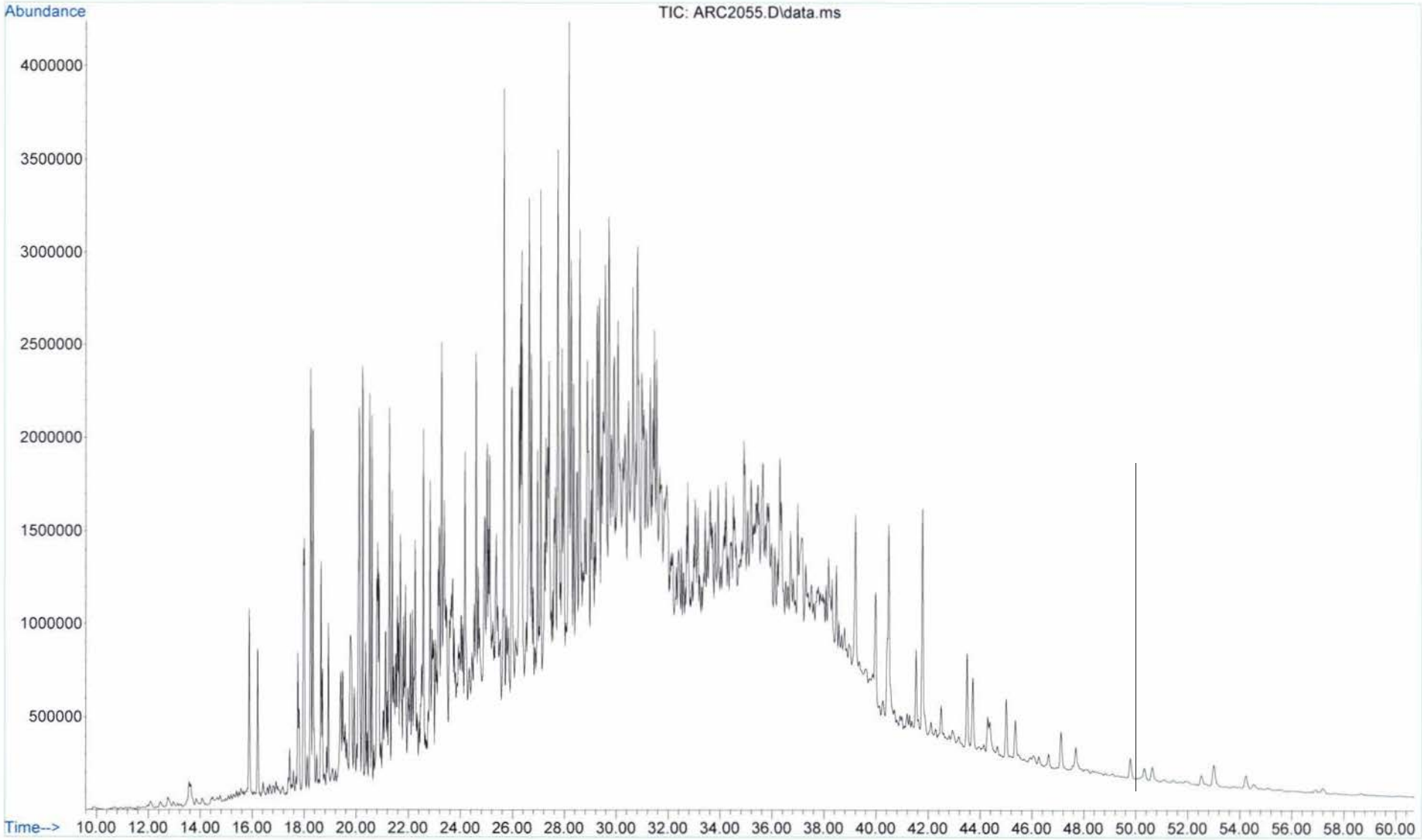

SHN-Cove-007(NB)092514 (Net)
ARC2056
Su. Corrected Conc. (ng/Net)
2500
2000
1500
1000
500
0
cis/trans Decalin
C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
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-Dibenzothiophenes
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


SHN-Cove-008(NB)092514 (Net)
ARC2057
Su. Corrected Conc. (ng/Net)
3000
2500
2000
1500
1000
500
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-Dibenzothiophenes
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

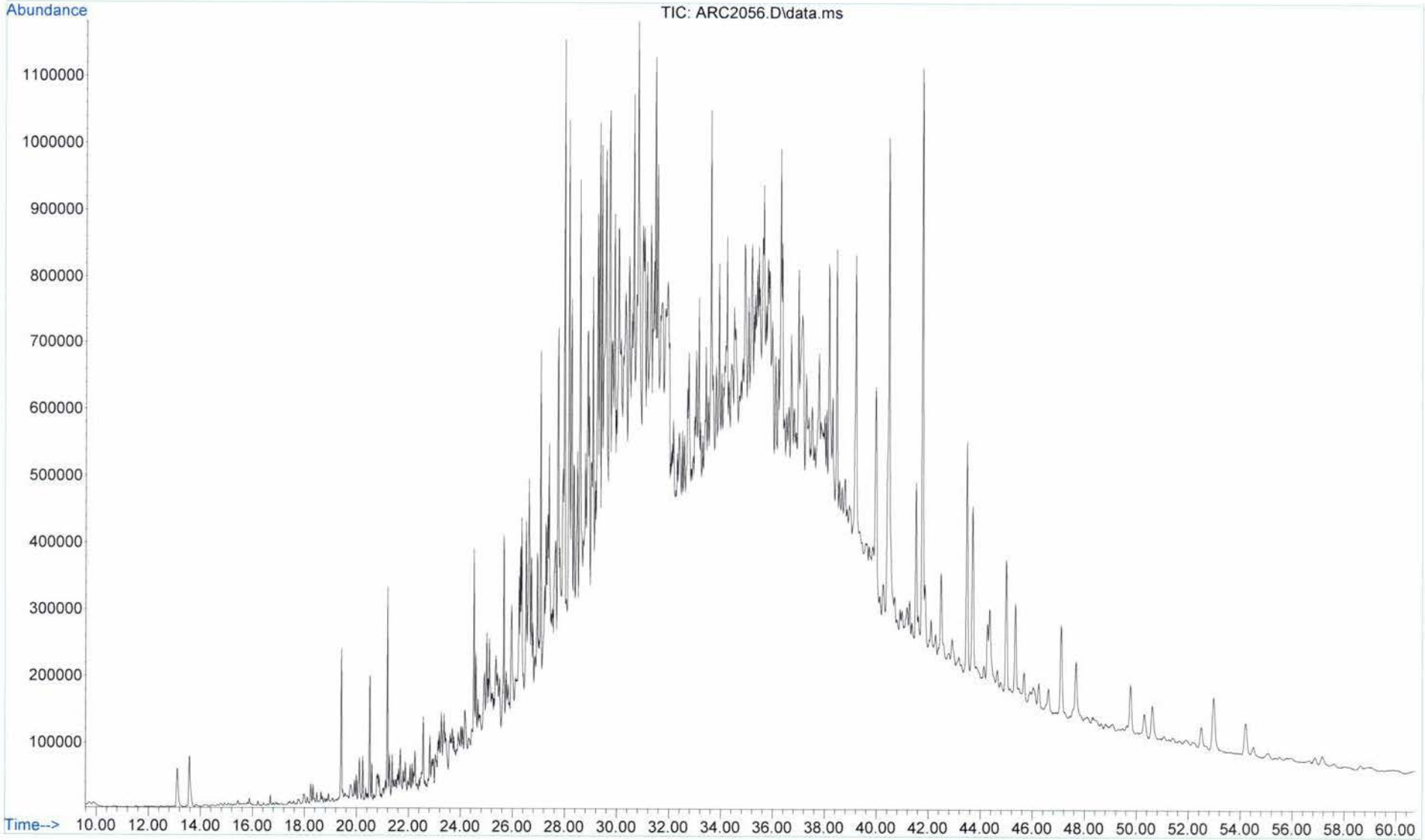

SHN-Cove-009(NB)092914 (Net)
ARC2058
Su. Corrected Conc. (ng/Net)
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
cis/trans Decalin
C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
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-Dibenzothiophenes
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

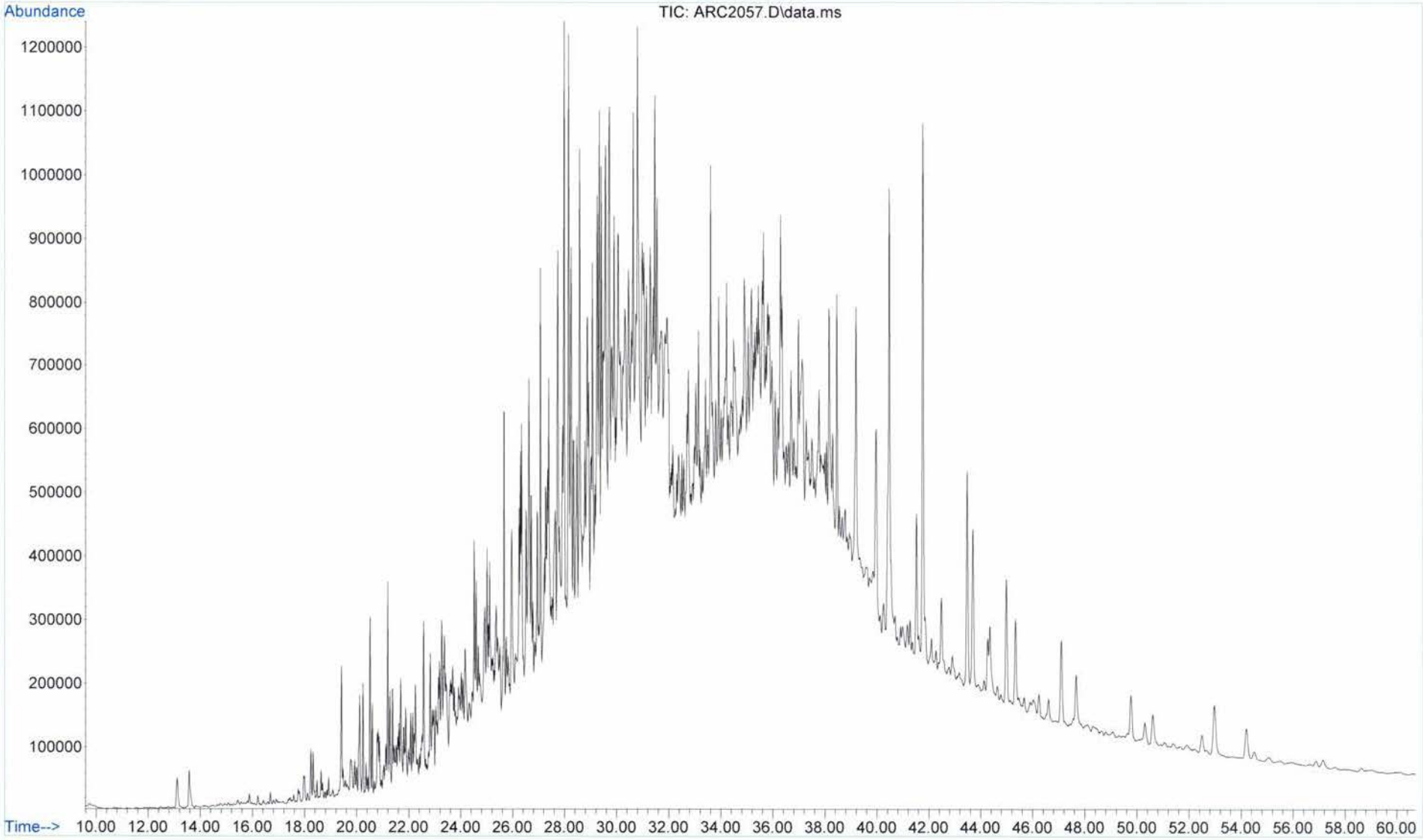
```
File        :C:\GCMS7\MS70123\ARC2055.D
Operator    : ECM(YMIAO)
Acquired    :  3 Oct 2014    2:39      using AcqMethod PAH-2014.M
Instrument  :   GCMS 7
Sample Name: SHN-Cove-006(NB)092514
Misc Info   :
Vial Number: 15
```



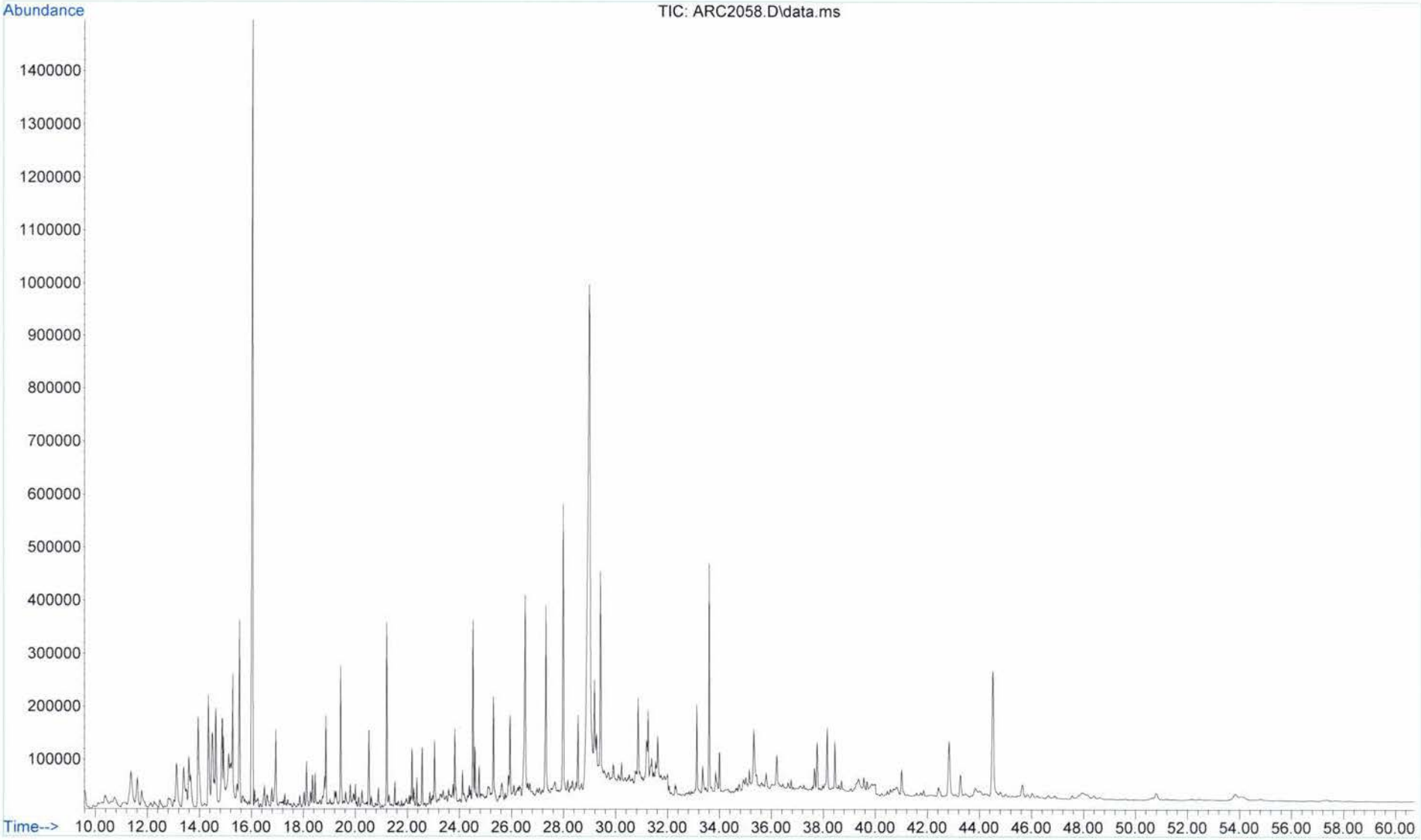
File :C:\GCMS7\MS70123\ARC2056.D
Operator : ECM(YMIAO)
Acquired : 3 Oct 2014 3:48 using AcqMethod PAH-2014.M
Instrument : GCMS 7
Sample Name: SHN-Cove-007(NB)092514
Misc Info :
Vial Number: 16



```
File        :C:\GCMS7\MS70123\ARC2057.D
Operator    : ECM(YMIAO)
Acquired    :  3 Oct 2014    4:58      using AcqMethod PAH-2014.M
Instrument :    GCMS 7
Sample Name: SHN-Cove-008(NB)092514
Misc Info   :
Vial Number: 17
```



```
File        :C:\GCMS7\MS70123\ARC2058.D
Operator    : ECM(YMIAO)
Acquired    :  3 Oct 2014    9:34      using AcqMethod PAH-2014.M
Instrument  :   GCMS 7
Sample Name: SHN-Cove-009(NB)092914
Misc Info   :
Vial Number: 18
```



Total Petroleum Hydrocarbons/ Aliphatic Hydrocarbons Raw Data

B&B LABORATORIES ALIPHATICS/TEH QA FORM

Extraction Page: ENV 3341	Analyst: M. Dailey
Client: Arcadis Mayflower	Date: October 7, 2014
Job: #: J13034	Project Quality Manager: W Friend
SDG #: 14093001, 14092601	Date: 10/15/14

Initial Calibration: No Failures	ICV 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	
MC-252 Reference Oil No Failures	
Mass Discrimination Check (n-C36/n-C20 >0.7) No Failures	

FID Sequence Summary Report

B&B Laboratories, Inc.

Sequence name: FID10247 2014-10-06

Acquisition date: 10/6/2014 10:21:50 AM

Acquired by: Meghan Dailey

Data Directory C:\CHEM32\3\DATA\FID10247 2014-10-06

Line	Location	Sample Name	Datafile	Method	Injection Date
4	Vial 1	Solvent Blank	FID10247A.D	ALIFRONT.M	10/06/2014 13:58:06
5	Vial 2	AL-WKCC-25-030	FID10247B.D	ALIFRONT.M	10/06/2014 15:08:19
6	Vial 3	AL-SRM2779-20-003	FID10247C.D	ALIFRONT.M	10/06/2014 16:18:39
7	Vial 1	Solvent Blank	FID10247D.D	ALIFRONT.M	10/06/2014 17:28:52
8	Vial 4	AL-RetWin-003	FID10247E.D	ALIFRONT.M	10/06/2014 18:39:14
9	Vial 5	Al-WKPEM-003	FID10247F.D	ALIFRONT.M	10/06/2014 19:49:32
10	Vial 6		ENV3341A.D	ALIFRONT.M	10/06/2014 21:00:04
11	Vial 7		ENV3341B.D	ALIFRONT.M	10/06/2014 22:10:24
12	Vial 8		ENV3341C.D	ALIFRONT.M	10/06/2014 23:21:05
13	Vial 9	AL-WKCC-25-030	FID10247G.D	ALIFRONT.M	10/07/2014 00:31:46
14	Vial 10		ARC2055.D	ALIFRONT.M	10/07/2014 01:42:25
15	Vial 11		ARC2056.D	ALIFRONT.M	10/07/2014 02:52:50
16	Vial 12		ARC2057.D	ALIFRONT.M	10/07/2014 04:03:13
17	Vial 13		ARC2058.D	ALIFRONT.M	10/07/2014 05:13:43
18	Vial 1	Solvent Blank	FID10247H.D	ALIFRONT.M	10/07/2014 06:24:23
19	Vial 14	AL-WKCC-25-030	FID10247I.D	ALIFRONT.M	10/07/2014 07:35:05
20	Vial 14	AL-WKCC-25-030	FID10247J.D	ALIFRONT.M	10/07/2014 09:52:24

← bad injection 10/7/14 MD

Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247B.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 15:08:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 09:54:15 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	102	0.00
2		n-C8	0.972	1.016	-4.5	106	0.00
3		n-C9	1.020	1.049	-2.8	105	0.00
4		n-C10	1.066	1.085	-1.8	104	0.00
5		n-C11	1.097	1.103	-0.5	102	0.00
6	S	n-dodecane-d26	0.972	0.965	0.7	103	0.00
7		n-C12	1.147	1.137	0.9	101	0.00
10		n-C13	1.168	1.151	1.5	100	0.00
12		n-C14	1.185	1.168	1.4	100	0.00
14		n-C15	1.210	1.188	1.8	100	0.00
15		n-C16	1.215	1.203	1.0	101	0.00
16	I	5a-androstane	1.000	1.000	0.0	104	0.00
18		n-C17	0.978	0.954	2.5	101	0.00
19		Pristane	0.970	0.946	2.5	101	0.00
20		n-C18	0.965	0.951	1.5	102	0.00
21		Phytane	0.838	0.823	1.8	102	0.00
22		n-C19	0.958	0.951	0.7	103	0.00
23	S	n-eicosane-d42	0.825	0.828	-0.4	105	0.00
24		n-C20	0.968	0.968	0.0	103	0.00
25		n-C21	0.993	0.999	-0.6	104	0.00
26		n-C22	0.976	0.991	-1.5	105	0.00
27		n-C23	0.969	0.990	-2.2	106	0.00
28		n-C24	0.965	0.989	-2.5	106	0.00
29		n-C25	0.958	0.987	-3.0	107	0.00
30		n-C26	0.968	1.003	-3.6	107	0.00
31		n-C27	0.953	0.993	-4.2	108	0.00
32		n-C28	0.948	0.990	-4.4	108	0.00
33		n-C29	0.934	0.982	-5.1	109	0.00
34	S	n-triacontane-d62	0.730	0.777	-6.4	111	-0.01
35		n-C30	0.932	0.983	-5.5	109	0.00
36		n-C31	0.902	0.952	-5.5	109	0.00
37		n-C32	0.914	0.964	-5.5	110	-0.01
38		n-C33	0.864	0.913	-5.7	109	-0.01
39		n-C34	0.882	0.929	-5.3	109	-0.01
40		n-C35	0.879	0.923	-5.0	109	-0.02
41		n-C36	0.904	0.953	-5.4	109	-0.01
42		n-C37	0.856	0.899	-5.0	108	-0.02
43		n-C38	0.860	0.902	-4.9	108	-0.02

44	n-C39	0.856	0.896	-4.7	108	-0.03
45	n-C40	0.850	0.885	-4.1	106	-0.04

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Tue Oct 07 09:54:36 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247B.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 15:08:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 09:54:15 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.619	266006	50.000	ug/mlm
16) I	5a-androstane	17.720	342729	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.337	128345	24.810	ug/mlm
23) S	n-eicosane-d42	17.180	140876	24.922	ug/mlm
34) S	n-triacontane-d62	29.060	135087	27.036	ug/mlm
	Target Compounds				
2)	n-C8	3.197	135407	26.176	ug/mlm
3)	n-C9	4.500	140133	25.831	ug/mlm
4)	n-C10	5.915	144331	25.447	ug/mlm
5)	n-C11	7.276	146930	25.171	ug/mlm
7)	n-C12	8.543	151232	24.773	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	9.721	153851	24.766	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.820	155328	24.630	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.853	158501	24.623	ug/mlm
15)	n-C16	12.864	160236	24.792	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.939	164233	24.522	ug/mlm
19)	Pristane	14.054	162488	24.456	ug/mlm
20)	n-C18	15.090	163656	24.757	ug/mlm
21)	Phytane	15.249	145399	25.347	ug/mlm
22)	n-C19	16.308	168870	25.740	ug/mlm
24)	n-C20	17.571	166202	25.067	ug/mlm
25)	n-C21	18.860	171805	25.274	ug/mlm
26)	n-C22	20.156	169899	25.425	ug/mlm
27)	n-C23	21.441	169911	25.608	ug/mlm
28)	n-C24	22.702	169879	25.710	ug/mlm
29)	n-C25	23.936	169562	25.853	ug/mlm
30)	n-C26	25.137	172080	25.964	ug/mlm
31)	n-C27	26.304	170225	26.084	ug/mlm
32)	n-C28	27.437	169711	26.138	ug/mlm
33)	n-C29	28.535	168336	26.313	ug/mlm
35)	n-C30	29.599	168541	26.403	ug/mlm
36)	n-C31	30.630	167577	27.112	ug/mlm
37)	n-C32	31.631	165829	26.476	ug/mlm
38)	n-C33	32.604	156293	26.403	ug/mlm
39)	n-C34	33.545	159375	26.393	ug/mlm
40)	n-C35	34.503	158147	26.270	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247B.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 15:08:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 09:54:15 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.587	163303	26.365	ug/mlm
42)	n-C37	36.829	158782	27.095	ug/mlm
43)	n-C38	38.270	155024	26.312	ug/mlm
44)	n-C39	39.961	154220	26.297	ug/mlm
45)	n-C40	41.961	151695	26.041	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

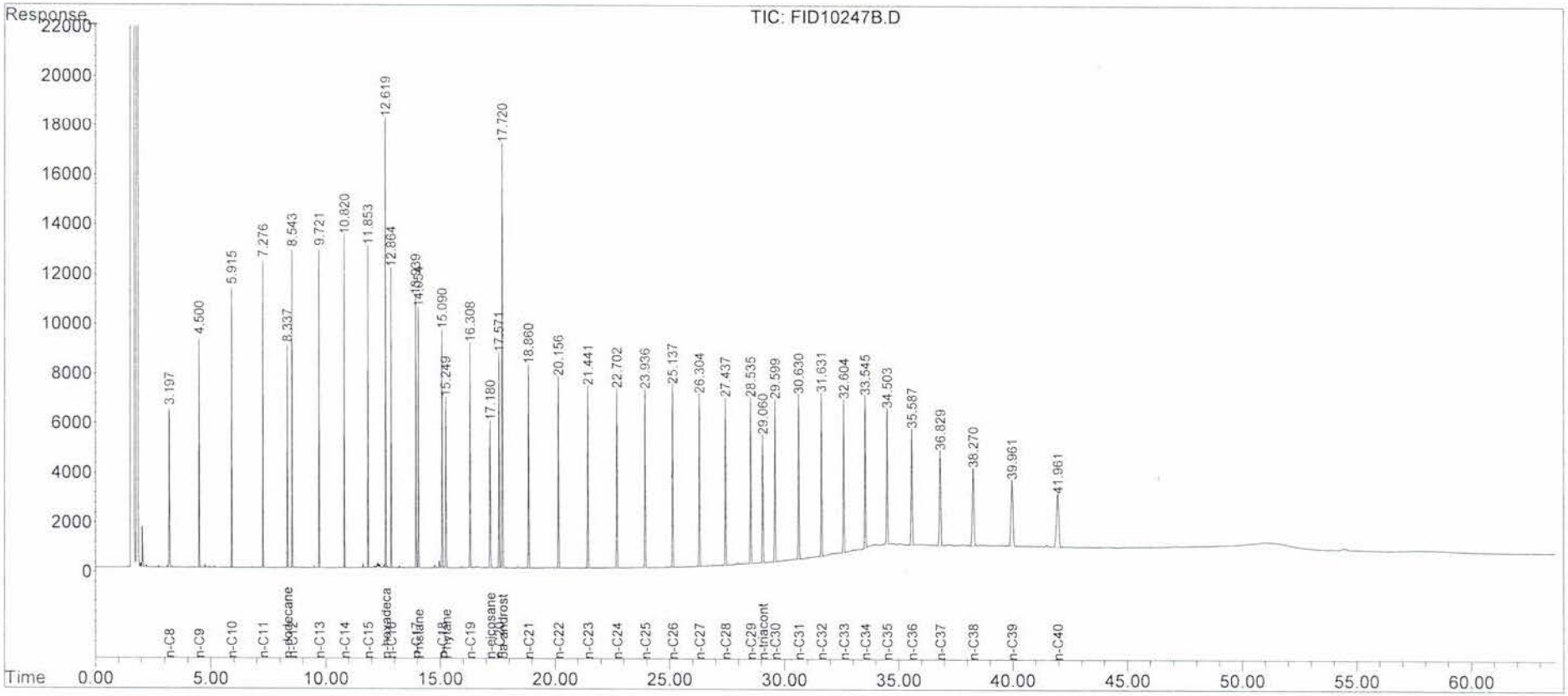
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247B.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 15:08:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 09:54:15 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247G.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 00:31:46
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autointl.e
Quant Time: Oct 07 09:45:01 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	0.972	0.969	0.3	99	0.00
3		n-C9	1.020	1.009	1.1	98	0.00
4		n-C10	1.066	1.055	1.0	98	0.00
5		n-C11	1.097	1.083	1.3	98	0.00
6	S	n-dodecane-d26	0.972	0.959	1.3	99	0.00
7		n-C12	1.147	1.130	1.5	98	0.00
10		n-C13	1.168	1.150	1.5	97	0.00
12		n-C14	1.185	1.169	1.4	97	0.00
14		n-C15	1.210	1.190	1.7	97	0.00
15		n-C16	1.215	1.205	0.8	98	0.00
16	I	5a-androstane	1.000	1.000	0.0	99	0.00
18		n-C17	0.978	0.965	1.3	98	0.00
19		Pristane	0.970	0.955	1.5	98	-0.01
20		n-C18	0.965	0.958	0.7	99	-0.01
21		Phytane	0.838	0.826	1.4	98	-0.01
22		n-C19	0.958	0.954	0.4	99	-0.01
23	S	n-eicosane-d42	0.825	0.829	-0.5	101	-0.01
24		n-C20	0.968	0.971	-0.3	99	-0.01
25		n-C21	0.993	0.996	-0.3	100	-0.01
26		n-C22	0.976	0.983	-0.7	100	-0.02
27		n-C23	0.969	0.979	-1.0	100	-0.01
28		n-C24	0.965	0.973	-0.8	100	-0.02
29		n-C25	0.958	0.970	-1.3	100	-0.02
30		n-C26	0.968	0.982	-1.4	100	-0.02
31		n-C27	0.953	0.967	-1.5	101	-0.02
32		n-C28	0.948	0.963	-1.6	101	-0.02
33		n-C29	0.934	0.952	-1.9	101	-0.02
34	S	n-triacontane-d62	0.730	0.750	-2.7	103	-0.02
35		n-C30	0.932	0.951	-2.0	101	-0.02
36		n-C31	0.902	0.923	-2.3	102	-0.02
37		n-C32	0.914	0.937	-2.5	102	-0.02
38		n-C33	0.864	0.887	-2.7	102	-0.03
39		n-C34	0.882	0.908	-2.9	102	-0.03
40		n-C35	0.879	0.907	-3.2	103	-0.03
41		n-C36	0.904	0.937	-3.7	103	-0.03
42		n-C37	0.856	0.887	-3.6	102	-0.05
43		n-C38	0.860	0.900	-4.7	103	-0.06

44	n-C39	0.856	0.894	-4.4	103	-0.07
45	n-C40	0.850	0.890	-4.7	103	-0.07

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Tue Oct 07 09:45:22 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247G.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 00:31:46
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 09:45:01 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.615	258177	50.000	ug/mlm
16) I	5a-androstane	17.710	328725	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.336	123772	24.651	ug/mlm
23) S	n-eicosane-d42	17.172	135251	24.946	ug/mlm
34) S	n-triacontane-d62	29.050	125076	26.099	ug/mlm
Target Compounds					
2)	n-C8	3.205	125426	24.981	ug/mlm
3)	n-C9	4.506	130836	24.848	ug/mlm
4)	n-C10	5.918	136219	24.745	ug/mlm
5)	n-C11	7.277	140076	24.724	ug/mlm
7)	n-C12	8.543	145892	24.623	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	9.719	149100	24.729	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.817	150964	24.664	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.850	154027	24.653	ug/mlm
15)	n-C16	12.859	155696	24.820	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.934	159235	24.789	ug/mlm
19)	Pristane	14.049	157209	24.669	ug/mlm
20)	n-C18	15.083	158198	24.951	ug/mlm
21)	Phytane	15.241	140065	25.457	ug/mlm
22)	n-C19	16.300	162514	25.826	ug/mlm
24)	n-C20	17.564	160011	25.161	ug/mlm
25)	n-C21	18.854	164375	25.211	ug/mlm
26)	n-C22	20.148	161669	25.224	ug/mlm
27)	n-C23	21.432	161163	25.324	ug/mlm
28)	n-C24	22.692	160388	25.308	ug/mlm
29)	n-C25	23.928	159854	25.411	ug/mlm
30)	n-C26	25.127	161476	25.402	ug/mlm
31)	n-C27	26.293	159006	25.403	ug/mlm
32)	n-C28	27.424	158249	25.411	ug/mlm
33)	n-C29	28.522	156512	25.507	ug/mlm
35)	n-C30	29.587	156416	25.547	ug/mlm
36)	n-C31	30.617	155770	26.275	ug/mlm
37)	n-C32	31.620	154508	25.720	ug/mlm
38)	n-C33	32.588	145637	25.651	ug/mlm
39)	n-C34	33.534	149436	25.801	ug/mlm
40)	n-C35	34.490	148937	25.794	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247G.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 00:31:46
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 09:45:01 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.568	153989	25.920	ug/mlm
42)	n-C37	36.807	150217	26.725	ug/mlm
43)	n-C38	38.239	148411	26.262	ug/mlm
44)	n-C39	39.927	147542	26.230	ug/mlm
45)	n-C40	41.930	146265	26.179	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

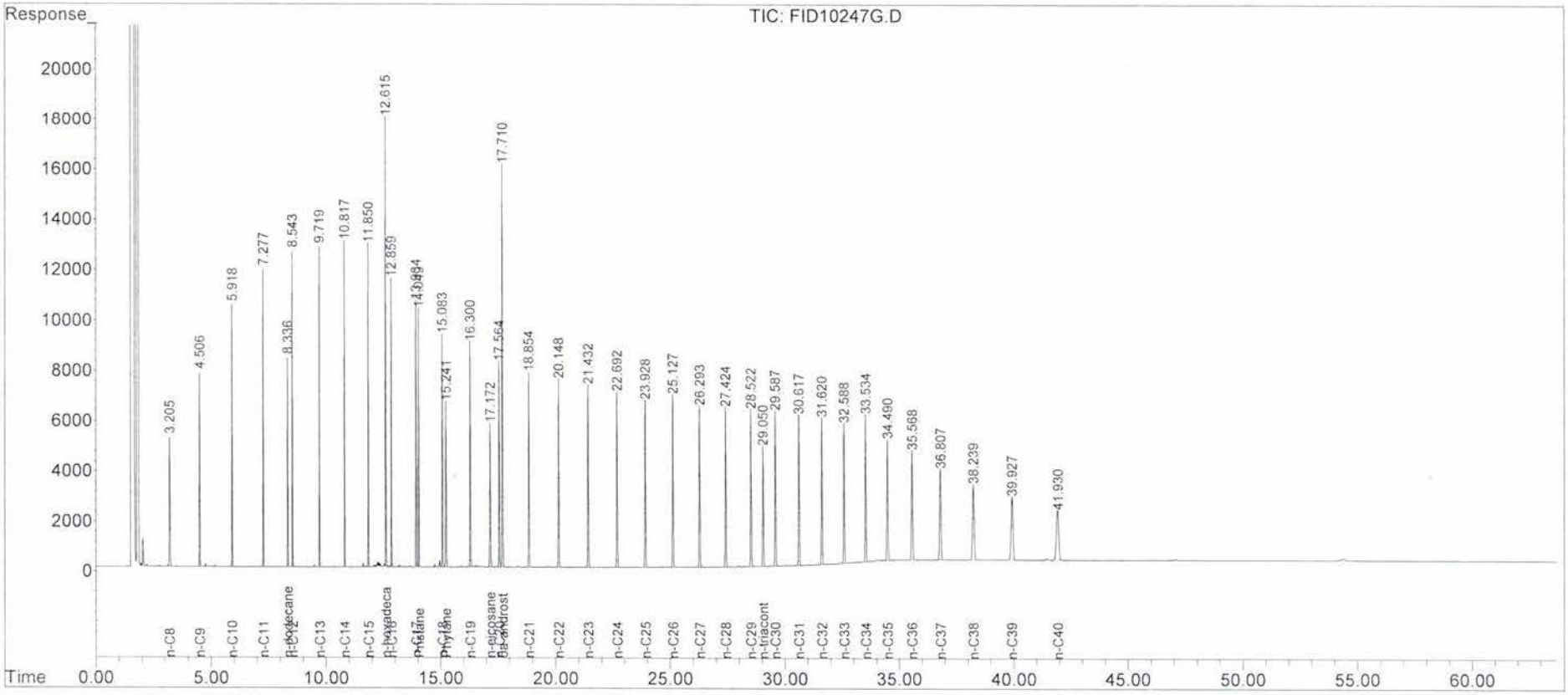
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247G.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 00:31:46
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 09:45:01 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247J.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 09:52:24
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 11:03:37 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	104	0.00
2		n-C8	0.972	0.983	-1.1	106	0.00
3		n-C9	1.020	1.032	-1.2	107	0.00
4		n-C10	1.066	1.084	-1.7	107	0.00
5		n-C11	1.097	1.111	-1.3	106	0.00
6	S	n-dodecane-d26	0.972	0.977	-0.5	107	0.00
7		n-C12	1.147	1.153	-0.5	105	0.00
10		n-C13	1.168	1.165	0.3	104	0.00
12		n-C14	1.185	1.179	0.5	104	0.00
14		n-C15	1.210	1.199	0.9	104	0.00
15		n-C16	1.215	1.204	0.9	104	0.00
16	I	5a-androstane	1.000	1.000	0.0	104	0.00
18		n-C17	0.978	0.974	0.4	104	0.00
19		Pristane	0.970	0.966	0.4	104	0.00
20		n-C18	0.965	0.964	0.1	104	0.00
21		Phytane	0.838	0.831	0.8	104	0.00
22		n-C19	0.958	0.962	-0.4	105	0.00
23	S	n-eicosane-d42	0.825	0.831	-0.7	107	0.00
24		n-C20	0.968	0.973	-0.5	105	0.00
25		n-C21	0.993	1.001	-0.8	105	0.00
26		n-C22	0.976	0.981	-0.5	105	0.00
27		n-C23	0.969	0.977	-0.8	105	0.00
28		n-C24	0.965	0.971	-0.6	105	0.00
29		n-C25	0.958	0.979	-2.2	107	0.00
30		n-C26	0.968	0.971	-0.3	104	0.00
31		n-C27	0.953	0.962	-0.9	105	0.00
32		n-C28	0.948	0.953	-0.5	105	0.00
33		n-C29	0.934	0.944	-1.1	105	0.00
34	S	n-triacontane-d62	0.730	0.747	-2.3	108	0.00
35		n-C30	0.932	0.945	-1.4	106	0.00
36		n-C31	0.902	0.919	-1.9	106	0.00
37		n-C32	0.914	0.931	-1.9	107	0.00
38		n-C33	0.864	0.885	-2.4	107	0.00
39		n-C34	0.882	0.913	-3.5	108	0.00
40		n-C35	0.879	0.908	-3.3	108	-0.01
41		n-C36	0.904	0.943	-4.3	108	0.00
42		n-C37	0.856	0.892	-4.2	108	-0.02
43		n-C38	0.860	0.898	-4.4	108	-0.01

44	n-C39	0.856	0.904	-5.6	109	-0.02
45	n-C40	0.850	0.905	-6.5	110	-0.02

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Tue Oct 07 11:03:43 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247J.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 09:52:24
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 11:03:37 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.620	273533	50.000	ug/mlm
16) I	5a-androstane	17.722	345392	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.339	133669	25.128	ug/mlm
23) S	n-eicosane-d42	17.181	142471	25.010	ug/mlm
34) S	n-triacontane-d62	29.068	130775	25.972	ug/mlm
Target Compounds					
2)	n-C8	3.208	134833	25.347	ug/mlm
3)	n-C9	4.507	141814	25.421	ug/mlm
4)	n-C10	5.920	148225	25.414	ug/mlm
5)	n-C11	7.279	152241	25.363	ug/mlm
7)	n-C12	8.546	157643	25.112	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	9.722	160049	25.055	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.821	161222	24.861	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.855	164431	24.841	ug/mlm
15)	n-C16	12.865	164868	24.807	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.941	168933	25.030	ug/mlm
19)	Pristane	14.056	167172	24.967	ug/mlm
20)	n-C18	15.092	167241	25.105	ug/mlm
21)	Phytane	15.250	148067	25.613	ug/mlm
22)	n-C19	16.310	172125	26.034	ug/mlm
24)	n-C20	17.575	168442	25.209	ug/mlm
25)	n-C21	18.866	173429	25.316	ug/mlm
26)	n-C22	20.160	169572	25.180	ug/mlm
27)	n-C23	21.446	168962	25.269	ug/mlm
28)	n-C24	22.707	168071	25.240	ug/mlm
29)	n-C25	23.942	169556	25.653	ug/mlm
30)	n-C26	25.144	167887	25.136	ug/mlm
31)	n-C27	26.309	166207	25.272	ug/mlm
32)	n-C28	27.439	164619	25.158	ug/mlm
33)	n-C29	28.540	163010	25.284	ug/mlm
35)	n-C30	29.606	163191	25.368	ug/mlm
36)	n-C31	30.635	163003	26.168	ug/mlm
37)	n-C32	31.639	161320	25.558	ug/mlm
38)	n-C33	32.608	152734	25.603	ug/mlm
39)	n-C34	33.553	157849	25.939	ug/mlm
40)	n-C35	34.513	156699	25.828	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247J.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 09:52:24
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 11:03:37 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.593	162828	26.085	ug/mlm
42)	n-C37	36.832	158694	26.871	ug/mlm
43)	n-C38	38.280	155619	26.209	ug/mlm
44)	n-C39	39.974	156692	26.512	ug/mlm
45)	n-C40	41.981	156366	26.636	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

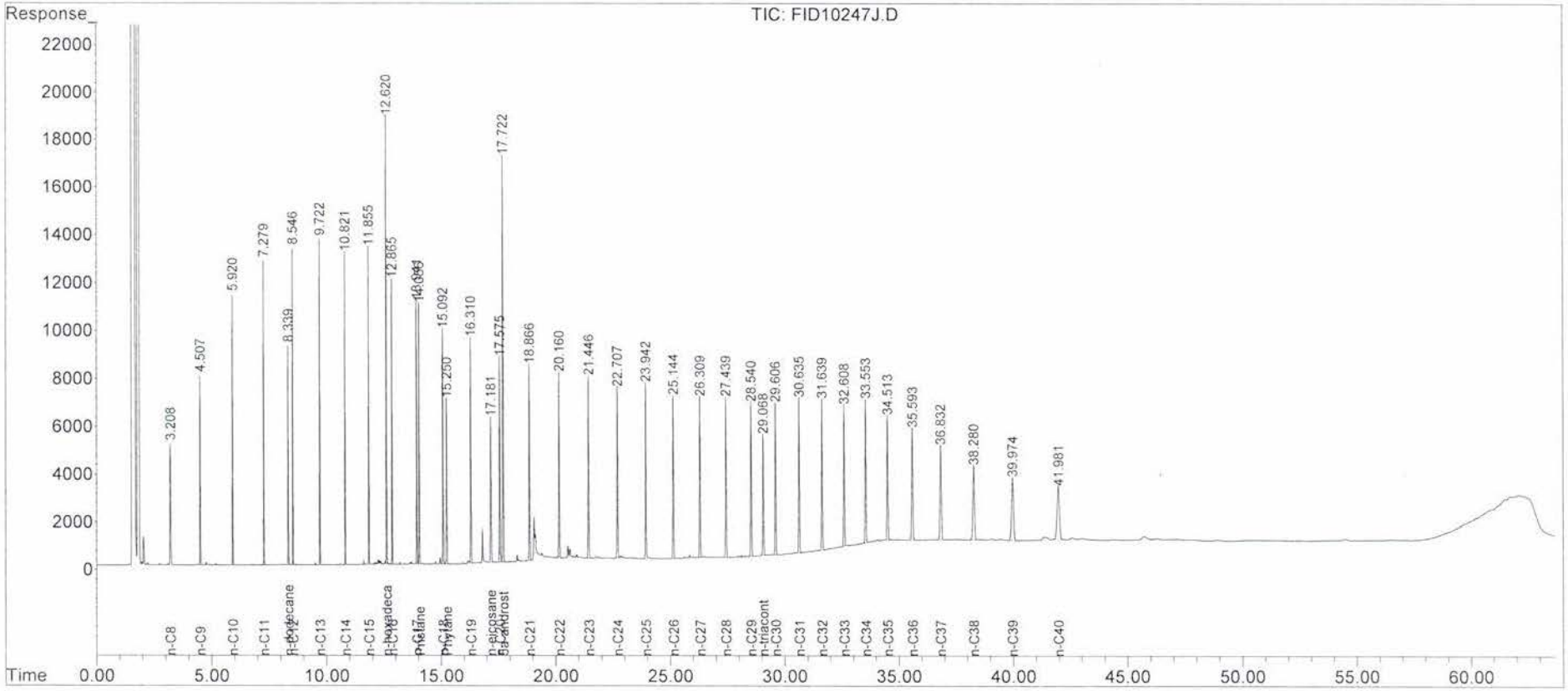
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3341\FID10247\
Data File : FID10247J.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 09:52:24
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 11:03:37 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID10247C.D**		FID10247C.D
Sample Name	**AL-SRM2779-20-003**		AL-SRM2779-20-003
Misc Info	**0**		06-Oct-2014, 16:18:39
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Oct-2014, 16:18:39**		0.05
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	3
Vial Number	**3**	IS Area 1	225853
Sample Multiplier	**0.05**	IS Area 2	318222

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.21	1357650	15.46	15.455
3)	n-C9	4.51	1163200	12.63	12.627
4)	n-C10	5.93	1063630	11.04	11.043
5)	n-C11	7.29	993329	10.02	10.021
7)	n-C12	8.55	899987	8.68	8.682
8)	i-13	8.74	226334	2.15	2.146
9)	i-14	9.44	157634	1.47	1.472
10)	n-C13	9.73	825391	7.82	7.824
11)	i-15	10.60	197469	1.81	1.807
12)	n-C14	10.83	757476	7.07	7.073
13)	i-16	11.50	283478	2.58	2.583
14)	n-C15	11.86	725311	6.64	6.635
15)	n-C16	12.87	622790	5.67	5.675
17)	i-18	13.42	174456	1.42	1.421
18)	n-C17	13.95	553705	4.45	4.452
19)	Pristane	14.05	302696	2.45	2.453
20)	n-C18	15.10	449598	3.66	3.663
21)	Phytane	15.25	160370	1.51	1.505
22)	n-C19	16.32	431031	3.54	3.538
24)	n-C20	17.58	356569	2.90	2.896
25)	n-C21	18.87	297353	2.36	2.356
26)	n-C22	20.16	263330	2.12	2.122
27)	n-C23	21.45	233899	1.90	1.898
28)	n-C24	22.71	210280	1.71	1.714
29)	n-C25	23.94	178256	1.46	1.464
30)	n-C26	25.14	140711	1.14	1.143
31)	n-C27	26.31	107934	0.89	0.891
32)	n-C28	27.44	95268.1	0.79	0.790
33)	n-C29	28.54	93031.7	0.78	0.783
35)	n-C30	29.60	81433.2	0.69	0.687
36)	n-C31	30.63	66960	0.58	0.583
37)	n-C32	31.63	56745.9	0.49	0.488
38)	n-C33	32.60	53317.7	0.49	0.485
39)	n-C34	33.55	47561.1	0.42	0.424
40)	n-C35	34.51	39954.9	0.36	0.357
41)	n-C36	35.58	23362.2	0.20	0.203
42)	n-C37	36.82	20909.1	0.19	0.192
43)	n-C38	38.27	17461.1	0.16	0.160
44)	n-C39	39.95	17946	0.16	0.165
45)	n-C40	41.95	18971.9	0.18	0.175
46)	TPH	7.29	74632800	637.46	637.460
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	8.34	85266.4	0.97	97.1
23)	n-eicosane-d42	17.18	102225	0.97	97.6
34)	n-triacontane-d62	29.07	87384.1	0.94	94.2
1)	n-hexadecane-d34	12.62	225853	2.50	225853.000
16)	5a-androstane	17.73	318222	50.04	318222.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : FID10247C.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 16:18:39
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Oct 07 10:21:37 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.621	225853	50.000	ug/mlm
16) I	5a-androstane	17.725	318222	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.338	85266	0.971	ug/mlm
23) S	n-eicosane-d42	17.180	102225	0.974	ug/mlm
34) S	n-triacontane-d62	29.066	87384	0.942	ug/mlm
Target Compounds					
2)	n-C8	3.212	1357647	15.455	ug/mlm
3)	n-C9	4.514	1163198	12.627	ug/mlm
4)	n-C10	5.927	1063628	11.043	ug/mlm
5)	n-C11	7.287	993329	10.021	ug/mlm
7)	n-C12	8.554	899987	8.682	ug/mlm
8)	i-13	8.737	226334	2.146	ug/mlm
9)	i-14	9.442	157634	1.472	ug/mlm
10)	n-C13	9.731	825391	7.824	ug/mlm
11)	i-15	10.600	197469	1.807	ug/mlm
12)	n-C14	10.829	757476	7.073	ug/mlm
13)	i-16	11.500	283478	2.583	ug/mlm
14)	n-C15	11.862	725311	6.635	ug/mlm
15)	n-C16	12.872	622790	5.675	ug/mlm
17)	i-18	13.417	174456	1.421	ug/mlm
18)	n-C17	13.948	553705	4.452	ug/mlm
19)	Pristane	14.054	302696	2.453	ug/mlm
20)	n-C18	15.099	449598	3.663	ug/mlm
21)	Phytane	15.255	160370	1.505	ug/mlm
22)	n-C19	16.316	431031	3.538	ug/mlm
24)	n-C20	17.580	356569	2.896	ug/mlm
25)	n-C21	18.869	297353	2.356	ug/mlm
26)	n-C22	20.164	263330	2.122	ug/mlm
27)	n-C23	21.447	233899	1.898	ug/mlm
28)	n-C24	22.710	210280	1.714	ug/mlm
29)	n-C25	23.940	178256	1.464	ug/mlm
30)	n-C26	25.141	140711	1.143	ug/mlm
31)	n-C27	26.306	107934	0.891	ug/mlm
32)	n-C28	27.439	95268	0.790	ug/mlm
33)	n-C29	28.536	93032	0.783	ug/mlm
35)	n-C30	29.603	81433	0.687	ug/mlm
36)	n-C31	30.630	66960	0.583	ug/mlm
37)	n-C32	31.631	56746	0.488	ug/mlm
38)	n-C33	32.603	53318	0.485	ug/mlm
39)	n-C34	33.548	47561	0.424	ug/mlm
40)	n-C35	34.506	39955	0.357	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : FID10247C.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 16:18:39
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Oct 07 10:21:37 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.584	23362	0.203	ug/mlm
42)	n-C37	36.824	20909	0.192	ug/mlm
43)	n-C38	38.267	17461	0.160	ug/mlm
44)	n-C39	39.950	17946	0.165	ug/mlm
45)	n-C40	41.953	18972	0.175	ug/mlm
46)	TPH	7.287f	74632829	637.458	ug/mlm
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

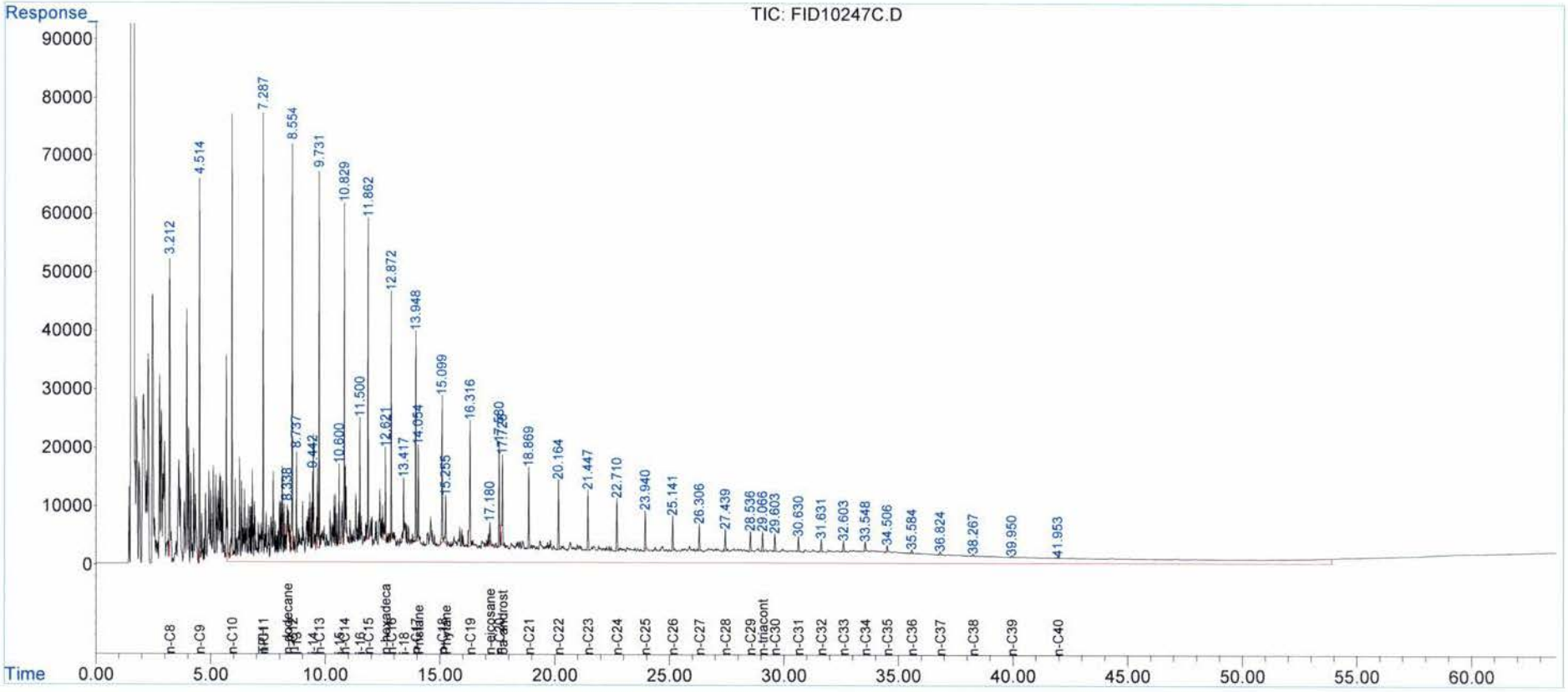
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : FID10247C.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 16:18:39
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Oct 07 10:21:37 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID10247F.D**		FID10247F.D
Sample Name	**AI-WKPEM-003**		AI-WKPEM-003
Misc Info	**0**		06-Oct-2014, 19:49:32
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Oct-2014, 19:49:32**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	5
Vial Number	**5**	IS Area 1	234799
Sample Multiplier	**1**	IS Area 2	299463

#	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	12.62	9329750	1693.60	1693.600
47)	TRH1	8.34	93965.4	17.06	17.057
48)	TRH2	12.62	662284	120.22	120.222
49)	TRH3	25.78	4896.2	0.89	0.889
50)	TRH4	29.05	103127	18.72	18.720
51)	TRH5	34.89	54650.5	9.92	9.921
52)	TRH6	37.90	7718.61	1.40	1.401
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	8.34	90945.8	19.92	99.6
23)	n-eicosane-d42	17.17	98005.5	19.84	99.4
34)	n-triacontane-d62	29.05	92222.2	21.12	105.7
1)	n-hexadecane-d34	12.62	234799	50.00	234799.000
16)	5a-androstane	17.71	299463	50.04	299463.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : FID10247F.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 19:49:32
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:41:26 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.616	234799	50.000	ug/mlm
16) I	5a-androstane	17.711	299463	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.336	90946	19.917	ug/mlm
23) S	n-eicosane-d42	17.172	98006	19.843	ug/mlm
34) S	n-triacontane-d62	29.054	92222	21.124	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/ml
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\FID10247\
Data File : FID10247F.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 19:49:32
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:41:26 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.616f	9329753	1693.596	ug/mlm
47)	TRH1	8.336	93965	17.057	ug/mlm
48)	TRH2	12.616f	662284	120.222	ug/mlm
49)	TRH3	25.783f	4896	0.889	ug/mlm
50)	TRH4	29.054f	103127	18.720	ug/mlm
51)	TRH5	34.887f	54650	9.920	ug/mlm
52)	TRH6	37.903f	7719	1.401	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

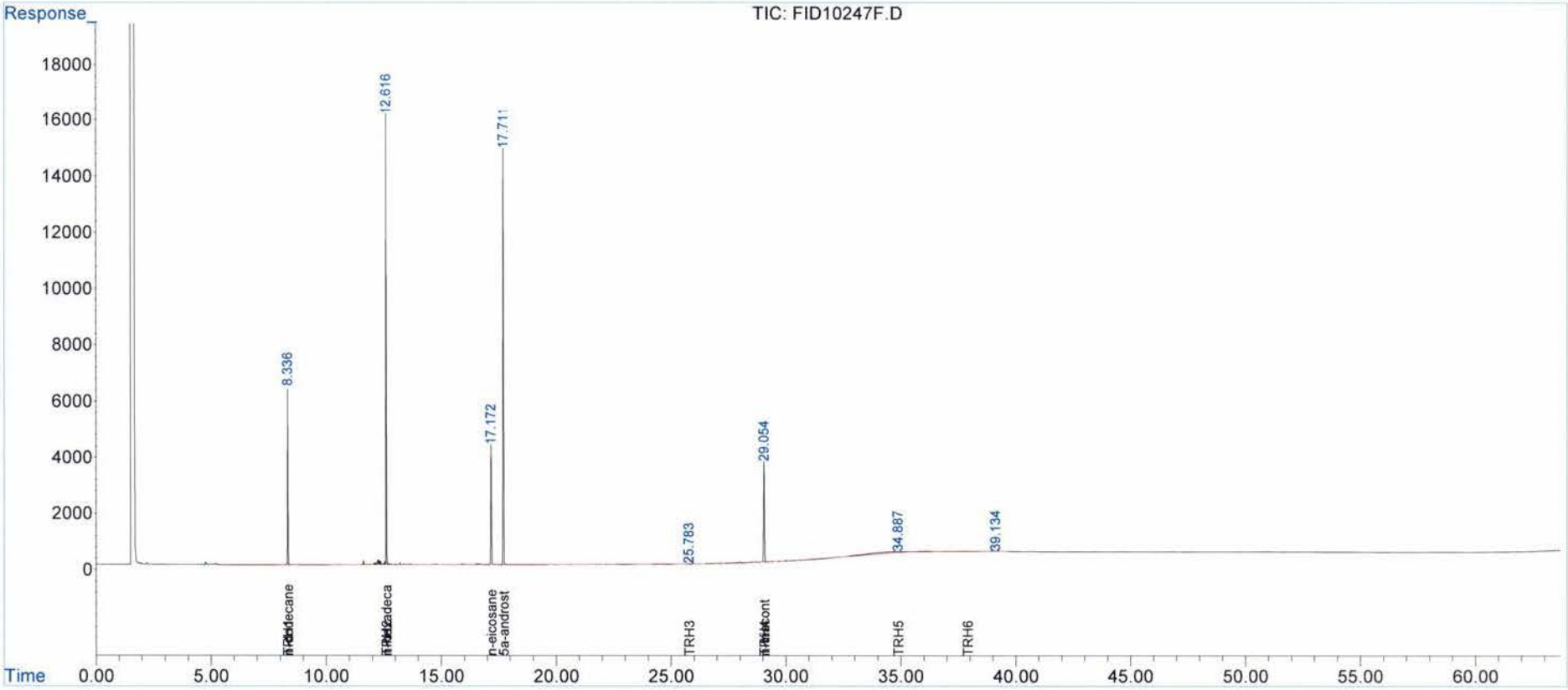
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : FID10247F.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 19:49:32
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:41:26 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3341A.D**		ENV3341A.D
Sample Name	**Method Blank**		Method Blank
Misc Info	**0**		06-Oct-2014, 21:00:04
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Oct-2014, 21:00:04**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	6
Vial Number	**6**	IS Area 1	220313
Sample Multiplier	**1**	IS Area 2	282093

#	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	12.62	8341880	1607.51	1607.510
47)	TRH1	12.62	330044	63.60	63.601
48)	TRH2	17.71	392954	75.72	75.724
49)	TRH3	27.52	8798.31	1.70	1.695
50)	TRH4	29.05	93689.1	18.05	18.054
51)	TRH5	34.38	17686.2	3.41	3.408
52)	TRH6	35.29	7390.38	1.42	1.424
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	8.34	74288.9	17.34	86.7
23)	n-eicosane-d42	17.17	87840.3	18.88	94.6
34)	n-triacontane-d62	29.05	81501.1	19.82	99.1
1)	n-hexadecane-d34	12.62	220313	50.00	220313.000
16)	5a-androstane	17.71	282093	50.04	282093.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341A.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 21:00:04
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:40:29 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.616	220313	50.000	ug/mlm
16) I	5a-androstane	17.710	282093	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.336	74289	17.339	ug/mlm
23) S	n-eicosane-d42	17.172	87840	18.880	ug/mlm
34) S	n-triacontane-d62	29.053	81501	19.818	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\FID10247\
Data File : ENV3341A.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 21:00:04
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:40:29 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.616f	8341882	1607.512	ug/mlm
47)	TRH1	12.616f	330044	63.601	ug/mlm
48)	TRH2	17.710	392954	75.724	ug/mlm
49)	TRH3	27.516f	8798	1.695	ug/mlm
50)	TRH4	29.053f	93689	18.054	ug/mlm
51)	TRH5	34.379f	17686	3.408	ug/mlm
52)	TRH6	35.286f	7390	1.424	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

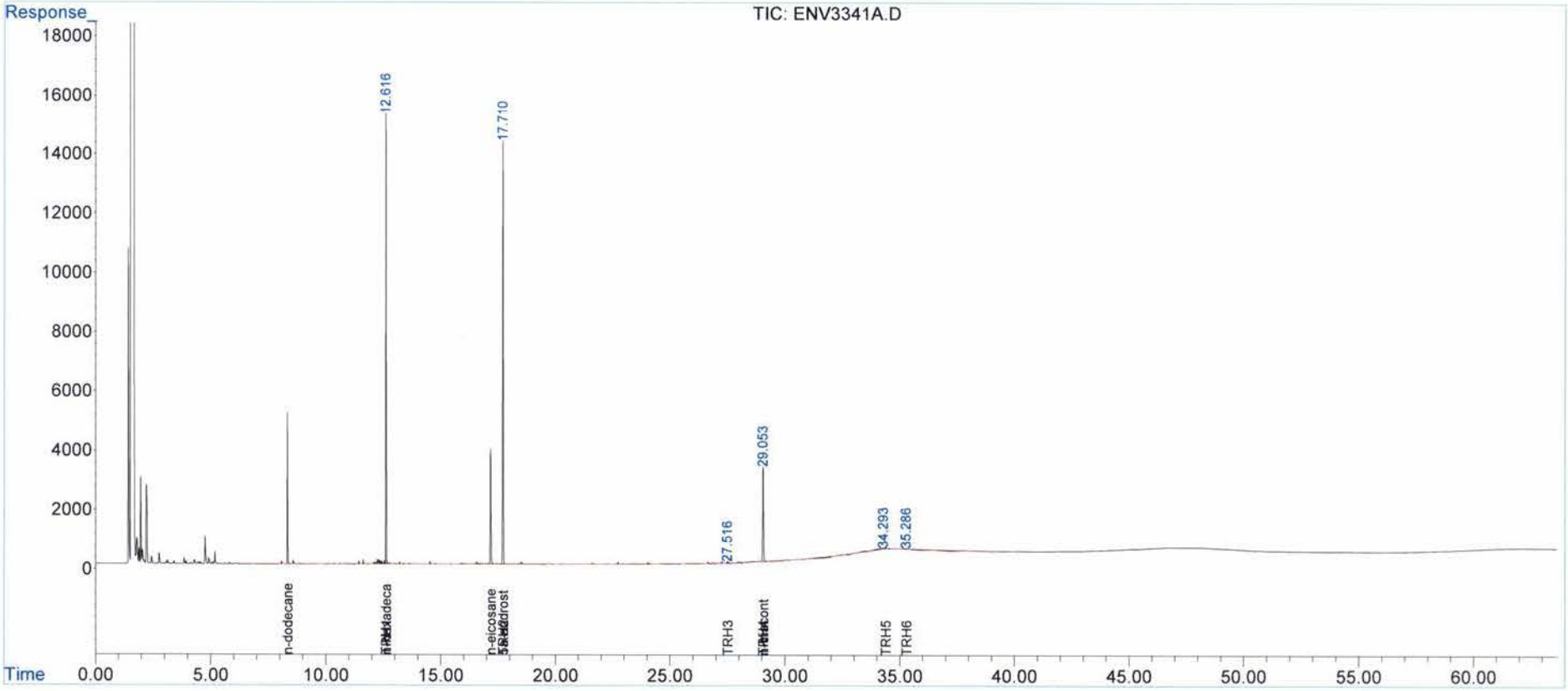
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341A.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 21:00:04
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:40:29 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3341B.D**		ENV3341B.D
Sample Name	**Blank Spike**		Blank Spike
Misc Info	**0**		06-Oct-2014, 22:10:24
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Oct-2014, 22:10:24**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	7
Vial Number	**7**	IS Area 1	221070
Sample Multiplier	**1**	IS Area 2	281267

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.21	25180.3	5.86	5.857
3)	n-C9	4.50	37427.1	8.30	8.301
4)	n-C10	5.92	41552.3	8.82	8.815
5)	n-C11	7.28	44084	9.09	9.087
7)	n-C12	8.54	46628.2	9.19	9.191
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.72	48044.4	9.31	9.306
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.82	49033	9.36	9.355
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.85	51044.4	9.54	9.542
15)	n-C16	12.86	51486.4	9.59	9.585
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.93	53025.6	9.65	9.648
19)	Pristane	14.05	52542.6	9.64	9.636
20)	n-C18	15.08	52944.5	9.76	9.759
21)	Phytane	15.24	47155.6	10.02	10.017
22)	n-C19	16.30	55128.7	10.24	10.239
24)	n-C20	17.56	53664	9.86	9.862
25)	n-C21	18.85	55082.5	9.87	9.874
26)	n-C22	20.15	54168.8	9.88	9.878
27)	n-C23	21.43	53919	9.90	9.902
28)	n-C24	22.69	55546.1	10.24	10.244
29)	n-C25	23.92	53322.9	9.91	9.907
30)	n-C26	25.13	53811.5	9.89	9.893
31)	n-C27	26.29	52848.3	9.87	9.868
32)	n-C28	27.42	52526.6	9.86	9.858
33)	n-C29	28.52	52253	9.95	9.953
35)	n-C30	29.59	51917.8	9.91	9.910
36)	n-C31	30.62	52399.4	10.33	10.330
37)	n-C32	31.62	51532.6	10.03	10.026
38)	n-C33	32.59	48527.7	9.99	9.989
39)	n-C34	33.53	49797.8	10.05	10.049
40)	n-C35	34.49	49507.4	10.02	10.021
41)	n-C36	35.56	51514.8	10.13	10.134
42)	n-C37	36.80	50173.5	10.43	10.433
43)	n-C38	38.24	49167.7	10.17	10.169
44)	n-C39	39.92	49460.6	10.28	10.277
45)	n-C40	41.91	48899.2	10.23	10.229
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	8.34	78716.5	18.31	91.5
23)	n-eicosane-d42	17.17	89909.9	19.38	97.1
34)	n-triacontane-d62	29.05	82647.9	20.16	100.8
1)	n-hexadecane-d34	12.61	221070	50.00	221070.000
16)	5a-androstane	17.71	281267	50.04	281267.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341B.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 22:10:24
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:57:44 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.615	221070	50.000	ug/mlm
16) I	5a-androstane	17.710	281267	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.336	78716	18.309	ug/mlm
23) S	n-eicosane-d42	17.172	89910	19.381	ug/mlm
34) S	n-triacontane-d62	29.053	82648	20.156	ug/mlm
Target Compounds					
2)	n-C8	3.207	25180	5.857	ug/mlm
3)	n-C9	4.505	37427	8.301	ug/mlm
4)	n-C10	5.916	41552	8.815	ug/mlm
5)	n-C11	7.276	44084	9.087	ug/mlm
7)	n-C12	8.541	46628	9.191	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	9.718	48044	9.306	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.816	49033	9.355	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.849	51044	9.542	ug/mlm
15)	n-C16	12.859	51486	9.585	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.933	53026	9.648	ug/mlm
19)	Pristane	14.047	52543	9.636	ug/mlm
20)	n-C18	15.081	52944	9.759	ug/mlm
21)	Phytane	15.242	47156	10.017	ug/mlm
22)	n-C19	16.299	55129	10.239	ug/mlm
24)	n-C20	17.562	53664	9.862	ug/mlm
25)	n-C21	18.852	55083	9.874	ug/mlm
26)	n-C22	20.145	54169	9.878	ug/mlm
27)	n-C23	21.429	53919	9.902	ug/mlm
28)	n-C24	22.692	55546	10.244	ug/mlm
29)	n-C25	23.925	53323	9.907	ug/mlm
30)	n-C26	25.126	53811	9.893	ug/mlm
31)	n-C27	26.292	52848	9.868	ug/mlm
32)	n-C28	27.424	52527	9.858	ug/mlm
33)	n-C29	28.520	52253	9.953	ug/mlm
35)	n-C30	29.585	51918	9.910	ug/mlm
36)	n-C31	30.618	52399	10.330	ug/mlm
37)	n-C32	31.617	51533	10.026	ug/mlm
38)	n-C33	32.589	48528	9.989	ug/mlm
39)	n-C34	33.534	49798	10.049	ug/mlm
40)	n-C35	34.488	49507	10.021	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341B.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 22:10:24
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:57:44 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.564	51515	10.134	ug/mlm
42)	n-C37	36.802	50173	10.433	ug/mlm
43)	n-C38	38.243	49168	10.169	ug/mlm
44)	n-C39	39.924	49461	10.277	ug/mlm
45)	n-C40	41.914	48899	10.229	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

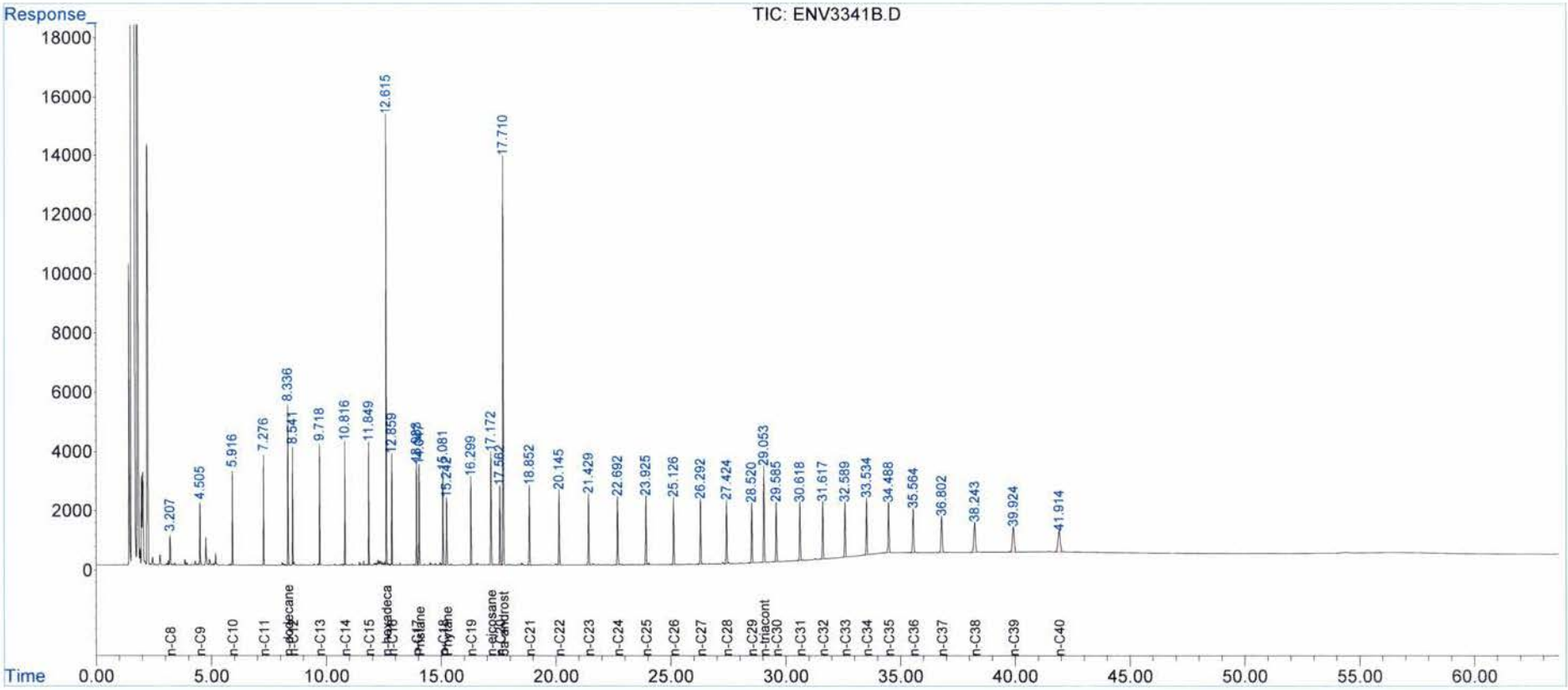
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341B.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 22:10:24
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 10:57:44 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3341C.D**		ENV3341C.D
Sample Name	**Blank Spike Dupl**		Blank Spike Dupl
Misc Info	**0**		06-Oct-2014, 23:21:05
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3341\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Oct-2014, 23:21:05**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	8
Vial Number	**8**	IS Area 1	232956
Sample Multiplier	**1**	IS Area 2	301357

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.21	25217.2	5.57	5.566
3)	n-C9	4.50	38597	8.12	8.124
4)	n-C10	5.92	43456.2	8.75	8.749
5)	n-C11	7.28	46172.7	9.03	9.032
7)	n-C12	8.54	48871.8	9.14	9.141
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.72	50381.5	9.26	9.261
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.82	51568.6	9.34	9.337
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.85	53901.5	9.56	9.562
15)	n-C16	12.86	54820.8	9.69	9.685
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.93	56360	9.57	9.571
19)	Pristane	14.05	55982.9	9.58	9.583
20)	n-C18	15.08	56461.7	9.71	9.714
21)	Phytane	15.24	50346.2	9.98	9.981
22)	n-C19	16.30	58714.1	10.18	10.178
24)	n-C20	17.56	57139.2	9.80	9.801
25)	n-C21	18.85	58746	9.83	9.828
26)	n-C22	20.15	57877.6	9.85	9.850
27)	n-C23	21.43	57520.5	9.86	9.859
28)	n-C24	22.69	59315	10.21	10.209
29)	n-C25	23.92	56952.4	9.88	9.876
30)	n-C26	25.13	57598	9.88	9.884
31)	n-C27	26.29	56777	9.89	9.894
32)	n-C28	27.42	56248	9.85	9.852
33)	n-C29	28.52	56471.8	10.04	10.039
35)	n-C30	29.58	56221.3	10.02	10.017
36)	n-C31	30.62	57147.6	10.52	10.515
37)	n-C32	31.61	56741.5	10.30	10.303
38)	n-C33	32.59	53771.8	10.33	10.331
39)	n-C34	33.53	55704	10.49	10.491
40)	n-C35	34.49	55426.8	10.47	10.471
41)	n-C36	35.57	57698.9	10.59	10.594
42)	n-C37	36.80	56504.7	10.97	10.966
43)	n-C38	38.24	55563.8	10.73	10.725
44)	n-C39	39.92	55806.7	10.82	10.822
45)	n-C40	41.91	55517.6	10.84	10.839
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	8.34	81739.1	18.04	90.2
23)	n-eicosane-d42	17.17	95057.8	19.13	95.8
34)	n-triacontane-d62	29.05	88338.4	20.11	100.6
1)	n-hexadecane-d34	12.62	232956	50.00	232956.000
16)	5a-androstane	17.71	301357	50.04	301357.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341C.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 23:21:05
Operator : Meghan Dailey
Sample : Blank Spike Dupl
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 13:28:05 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.616	232956	50.000	ug/mlm
16) I	5a-androstane	17.710	301357	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.336	81739	18.042	ug/mlm
23) S	n-eicosane-d42	17.173	95058	19.125	ug/mlm
34) S	n-triacontane-d62	29.052	88338	20.107	ug/mlm
Target Compounds					
2)	n-C8	3.206	25217	5.566	ug/mlm
3)	n-C9	4.505	38597	8.124	ug/mlm
4)	n-C10	5.917	43456	8.749	ug/mlm
5)	n-C11	7.277	46173	9.032	ug/mlm
7)	n-C12	8.543	48872	9.141	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	9.719	50382	9.261	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.817	51569	9.337	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.850	53902	9.562	ug/mlm
15)	n-C16	12.859	54821	9.685	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.933	56360	9.571	ug/mlm
19)	Pristane	14.048	55983	9.583	ug/mlm
20)	n-C18	15.083	56462	9.714	ug/mlm
21)	Phytane	15.243	50346	9.981	ug/mlm
22)	n-C19	16.300	58714	10.178	ug/mlm
24)	n-C20	17.563	57139	9.801	ug/mlm
25)	n-C21	18.852	58746	9.828	ug/mlm
26)	n-C22	20.148	57878	9.850	ug/mlm
27)	n-C23	21.429	57521	9.859	ug/mlm
28)	n-C24	22.690	59315	10.209	ug/mlm
29)	n-C25	23.924	56952	9.876	ug/mlm
30)	n-C26	25.126	57598	9.884	ug/mlm
31)	n-C27	26.293	56777	9.894	ug/mlm
32)	n-C28	27.423	56248	9.852	ug/mlm
33)	n-C29	28.522	56472	10.039	ug/mlm
35)	n-C30	29.585	56221	10.017	ug/mlm
36)	n-C31	30.620	57148	10.515	ug/mlm
37)	n-C32	31.614	56741	10.303	ug/mlm
38)	n-C33	32.589	53772	10.331	ug/mlm
39)	n-C34	33.531	55704	10.491	ug/mlm
40)	n-C35	34.489	55427	10.471	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341C.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 23:21:05
Operator : Meghan Dailey
Sample : Blank Spike Dupl
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 13:28:05 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.566	57699	10.594	ug/mlm
42)	n-C37	36.803	56505	10.966	ug/mlm
43)	n-C38	38.242	55564	10.725	ug/mlm
44)	n-C39	39.917f	55807	10.822	ug/mlm
45)	n-C40	41.912	55518	10.839	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

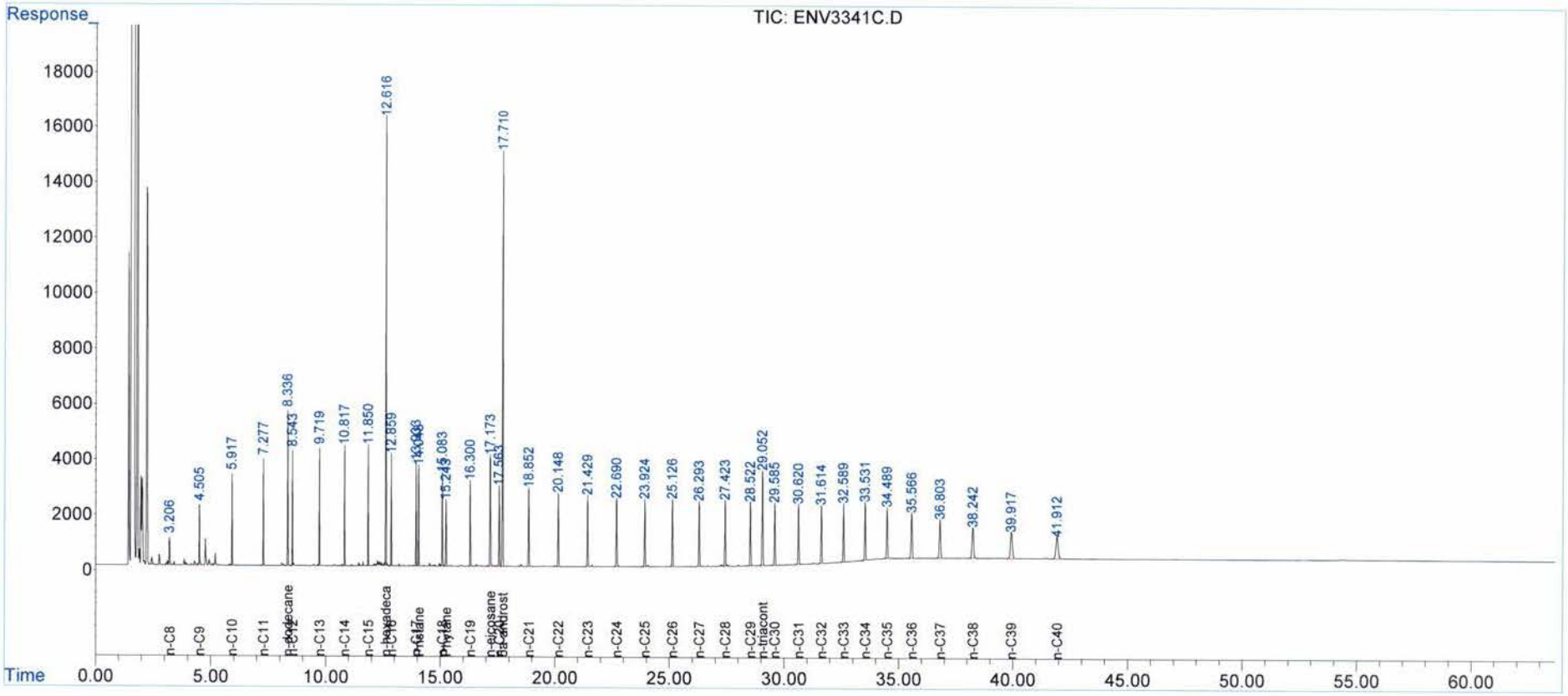
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ENV3341C.D
Signal(s) : FID1A.CH
Acq On : 06-Oct-2014, 23:21:05
Operator : Meghan Dailey
Sample : Blank Spike Dupl
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 13:28:05 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC2055.D**		ARC2055.D
Sample Name	**SHN-Cove-006(NB)092514**		SHN-Cove-006(NB)09251
Misc Info	**0**		07-Oct-2014, 01:42:25
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**07-Oct-2014, 01:42:25**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	10
Vial Number	**10**	IS Area 1	207201
Sample Multiplier	**1**	IS Area 2	292686

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.20	6688.43	1.66	1.660
3)	n-C9	4.51	12927.3	3.06	3.059
4)	n-C10	5.92	27656.4	6.26	6.260
5)	n-C11	7.28	66226.6	14.57	14.565
7)	n-C12	8.55	131912	27.74	27.741
8)	i-13	8.73	93142.9	19.25	19.249
9)	i-14	9.44	86816.8	17.67	17.673
10)	n-C13	9.72	189485	39.16	39.159
11)	i-15	10.60	238865	47.64	47.639
12)	n-C14	10.83	215297	43.83	43.828
13)	i-16	11.51	283399	56.29	56.293
14)	n-C15	11.86	244408	48.74	48.744
15)	n-C16	12.88	184011	36.55	36.551
17)	i-18	13.43	262986	46.59	46.586
18)	n-C17	13.96	109519	19.15	19.149
19)	Pristane	14.07	358985	63.27	63.268
20)	n-C18	15.10	53804	9.53	9.531
21)	Phytane	15.27	360197	73.53	73.527
22)	n-C19	16.33	104942	18.73	18.731
24)	n-C20	17.60	58251.3	10.29	10.288
25)	n-C21	18.92	41009	7.06	7.064
26)	n-C22	20.18	24989.9	4.38	4.379
27)	n-C23	21.44	18495.1	3.26	3.264
28)	n-C24	22.72	11725.2	2.08	2.078
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	14.07	334317000	62092.60	62092.600
47)	TRH1	8.55	929133	172.57	172.567
48)	TRH2	11.51	9575440	1778.44	1778.440
49)	TRH3	14.07	4647930	863.26	863.259
50)	TRH4	30.07	3530190	655.66	655.660
51)	TRH5	30.96	1613330	299.64	299.643
52)	TRH6	34.57	478491	88.87	88.870
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	8.34	75872.8	18.83	94.1
23)	n-eicosane-d42	17.20	81213.7	16.82	84.3
34)	n-triacontane-d62	29.10	81776.6	19.17	95.9
1)	n-hexadecane-d34	12.63	207201	50.00	207201.000
16)	5a-androstane	17.75	292686	50.04	292686.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2055.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 01:42:25
Operator : Meghan Dailey
Sample : SHN-Cove-006(NB)092514
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:27:04 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.630	207201	50.000	ug/mlm
16) I	5a-androstane	17.751	292686	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.337	75873	18.829	ug/mlm
23) S	n-eicosane-d42	17.201	81214	16.824	ug/mlm
34) S	n-triacontane-d62	29.095	81777	19.165	ug/mlm
Target Compounds					
2)	n-C8	3.196	6688	1.660	ug/mlm
3)	n-C9	4.507	12927	3.059	ug/mlm
4)	n-C10	5.920	27656	6.260	ug/mlm
5)	n-C11	7.278	66227	14.565	ug/mlm
7)	n-C12	8.545	131912	27.740	ug/mlm
8)	i-13	8.734	93143	19.249	ug/mlm
9)	i-14	9.441	86817	17.673	ug/mlm
10)	n-C13	9.724	189485	39.159	ug/mlm
11)	i-15	10.604	238865	47.639	ug/mlm
12)	n-C14	10.827	215297	43.828	ug/mlm
13)	i-16	11.506	283399	56.293	ug/mlm
14)	n-C15	11.863	244408	48.744	ug/mlm
15)	n-C16	12.876	184011	36.551	ug/mlm
17)	i-18	13.431	262986	46.586	ug/mlm
18)	n-C17	13.956	109519	19.149	ug/mlm
19)	Pristane	14.068	358985	63.268	ug/mlm
20)	n-C18	15.101	53804	9.531	ug/mlm
21)	Phytane	15.272	360197	73.527	ug/mlm
22)	n-C19	16.326	104942	18.731	ug/mlm
24)	n-C20	17.604	58251	10.288	ug/mlm
25)	n-C21	18.921f	41009	7.064	ug/mlm
26)	n-C22	20.183	24990	4.379	ug/mlm
27)	n-C23	21.443	18495	3.264	ug/mlm
28)	n-C24	22.720	11725	2.078	ug/mlm
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\FID10247\
Data File : ARC2055.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 01:42:25
Operator : Meghan Dailey
Sample : SHN-Cove-006(NB)092514
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:27:04 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	14.068f	334317115	62092.560	ug/mlm
47)	TRH1	8.545	929133	172.567	ug/mlm
48)	TRH2	11.506f	9575439	1778.442	ug/mlm
49)	TRH3	14.068f	4647935	863.259	ug/mlm
50)	TRH4	30.067f	3530187	655.660	ug/mlm
51)	TRH5	30.960f	1613332	299.643	ug/mlm
52)	TRH6	34.570f	478491	88.870	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

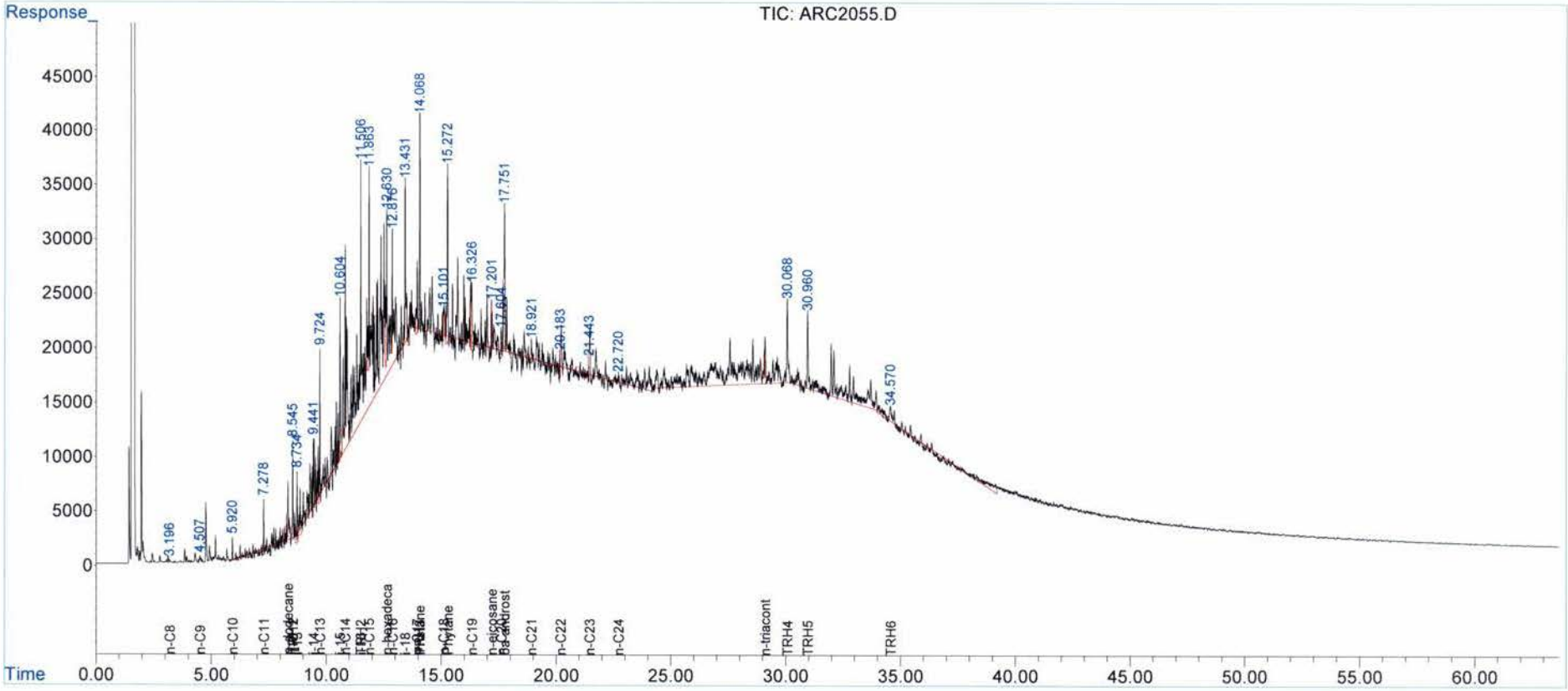
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2055.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 01:42:25
Operator : Meghan Dailey
Sample : SHN-Cove-006(NB)092514
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:27:04 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC2056.D**		ARC2056.D
Sample Name	**SHN-Cove-007(NB)092514**		SHN-Cove-007(NB)09251
Misc Info	**0**		07-Oct-2014, 02:52:50
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**07-Oct-2014, 02:52:50**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	11
Vial Number	**11**	IS Area 1	224588
Sample Multiplier	**1**	IS Area 2	287852

#	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	8.54	441.739	0.09	0.086
8)	i-13	8.74	453.467	0.09	0.086
9)	i-14	9.44	383.279	0.07	0.072
10)	n-C13	9.72	438.713	0.08	0.084
11)	i-15	10.60	1441.12	0.27	0.265
12)	n-C14	10.82	829.504	0.16	0.156
13)	i-16	11.49	1897.67	0.35	0.348
14)	n-C15	11.85	1081.59	0.20	0.199
15)	n-C16	12.87	1065.75	0.20	0.195
17)	i-18	13.41	3553.83	0.64	0.640
18)	n-C17	13.94	947.518	0.17	0.168
19)	Pristane	14.05	6043.07	1.08	1.083
20)	n-C18	15.08	1145.17	0.21	0.206
21)	Phytane	15.24	9444.26	1.96	1.960
22)	n-C19	16.29	1512.7	0.27	0.275
24)	n-C20	17.59	2305.56	0.41	0.414
25)	n-C21	18.89	2755.71	0.48	0.483
26)	n-C22	20.18	4380.18	0.78	0.780
27)	n-C23	21.43	3134.99	0.56	0.563
28)	n-C24	22.70	5510.8	0.99	0.993
29)	n-C25	23.93	7007.68	1.27	1.272
30)	n-C26	25.14	12136	2.18	2.180
31)	n-C27	26.30	16964.8	3.10	3.095
32)	n-C28	27.43	21887.7	4.01	4.014
33)	n-C29	28.53	28742.4	5.35	5.349
35)	n-C30	29.60	17614.3	3.29	3.285
36)	n-C31	30.62	14852.8	2.86	2.861
37)	n-C32	31.63	8018.85	1.52	1.524
38)	n-C33	32.60	4462.78	0.90	0.898
39)	n-C34	33.55	3913.53	0.77	0.772
40)	n-C35	34.51	3053.74	0.60	0.604
41)	n-C36	35.61	1207.24	0.23	0.232
42)	n-C37	36.84	1798.55	0.37	0.365
43)	n-C38	38.30	729.198	0.15	0.147
44)	n-C39	39.98	545.7	0.11	0.111
45)	n-C40	42.00	516.95	0.11	0.106
46)	TPH	12.62	37885500	7154.61	7154.610
47)	TRH1	8.34	104086	19.66	19.657
48)	TRH2	12.62	860705	162.54	162.543
49)	TRH3	26.30	134753	25.45	25.448
50)	TRH4	29.06	252825	47.75	47.746
51)	TRH5	33.55	114066	21.54	21.541
52)	TRH6	34.30	159576	30.14	30.136
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	8.34	62975.1	14.42	72.1
23)	n-eicosane-d42	17.18	85891.8	18.09	90.6
34)	n-triacontane-d62	29.06	82077	19.56	97.8
1)	n-hexadecane-d34	12.62	224588	50.00	224588.000
16)	5a-androstane	17.72	287852	50.04	287852.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2056.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 02:52:50
Operator : Meghan Dailey
Sample : SHN-Cove-007(NB)092514
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 14:17:03 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.618	224588	50.000	ug/mlm
16) I	5a-androstane	17.718	287852	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.337	62975	14.418	ug/mlm
23) S	n-eicosane-d42	17.177	85892	18.092	ug/mlm
34) S	n-triacontane-d62	29.061	82077	19.559	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	8.544	442	0.086	ug/mlm
8)	i-13	8.735	453	0.086	ug/mlm
9)	i-14	9.438	383	0.072	ug/mlm
10)	n-C13	9.718	439	0.084	ug/mlm
11)	i-15	10.597	1441	0.265	ug/mlm
12)	n-C14	10.821	830	0.156	ug/mlm
13)	i-16	11.495	1898	0.348	ug/mlm
14)	n-C15	11.853	1082	0.199	ug/mlm
15)	n-C16	12.865	1066	0.195	ug/mlm
17)	i-18	13.411	3554	0.640	ug/mlm
18)	n-C17	13.941	948	0.168	ug/mlm
19)	Pristane	14.046	6043	1.083	ug/mlm
20)	n-C18	15.079	1145	0.206	ug/mlm
21)	Phytane	15.245	9444	1.960	ug/mlm
22)	n-C19	16.292	1513	0.275	ug/mlm
24)	n-C20	17.589	2306	0.414	ug/mlm
25)	n-C21	18.890	2756	0.483	ug/mlm
26)	n-C22	20.175	4380	0.780	ug/mlm
27)	n-C23	21.428	3135	0.563	ug/mlm
28)	n-C24	22.700	5511	0.993	ug/mlm
29)	n-C25	23.932	7008	1.272	ug/mlm
30)	n-C26	25.135	12136	2.180	ug/mlm
31)	n-C27	26.299	16965	3.095	ug/mlm
32)	n-C28	27.432	21888	4.014	ug/mlm
33)	n-C29	28.527	28742	5.349	ug/mlm
35)	n-C30	29.597	17614	3.285	ug/mlm
36)	n-C31	30.625	14853	2.861	ug/mlm
37)	n-C32	31.628	8019	1.524	ug/mlm
38)	n-C33	32.597	4463	0.898	ug/mlm
39)	n-C34	33.549	3914	0.772	ug/mlm
40)	n-C35	34.515	3054	0.604	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2056.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 02:52:50
Operator : Meghan Dailey
Sample : SHN-Cove-007(NB)092514
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 14:17:03 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.606	1207	0.232	ug/mlm
42)	n-C37	36.837	1799	0.365	ug/mlm
43)	n-C38	38.301	729	0.147	ug/mlm
44)	n-C39	39.981	546	0.111	ug/mlm
45)	n-C40	41.999	517	0.106	ug/mlm
46)	TPH	12.618f	37885503	7154.608	ug/mlm
47)	TRH1	8.337	104086	19.656	ug/mlm
48)	TRH2	12.618f	860705	162.543	ug/mlm
49)	TRH3	26.299f	134753	25.448	ug/mlm
50)	TRH4	29.061f	252825	47.746	ug/mlm
51)	TRH5	33.549	114066	21.541	ug/mlm
52)	TRH6	34.298f	159576	30.136	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

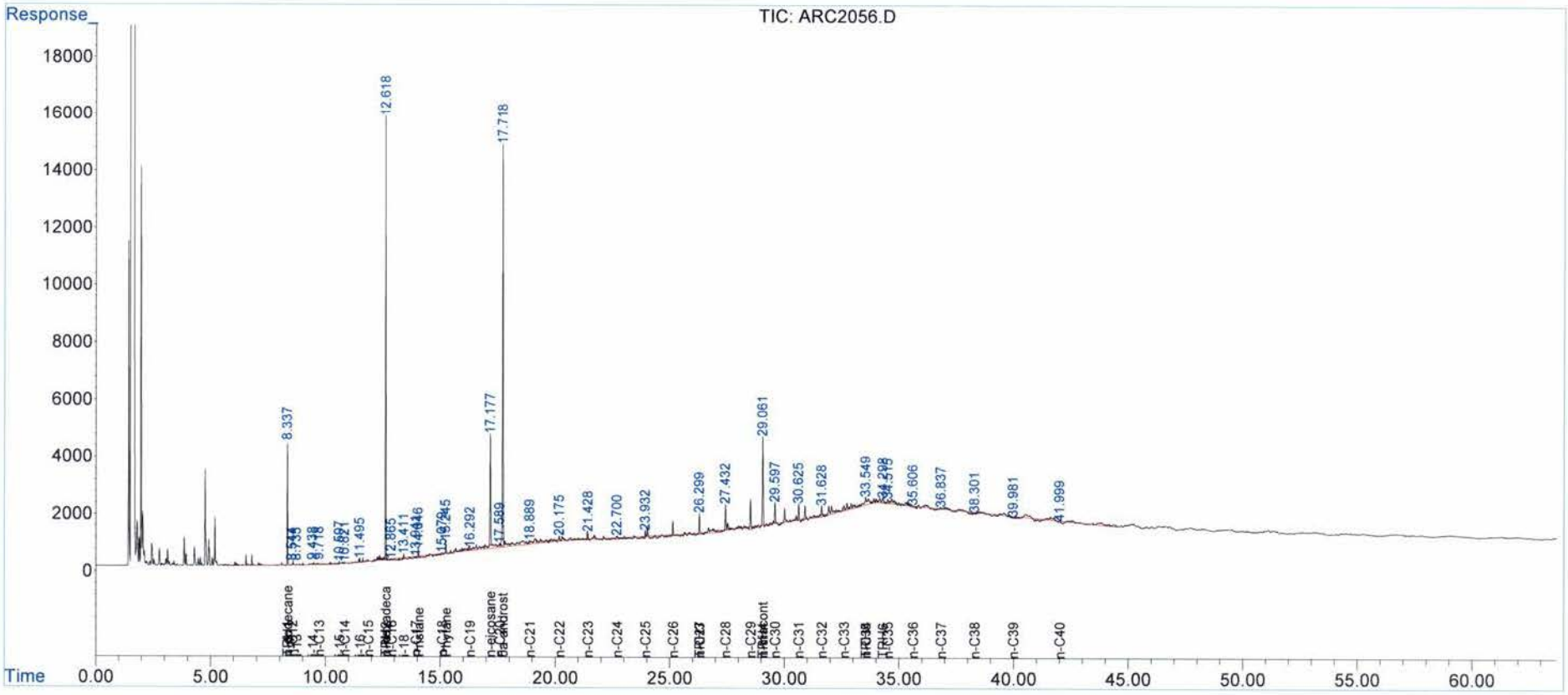
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2056.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 02:52:50
Operator : Meghan Dailey
Sample : SHN-Cove-007(NB)092514
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 07 14:17:03 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC2057.D**		ARC2057.D
Sample Name	**SHN-Cove-008(NB)092514**		SHN-Cove-008(NB)09251
Misc Info	**0**		07-Oct-2014, 04:03:13
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**07-Oct-2014, 04:03:13**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	12
Vial Number	**12**	IS Area 1	227631
Sample Multiplier	**1**	IS Area 2	290832

#	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	8.73	639.421	0.12	0.120
9)	i-14	9.44	549.197	0.10	0.102
10)	n-C13	0.00	0	0.00	0.000
11)	i-15	10.60	2432.39	0.44	0.442
12)	n-C14	0.00	0	0.00	0.000
13)	i-16	11.49	3975.76	0.72	0.719
14)	n-C15	0.00	0	0.00	0.000
15)	n-C16	0.00	0	0.00	0.000
17)	i-18	13.41	6465.71	1.15	1.153
18)	n-C17	0.00	0	0.00	0.000
19)	Pristane	14.04	10009.3	1.78	1.775
20)	n-C18	0.00	0	0.00	0.000
21)	Phytane	15.25	11131.4	2.29	2.287
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	12.62	29955400	5599.06	5599.060
47)	TRH1	8.34	96172.9	17.98	17.976
48)	TRH2	12.62	1037640	193.95	193.948
49)	TRH3	24.03	140585	26.28	26.277
50)	TRH4	29.06	251029	46.92	46.921
51)	TRH5	33.90	76212.8	14.25	14.245
52)	TRH6	34.51	156587	29.27	29.268
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	8.34	48266.4	10.90	54.5
23)	n-eicosane-d42	17.18	90577.6	18.88	94.6
34)	n-triacontane-d62	29.06	81926.9	19.32	96.7
1)	n-hexadecane-d34	12.62	227631	50.00	227631.000
16)	5a-androstane	17.72	290832	50.04	290832.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2057.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 04:03:13
Operator : Meghan Dailey
Sample : SHN-Cove-008(NB)092514
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:33:08 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.618	227631	50.000	ug/mlm
16) I	5a-androstane	17.717	290832	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.337	48266	10.903	ug/mlm
23) S	n-eicosane-d42	17.178	90578	18.883	ug/mlm
34) S	n-triacontane-d62	29.060	81927	19.323	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	8.734	639	0.120	ug/mlm
9)	i-14	9.438	549	0.102	ug/mlm
10)	n-C13	0.000	0	N.D.	ug/mld
11)	i-15	10.596	2432	0.442	ug/mlm
12)	n-C14	0.000	0	N.D.	ug/mld
13)	i-16	11.494	3976	0.719	ug/mlm
14)	n-C15	0.000	0	N.D.	ug/mld
15)	n-C16	0.000	0	N.D.	ug/mld
17)	i-18	13.412	6466	1.153	ug/mlm
18)	n-C17	0.000	0	N.D.	ug/mld
19)	Pristane	14.045	10009	1.775	ug/mlm
20)	n-C18	0.000	0	N.D.	ug/mld
21)	Phytane	15.246	11131	2.287	ug/mlm
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\FID10247\
Data File : ARC2057.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 04:03:13
Operator : Meghan Dailey
Sample : SHN-Cove-008(NB)092514
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:33:08 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.618f	29955410	5599.062	ug/mlm
47)	TRH1	8.337	96173	17.976	ug/mlm
48)	TRH2	12.618f	1037637	193.948	ug/mlm
49)	TRH3	24.031f	140585	26.277	ug/mlm
50)	TRH4	29.060f	251029	46.921	ug/mlm
51)	TRH5	33.900f	76213	14.245	ug/mlm
52)	TRH6	34.514f	156587	29.268	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

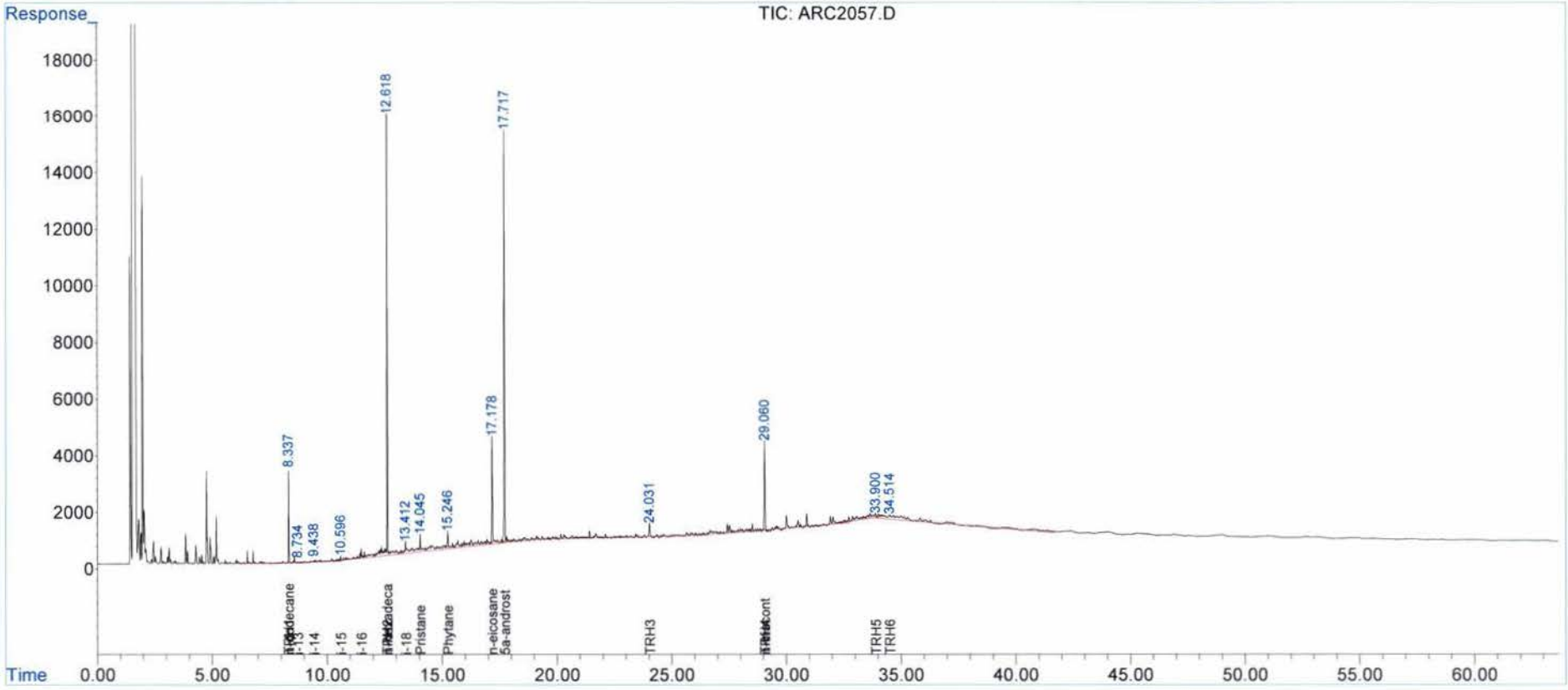
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2057.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 04:03:13
Operator : Meghan Dailey
Sample : SHN-Cove-008(NB)092514
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:33:08 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC2058.D**		ARC2058.D
Sample Name	**SHN-Cove-009(NB)092914**		SHN-Cove-009(NB)09291
Misc Info	**0**		07-Oct-2014, 05:13:43
Data File Path	**C:\msdchem\2\data\FID10247**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**07-Oct-2014, 05:13:43**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	13
Vial Number	**13**	IS Area 1	211813
Sample Multiplier	**1**	IS Area 2	258127

#	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	8.55	1466.91	0.30	0.302
8)	i-13	8.75	60333.6	12.20	12.197
9)	i-14	9.45	11686.5	2.33	2.327
10)	n-C13	9.72	2494.58	0.50	0.504
11)	i-15	10.60	5532.26	1.08	1.079
12)	n-C14	10.82	2531.67	0.50	0.504
13)	i-16	11.50	804.309	0.16	0.156
14)	n-C15	11.85	7917.63	1.54	1.545
15)	n-C16	12.86	2362.31	0.46	0.459
17)	i-18	13.40	1057.68	0.21	0.212
18)	n-C17	13.93	4619.96	0.92	0.916
19)	Pristane	14.06	2820.06	0.56	0.564
20)	n-C18	15.07	7443.44	1.50	1.495
21)	Phytane	15.24	762.951	0.18	0.177
22)	n-C19	16.31	6294.59	1.27	1.274
24)	n-C20	17.55	2163.16	0.43	0.433
25)	n-C21	18.86	5077.73	0.99	0.992
26)	n-C22	20.14	4112.04	0.82	0.817
27)	n-C23	21.43	1514.16	0.30	0.303
28)	n-C24	22.69	4487.53	0.90	0.902
29)	n-C25	23.95	3974.36	0.80	0.805
30)	n-C26	25.13	2265.74	0.45	0.454
31)	n-C27	26.28	5626.11	1.14	1.145
32)	n-C28	27.43	4712.99	0.96	0.964
33)	n-C29	28.53	6756.01	1.40	1.402
35)	n-C30	29.59	3128.18	0.65	0.651
36)	n-C31	30.62	5573.21	1.20	1.197
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	7.08	64742500	13634.50	13634.500
47)	TRH1	7.08	6975240	1468.96	1468.960
48)	TRH2	16.88	1305840	275.00	275.004
49)	TRH3	25.70	1267420	266.91	266.912
50)	TRH4	36.11	2232780	470.21	470.214
51)	TRH5	40.40	835343	175.92	175.920
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	8.34	68416.8	16.61	83.0
23)	n-eicosane-d42	17.18	83445.3	19.60	98.2
34)	n-triacontane-d62	29.06	72912.5	19.38	96.9
1)	n-hexadecane-d34	12.62	211813	50.00	211813.000
16)	5a-androstane	17.71	258127	50.04	258127.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2058.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 05:13:43
Operator : Meghan Dailey
Sample : SHN-Cove-009(NB)092914
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:35:21 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.617	211813	50.000	ug/mlm
16) I	5a-androstane	17.714	258127	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.338	68417	16.609	ug/mlm
23) S	n-eicosane-d42	17.175	83445	19.600	ug/mlm
34) S	n-triacontane-d62	29.060	72913	19.376	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	8.546	1467	0.302	ug/mlm
8)	i-13	8.755	60334	12.197	ug/mlm
9)	i-14	9.447	11686	2.327	ug/mlm
10)	n-C13	9.723	2495	0.504	ug/mlm
11)	i-15	10.601	5532	1.079	ug/mlm
12)	n-C14	10.818	2532	0.504	ug/mlm
13)	i-16	11.497	804	0.156	ug/mlm
14)	n-C15	11.852	7918	1.545	ug/mlm
15)	n-C16	12.863	2362	0.459	ug/mlm
17)	i-18	13.399	1058	0.212	ug/mlm
18)	n-C17	13.930	4620	0.916	ug/mlm
19)	Pristane	14.062	2820	0.564	ug/mlm
20)	n-C18	15.074	7443	1.495	ug/mlm
21)	Phytane	15.236	763	0.177	ug/mlm
22)	n-C19	16.310	6295	1.274	ug/mlm
24)	n-C20	17.552	2163	0.433	ug/mlm
25)	n-C21	18.856	5078	0.992	ug/mlm
26)	n-C22	20.139	4112	0.817	ug/mlm
27)	n-C23	21.431	1514	0.303	ug/mlm
28)	n-C24	22.686	4488	0.902	ug/mlm
29)	n-C25	23.945	3974	0.805	ug/mlm
30)	n-C26	25.134	2266	0.454	ug/mlm
31)	n-C27	26.283	5626	1.145	ug/mlm
32)	n-C28	27.430	4713	0.964	ug/mlm
33)	n-C29	28.527	6756	1.402	ug/mlm
35)	n-C30	29.588	3128	0.651	ug/mlm
36)	n-C31	30.621	5573	1.197	ug/mlm
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\FID10247\
Data File : ARC2058.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 05:13:43
Operator : Meghan Dailey
Sample : SHN-Cove-009(NB)092914
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:35:21 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	7.082f	64742473	13634.483	ug/mlm
47)	TRH1	7.082	6975239	1468.955	ug/mlm
48)	TRH2	16.877	1305841	275.004	ug/mlm
49)	TRH3	25.700f	1267415	266.912	ug/mlm
50)	TRH4	36.107f	2232782	470.214	ug/mlm
51)	TRH5	40.402f	835343	175.920	ug/mlm
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

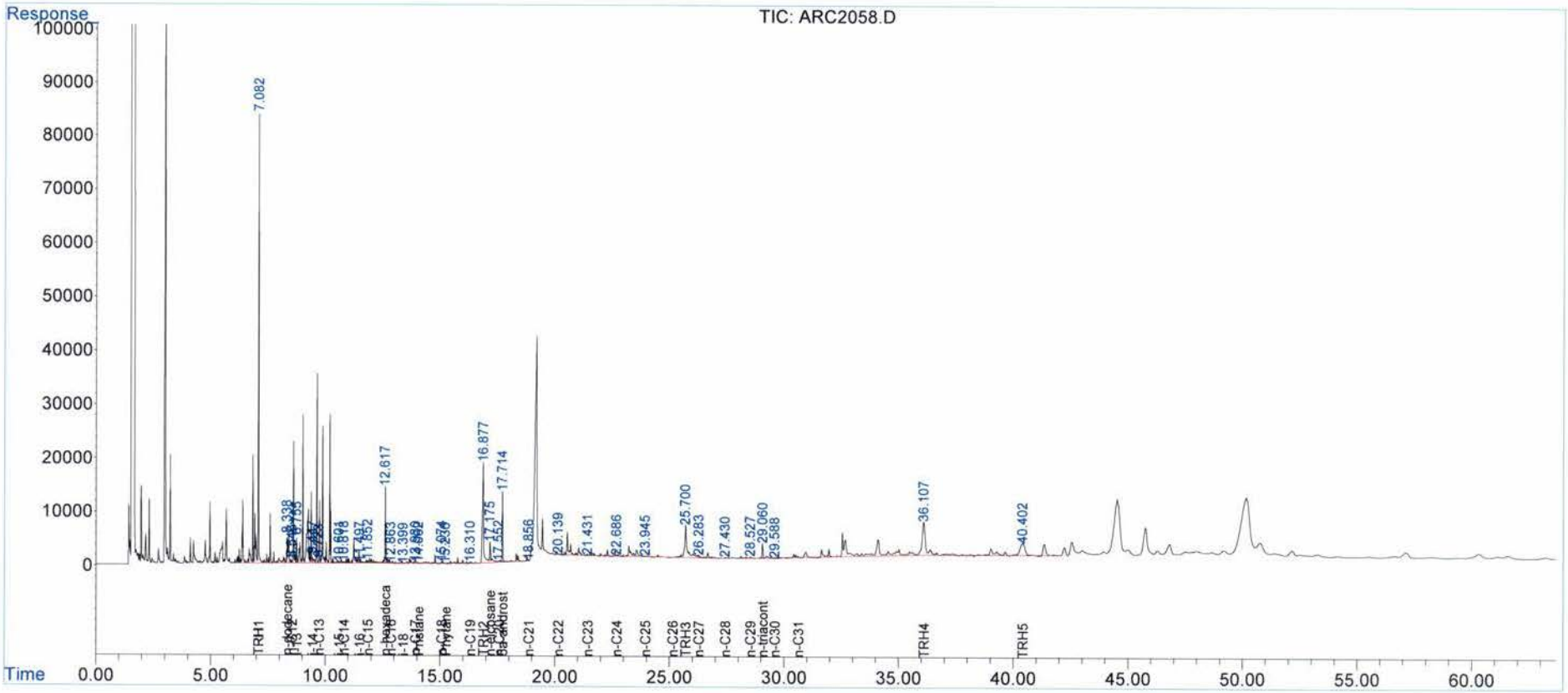
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10247\
Data File : ARC2058.D
Signal(s) : FID1A.CH
Acq On : 07-Oct-2014, 05:13:43
Operator : Meghan Dailey
Sample : SHN-Cove-009(NB)092914
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 12 17:35:21 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3341\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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 3341 Analyst: Y. Miao

Client: Arcadis - Mayflower AR Date: October 5, 2014

Job: #: J13034 Project Quality Manager: W Trond

SDG #: 14093001/14092601 Date: 10/15/14

Initial Calibration: No failures	ICV (from the second source): No failures
Surrogate Recoveries: No failures	
Method Blank: No failures	
Blank Spike: NA	
Blank Spike Duplicate: NA	
Laboratory Duplicate: NA	
Matrix Spike: NA	
Matirx Spike Duplicate: NA	
SRM/LCS (Solution, Tissue, Sediment): Solution: No failures SRM: NA	
Continuing Calibration (CCC): 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\MS70123.s
Comment: Arcadis-Mayflower AR-Net-PAH (10/02/14)
Operator: YM
Data Path: C:\MSDCHEM\1\DATA\MS70123\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

10/2/14 YM

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

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
( ) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
(X) Barcode Disabled

Line			Sample Name/Misc Info		
1)	Sample	100	CCS1	PAH-2014	
2)	Sample	100	CCS2	PAH-2014	
3)	Sample	100	CCS3	PAH-2014	
4)	Sample	1	MS70123A	PAH-2014	Solvent rinse
5)	Sample	2	MS70123B	PAH-2014	PAH-WKC1-020-034
6)	Sample	3	MS70123C	PAH-2014	PAH-WKC2-100-034
7)	Sample	4	MS70123D	PAH-2014	PAH-WKC3-250-034
8)	Sample	5	MS70123E	PAH-2014	PAH-WKC4-500-034
9)	Sample	6	MS70123F	PAH-2014	PAH-WKC5-1000-034
10)	Sample	7	MS70123G	PAH-2014	PAH-WKC6-5000-034
11)	Sample	8	MS70123H	PAH-2014	PAH-WKSUIS-250-007
12)	Sample	9	MS70123I	PAH-2014	PAH-WKICV-250-008
13)	Sample	10	MS70123J	PAH-2014	PAH-WKCCV-250-042
14)	Sample	11	MS70123K	PAH-2014	PAH-WKSRM2779-4.0-005
15)	Sample	12	ENV3341A	PAH-2014	
16)	Sample	13	ENV3341B	PAH-2014	
17)	Sample	14	ENV3341C	PAH-2014	
18)	Sample	15	ARC2055	PAH-2014	10x
19)	Sample	16	ARC2056	PAH-2014	
20)	Sample	17	ARC2057	PAH-2014	
21)	Sample	18	ARC2058D	PAH-2014	10x – reinject no dilution sample below
22)	Sample	19	MS70123L	PAH-2014	PAH-WKCCV-250-042
23)	Sample	18	ARC2058	PAH-2014	
24)	Sample	19	MS70123m	PAH-2014	PAH-WKCCV-250-042

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123J.D
Acq On : 2 Oct 2014 8:52 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 05 10:09:59 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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	83	0.00
2	S	Naphthalene-d8	1.676	1.697	-1.3	82	0.00
3	T	cis/trans Decalin	0.327	0.329	-0.6	81	0.00
4	un	C1-Decalins	0.327	0.000	100.0#	0#	-12.16#
5	un	C2-Decalins	0.327	0.000	100.0#	0#	-14.12#
6	un	C3-Decalins	0.327	0.000	100.0#	0#	-16.80#
7	un	C4-Decalins	0.327	0.000	100.0#	0#	-18.58#
8	T	Naphthalene	1.996	2.034	-1.9	82	0.00
9	T	2-Methylnaphthalene	1.303	1.319	-1.2	82	0.00
10	T	1-Methylnaphthalene	1.202	1.219	-1.4	82	0.00
11	T	2,6-Dimethylnaphthalene	1.161	1.169	-0.7	82	0.00
12	T	1,6,7-Trimethylnaphthalene	1.139	1.126	1.1	80	0.00
13	un	C2-Naphthalenes	1.996	0.000	100.0#	0#	-18.24#
14	un	C3-Naphthalenes	1.996	0.000	100.0#	0#	-19.76#
15	un	C4-Naphthalenes	1.996	0.000	100.0#	0#	-22.27#
16	T	Benzothiophene	1.689	1.724	-2.1	83	0.00
17	un	C1-Benzothiophenes	1.689	0.000	100.0#	0#	-15.79#
18	un	C2-Benzothiophenes	1.689	0.000	100.0#	0#	-18.11#
19	un	C3-Benzothiophenes	1.689	0.000	100.0#	0#	-20.04#
20	un	C4-Benzothiophenes	1.689	0.000	100.0#	0#	-21.89#
21	S	Acenaphthene-d10	0.974	0.966	0.8	81	0.00
22	T	Biphenyl	1.746	1.817	-4.1	82	0.00
23	T	Acenaphthylene	1.941	1.930	0.6	79	-0.01
24	T	Acenaphthene	1.136	1.133	0.3	81	0.00
25	T	Dibenzofuran	1.902	1.998	-5.0	83	-0.01
26	T	Fluorene	1.391	1.405	-1.0	81	0.00
27	T	1-Methylfluorene	0.830	0.798	3.9	79	-0.01
28	un	C1-Fluorenes	1.391	0.000	100.0#	0#	-23.28#
29	un	C2-Fluorenes	1.391	0.000	100.0#	0#	-25.51#
30	un	C3-Fluorenes	1.391	0.000	100.0#	0#	-26.79#
31	I	Pyrene-d10	1.000	1.000	0.0	80	0.00
32	S	Phenanthrene-d10	0.791	0.827	-4.6	82	0.00
33	T	Carbazole	0.845	0.836	1.1	77	-0.01
34	T	Dibenzothiophene	1.017	1.081	-6.3	82	0.00
35	T	4-Methyldibenzothiophene	0.701	0.724	-3.3	81	-0.01
36	un	2/3-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-25.96#
37	un	1-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-26.28#
38	un	C2-Dibenzothiophenes	1.017	0.000	100.0#	0#	-27.07#
39	un	C3-Dibenzothiophenes	1.017	0.000	100.0#	0#	-29.25#
40	un	C4-Dibenzothiophenes	1.017	0.000	100.0#	0#	-30.04#
41	T	Phenanthrene	0.982	1.048	-6.7	82	-0.01
42	T	Anthracene	0.939	0.966	-2.9	79	0.00
43	un	3-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
44	un	2-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
45	un	2-Methylanthracene	0.789	0.000	100.0#	0#	-26.70#
46	un	4/9-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.70#
47	T	1-Methylphenanthrene	0.789	0.797	-1.0	80	0.00
48	T	3,6-Dimethylphenanthrene	0.697	0.689	1.1	78	0.00
49	T	Retene	0.385	0.366	4.9	77	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123J.D
Acq On : 2 Oct 2014 8:52 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 05 10:09:59 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)
50	un	C2-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-28.33#
51	un	C3-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-29.70#
52	un	C4-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-31.29#
53	T	Naphthobenzothiophene	1.174	1.205	-2.6	78	0.00
54	un	C1-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-34.32#
55	un	C2-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.07#
56	un	C3-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.89#
57	un	C4-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-37.79#
58	T	Fluoranthene	1.182	1.238	-4.7	79	0.00
59	T	Pyrene	1.286	1.368	-6.4	80	-0.02
60	T	2-Methylfluoranthene	0.819	0.804	1.8	77	0.00
61	T	Benzo(b)fluorene	0.773	0.737	4.7	76	0.00
62	un	C1-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.61#
63	un	C2-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.88#
64	un	C3-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-33.16#
65	un	C4-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-35.11#
66	S	Chrysene-d12	1.084	1.146	-5.7	81	-0.02
67	T	Benz(a)anthracene	1.232	1.225	0.6	76	-0.02
68	T	Chrysene/Triphenylene	1.230	1.297	-5.4	80	0.00
69	un	C1-Chrysenes	1.230	0.000	100.0#	0#	-34.96#
70	un	C2-Chrysenes	1.230	0.000	100.0#	0#	-36.52#
71	un	C3-Chrysenes	1.230	0.000	100.0#	0#	-37.51#
72	un	C4-Chrysenes	1.230	0.000	100.0#	0#	-37.75#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	76	-0.02
74	un	C29-Hopane	0.515	0.000	100.0#	0#	-40.55#
75	un	18a-Oleanane	0.515	0.000	100.0#	0#	-41.47#
76	T	C30-Hopane	0.515	0.495	3.9	75	-0.03
77	T	Benzo(b)fluoranthene	1.163	1.208	-3.9	75	-0.02
78	T	Benzo(k,j)fluoranthene	1.150	1.250	-8.7	79	-0.02
79	un	Benzo(a)fluoranthene	1.150	0.000	100.0#	0#	-37.07#
80	T	Benzo(e)pyrene	1.430	1.527	-6.8	77	-0.02
81	T	Benzo(a)pyrene	1.236	1.302	-5.3	77	-0.02
82	T	Indeno(1,2,3-c,d)pyrene	1.654	1.663	-0.5	75	-0.04
83	T	Dibenzo(a,h)anthracene	1.306	1.310	-0.3	75	-0.03
84	un	C1-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-47.46#
85	un	C2-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-49.13#
86	un	C3-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-48.44#
87	T	Benzo(g,h,i)perylene	1.463	1.484	-1.4	76	-0.04
88	S	Perylene-d12	1.116	1.157	-3.7	77	-0.03
89	T	Perylene	1.414	1.496	-5.8	78	-0.02
90	S	5(b)H-Cholane	0.271	0.259	4.4	75	0.00
91	un	C20-TAS	0.271	0.000	100.0#	0#	-33.41#
92	un	C21-TAS	0.271	0.000	100.0#	0#	-33.99#
93	un	C26(20S)-TAS	0.271	0.000	100.0#	0#	-38.42#
94	un	C26(20R)/C27(20S)-TAS	0.271	0.000	100.0#	0#	-39.13#
95	un	C28(20S)-TAS	0.271	0.000	100.0#	0#	-40.38#
96	un	C27(20R)-TAS	0.271	0.000	100.0#	0#	-40.38#
97	un	C28(20R)-TAS	0.271	0.000	100.0#	0#	-41.30#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123J.D
Acq On : 2 Oct 2014 8:52 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 05 10:09:59 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123J.D
Acq On : 2 Oct 2014 8:52 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 05 10:09:59 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	269675	251.05			0.00
31) Pyrene-d10	29.410	212	560861	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	609829	250.32			-0.02
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	455832	253.27			0.00
21) Acenaphthene-d10	19.415	164	259672	248.21			0.00
32) Phenanthrene-d10	24.508	188	463006	261.40			0.00
66) Chrysene-d12	33.584	240	640971	264.33			-0.02
88) Perylene-d12	38.423	264	705038	259.25			-0.03
90) 5(b)H-Cholane	33.989	217	157955	239.44			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.930	138	87402m	248.64			
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	13.629	128	538531	251.12			99
9) 2-Methylnaphthalene	15.876	142	351644	251.27			99
10) 1-Methylnaphthalene	16.200	142	325697	252.17			97
11) 2,6-Dimethylnaphthalene	17.961	156	313553	251.50			92
12) 1,6,7-Trimethylnaphtha...	20.821	170	302894	247.47			94
13) C2-Naphthalenes	0.000		0	N.D.			
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.797	134	461623	254.39			100
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	17.444	154	486413	259.30			91
23) Acenaphthylene	18.912	152	517875	248.39			96
24) Acenaphthene	19.513	154	305996	250.65			98
25) Dibenzofuran	20.099	168	535459	262.09			100
26) Fluorene	21.283	166	371923	249.00			98
27) 1-Methylfluorene	23.264	180	215977	242.30		#	67
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	25.333	167	466336	246.50			100
34) Dibenzothiophene	24.159	184	598341	262.99			94
35) 4-Methyldibenzothiophene	25.654	198	407620	260.00			100
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	24.578	178	584416	265.89			98
42) Anthracene	24.760	178	540954	257.43			96
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123J.D
Acq On : 2 Oct 2014 8:52 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 05 10:09:59 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

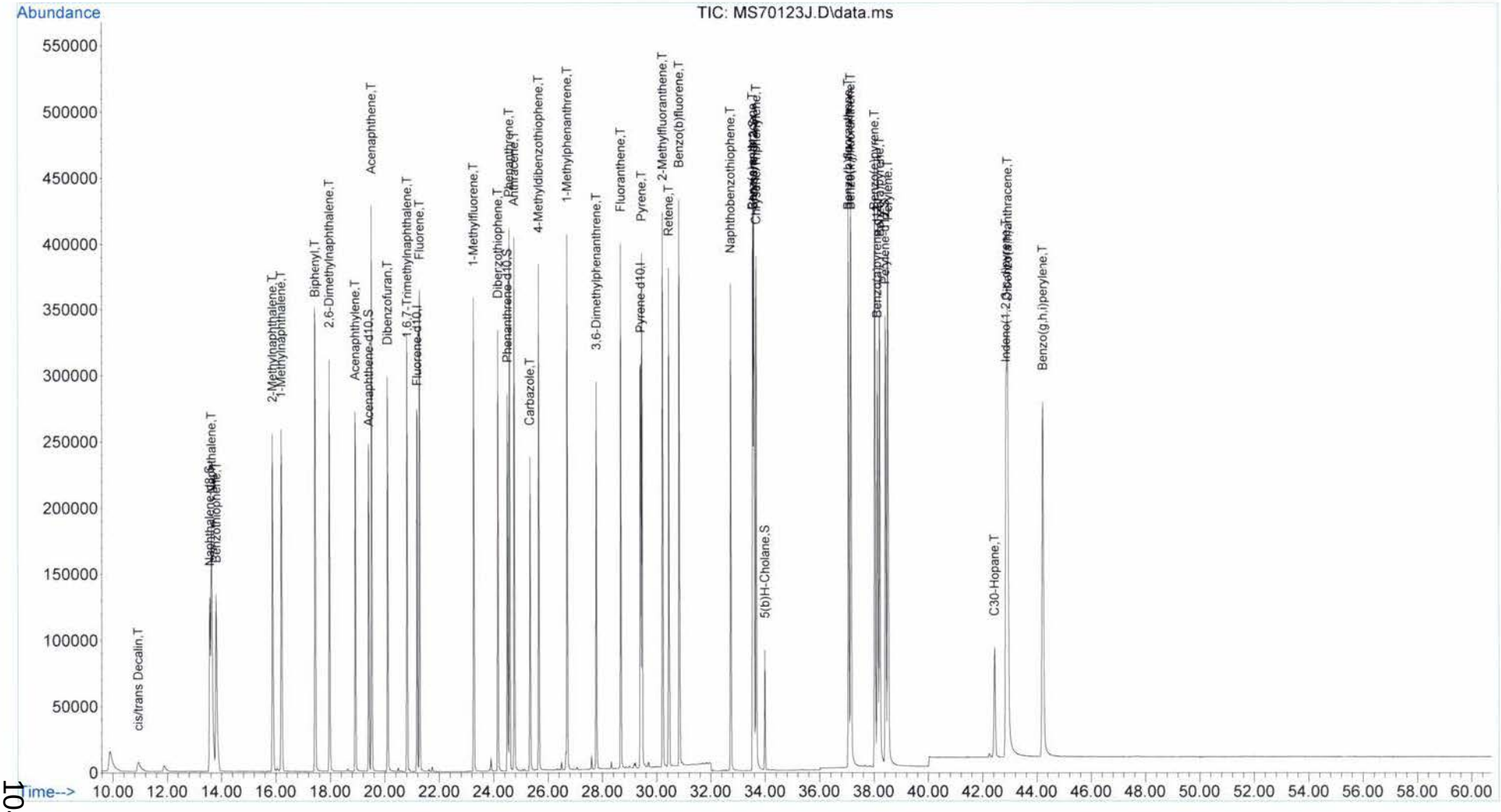
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.703	192	442728	250.78			99
48) 3,6-Dimethylphenanthrene	27.779	206	386185	247.51			94
49) Retene	30.449	234	205079	238.15		#	50
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.734	234	677643	257.89			100
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	28.676	202	697238	263.70		#	100
59) Pyrene	29.450	202	765946	266.13		#	100
60) 2-Methylfluoranthene	30.225	216	450144	245.56		#	100
61) Benzo(b)fluorene	30.837	216	413975	239.35			99
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.545	228	678721	246.23			100
68) Chrysene/Triphenylene	33.680	228	719278	261.32			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	42.436	191	301775	240.32			100
77) Benzo(b)fluoranthene	37.066	252	732647	258.49			99
78) Benzo(k,j)fluoranthene	37.152	252	762752	272.26			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	932977	267.75			99
81) Benzo(a)pyrene	38.217	252	792054	263.15			100
82) Indeno(1,2,3-c,d)pyrene	42.862	276	1012630	251.36			100
83) Dibenzo(a,h)anthracene	42.927	278	791611	248.80			91
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	44.219	276	891307	250.08			95
89) Perylene	38.526	252	911384	264.62		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123J.D
Acq On : 2 Oct 2014 8:52 pm
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 05 10:09:59 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123L.D
Acq On : 3 Oct 2014 7:17 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:45:41 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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	1.676	1.438	14.2	69	0.00
3	T	cis/trans Decalin	0.327	0.277	15.3	67	0.01
4	un	C1-Decalins	0.327	0.000	100.0#	0#	-12.16#
5	un	C2-Decalins	0.327	0.000	100.0#	0#	-14.12#
6	un	C3-Decalins	0.327	0.000	100.0#	0#	-16.80#
7	un	C4-Decalins	0.327	0.000	100.0#	0#	-18.58#
8	T	Naphthalene	1.996	1.727	13.5	69	0.00
9	T	2-Methylnaphthalene	1.303	1.205	7.5	74	0.00
10	T	1-Methylnaphthalene	1.202	1.117	7.1	74	0.00
11	T	2,6-Dimethylnaphthalene	1.161	1.125	3.1	77	0.00
12	T	1,6,7-Trimethylnaphthalene	1.139	1.124	1.3	78	0.00
13	un	C2-Naphthalenes	1.996	0.000	100.0#	0#	-18.24#
14	un	C3-Naphthalenes	1.996	0.000	100.0#	0#	-19.76#
15	un	C4-Naphthalenes	1.996	0.000	100.0#	0#	-22.27#
16	T	Benzothiophene	1.689	1.473	12.8	69	0.00
17	un	C1-Benzothiophenes	1.689	0.000	100.0#	0#	-15.79#
18	un	C2-Benzothiophenes	1.689	0.000	100.0#	0#	-18.11#
19	un	C3-Benzothiophenes	1.689	0.000	100.0#	0#	-20.04#
20	un	C4-Benzothiophenes	1.689	0.000	100.0#	0#	-21.89#
21	S	Acenaphthene-d10	0.974	0.933	4.2	77	0.00
22	T	Biphenyl	1.746	1.632	6.5	73	0.00
23	T	Acenaphthylene	1.941	1.944	-0.2	78	-0.01
24	T	Acenaphthene	1.136	1.113	2.0	78	0.00
25	T	Dibenzofuran	1.902	1.870	1.7	76	-0.01
26	T	Fluorene	1.391	1.416	-1.8	80	0.00
27	T	1-Methylfluorene	0.830	0.842	-1.4	82	-0.01
28	un	C1-Fluorenes	1.391	0.000	100.0#	0#	-23.28#
29	un	C2-Fluorenes	1.391	0.000	100.0#	0#	-25.51#
30	un	C3-Fluorenes	1.391	0.000	100.0#	0#	-26.79#
31	I	Pyrene-d10	1.000	1.000	0.0	83	0.00
32	S	Phenanthrene-d10	0.791	0.788	0.4	81	0.00
33	T	Carbazole	0.845	0.868	-2.7	83	-0.01
34	T	Dibenzothiophene	1.017	1.023	-0.6	79	0.00
35	T	4-Methyldibenzothiophene	0.701	0.702	-0.1	81	-0.01
36	un	2/3-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-25.96#
37	un	1-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-26.28#
38	un	C2-Dibenzothiophenes	1.017	0.000	100.0#	0#	-27.07#
39	un	C3-Dibenzothiophenes	1.017	0.000	100.0#	0#	-29.25#
40	un	C4-Dibenzothiophenes	1.017	0.000	100.0#	0#	-30.04#
41	T	Phenanthrene	0.982	0.998	-1.6	80	-0.01
42	T	Anthracene	0.939	0.957	-1.9	81	0.00
43	un	3-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
44	un	2-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
45	un	2-Methylanthracene	0.789	0.000	100.0#	0#	-26.70#
46	un	4/9-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.70#
47	T	1-Methylphenanthrene	0.789	0.807	-2.3	83	0.00
48	T	3,6-Dimethylphenanthrene	0.697	0.717	-2.9	84	0.00
49	T	Retene	0.385	0.381	1.0	83	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123L.D
Acq On : 3 Oct 2014 7:17 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:45:41 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)
50	un	C2-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-28.33#
51	un	C3-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-29.70#
52	un	C4-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-31.29#
53	T	Naphthobenzothiophene	1.174	1.216	-3.6	81	0.00
54	un	C1-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-34.32#
55	un	C2-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.07#
56	un	C3-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.89#
57	un	C4-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-37.79#
58	T	Fluoranthene	1.182	1.232	-4.2	81	0.00
59	T	Pyrene	1.286	1.328	-3.3	80	-0.02
60	T	2-Methylfluoranthene	0.819	0.845	-3.2	83	0.00
61	T	Benzo(b)fluorene	0.773	0.799	-3.4	85	0.00
62	un	C1-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.61#
63	un	C2-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.88#
64	un	C3-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-33.16#
65	un	C4-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-35.11#
66	S	Chrysene-d12	1.084	1.098	-1.3	80	-0.02
67	T	Benz(a)anthracene	1.232	1.304	-5.8	84	-0.02
68	T	Chrysene/Triphenylene	1.230	1.267	-3.0	80	0.00
69	un	C1-Chrysenes	1.230	0.000	100.0#	0#	-34.96#
70	un	C2-Chrysenes	1.230	0.000	100.0#	0#	-36.52#
71	un	C3-Chrysenes	1.230	0.000	100.0#	0#	-37.51#
72	un	C4-Chrysenes	1.230	0.000	100.0#	0#	-37.75#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	78	-0.02
74	un	C29-Hopane	0.515	0.000	100.0#	0#	-40.55#
75	un	18a-Oleanane	0.515	0.000	100.0#	0#	-41.47#
76	T	C30-Hopane	0.515	0.475	7.8	74	-0.03
77	T	Benzo(b)fluoranthene	1.163	1.253	-7.7	80	-0.02
78	T	Benzo(k,j)fluoranthene	1.150	1.278	-11.1	84	-0.02
79	un	Benzo(a)fluoranthene	1.150	0.000	100.0#	0#	-37.07#
80	T	Benzo(e)pyrene	1.430	1.502	-5.0	78	-0.02
81	T	Benzo(a)pyrene	1.236	1.292	-4.5	79	-0.02
82	T	Indeno(1,2,3-c,d)pyrene	1.654	1.573	4.9	73	-0.04
83	T	Dibenzo(a,h)anthracene	1.306	1.288	1.4	76	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-47.46#
85	un	C2-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-49.13#
86	un	C3-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-48.44#
87	T	Benzo(g,h,i)perylene	1.463	1.337	8.6	70	-0.04
88	S	Perylene-d12	1.116	1.130	-1.3	77	-0.03
89	T	Perylene	1.414	1.453	-2.8	77	-0.03
90	S	5(b)H-Cholane	0.271	0.260	4.1	77	0.00
91	un	C20-TAS	0.271	0.000	100.0#	0#	-33.41#
92	un	C21-TAS	0.271	0.000	100.0#	0#	-33.99#
93	un	C26(20S)-TAS	0.271	0.000	100.0#	0#	-38.42#
94	un	C26(20R)/C27(20S)-TAS	0.271	0.000	100.0#	0#	-39.13#
95	un	C28(20S)-TAS	0.271	0.000	100.0#	0#	-40.38#
96	un	C27(20R)-TAS	0.271	0.000	100.0#	0#	-40.38#
97	un	C28(20R)-TAS	0.271	0.000	100.0#	0#	-41.30#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123L.D
Acq On : 3 Oct 2014 7:17 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:45:41 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123L.D
Acq On : 3 Oct 2014 7:17 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:45:41 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	264498	251.05			0.00
31) Pyrene-d10	29.410	212	577073	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	627734	250.32			-0.02
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	379016	214.71			0.00
21) Acenaphthene-d10	19.415	164	245963	239.70			0.00
32) Phenanthrene-d10	24.508	188	454138	249.19			0.00
66) Chrysene-d12	33.584	240	632317	253.43			-0.02
88) Perylene-d12	38.423	264	708806	253.20			-0.03
90) 5(b)H-Cholane	33.990	217	163147	240.26			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.943	138	72301m	209.70			
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	13.629	128	448542	213.25			99
9) 2-Methylnaphthalene	15.876	142	315074	229.55			99
10) 1-Methylnaphthalene	16.200	142	292695	231.05			96
11) 2,6-Dimethylnaphthalene	17.961	156	296140	242.19			86
12) 1,6,7-Trimethylnaphtha...	20.822	170	296649	247.11			95
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	13.797	134	386870	217.37			100
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	17.444	154	428583	232.95			92
23) Acenaphthylene	18.912	152	511478	250.12			96
24) Acenaphthene	19.513	154	294812	246.22			98
25) Dibenzofuran	20.099	168	491451	245.26			100
26) Fluorene	21.283	166	367824	251.07			99
27) 1-Methylfluorene	23.264	180	223526	255.68		#	64
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	25.333	167	498048	255.86			100
34) Dibenzothiophene	24.159	184	582579	248.87			95
35) 4-Methyldibenzothiophene	25.655	198	406939	252.27			100
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	24.578	178	572600	253.20			98
42) Anthracene	24.760	178	551343	255.01			96
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123L.D
Acq On : 3 Oct 2014 7:17 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:45:41 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

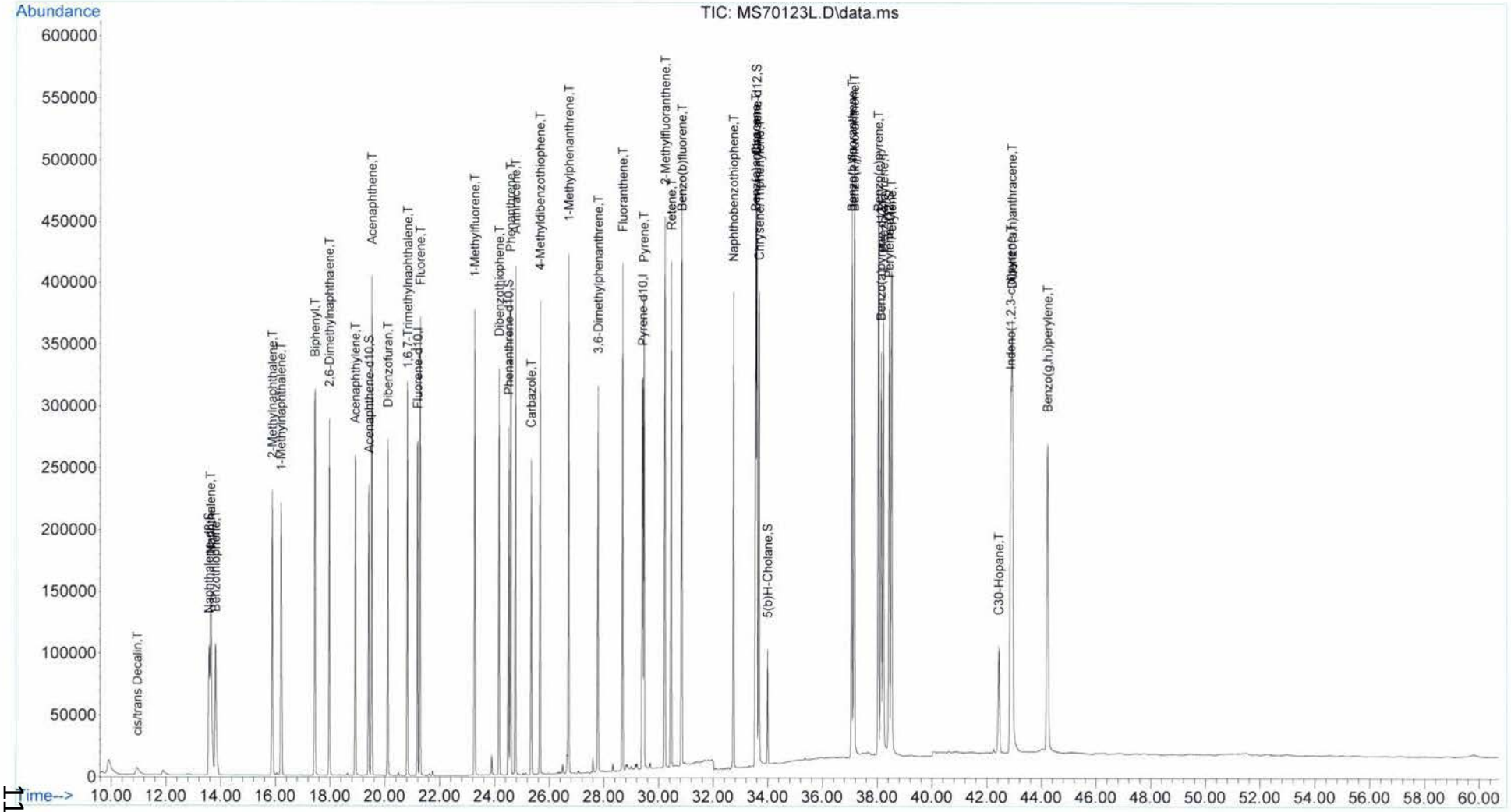
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.703	192	461208	253.91			99
48) 3,6-Dimethylphenanthrene	27.779	206	413459	257.54			94
49) Retene	30.449	234	219572	247.82		#	50
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.734	234	703620	260.25			100
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	28.676	202	714185	262.52		#	100
59) Pyrene	29.451	202	765260	258.42		#	100
60) 2-Methylfluoranthene	30.225	216	486891	258.14		#	100
61) Benzo(b)fluorene	30.837	216	462219	259.74			99
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.545	228	743377	262.11			100
68) Chrysene/Triphenylene	33.681	228	723019	255.30			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	42.436	191	298090	230.62			100
77) Benzo(b)fluoranthene	37.066	252	782448	268.19			100
78) Benzo(k,j)fluoranthene	37.152	252	802994	278.45			99
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	944457	263.31			99
81) Benzo(a)pyrene	38.217	252	808881	261.07			100
82) Indeno(1,2,3-c,d)pyrene	42.863	276	986382	237.86			100
83) Dibenzo(a,h)anthracene	42.914	278	801295	244.66			90
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	44.219	276	826184	225.20			95
89) Perylene	38.509	252	910972	256.95		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123L.D
Acq On : 3 Oct 2014 7:17 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:45:41 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123M.D
Acq On : 3 Oct 2014 10:43 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:49:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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	92	0.00
2	S	Naphthalene-d8	1.676	1.309	21.9	71	0.01
3	T	cis/trans Decalin	0.327	0.248	24.2	68	0.01
4	un	C1-Decalins	0.327	0.000	100.0#	0#	-12.16#
5	un	C2-Decalins	0.327	0.000	100.0#	0#	-14.12#
6	un	C3-Decalins	0.327	0.000	100.0#	0#	-16.80#
7	un	C4-Decalins	0.327	0.000	100.0#	0#	-18.58#
8	T	Naphthalene	1.996	1.573	21.2	71	0.01
9	T	2-Methylnaphthalene	1.303	1.119	14.1	78	0.01
10	T	1-Methylnaphthalene	1.202	1.035	13.9	77	0.01
11	T	2,6-Dimethylnaphthalene	1.161	1.093	5.9	85	0.01
12	T	1,6,7-Trimethylnaphthalene	1.139	1.090	4.3	86	0.00
13	un	C2-Naphthalenes	1.996	0.000	100.0#	0#	-18.24#
14	un	C3-Naphthalenes	1.996	0.000	100.0#	0#	-19.76#
15	un	C4-Naphthalenes	1.996	0.000	100.0#	0#	-22.27#
16	T	Benzothiophene	1.689	1.347	20.2	72	0.01
17	un	C1-Benzothiophenes	1.689	0.000	100.0#	0#	-15.79#
18	un	C2-Benzothiophenes	1.689	0.000	100.0#	0#	-18.11#
19	un	C3-Benzothiophenes	1.689	0.000	100.0#	0#	-20.04#
20	un	C4-Benzothiophenes	1.689	0.000	100.0#	0#	-21.89#
21	S	Acenaphthene-d10	0.974	0.898	7.8	84	0.00
22	T	Biphenyl	1.746	1.549	11.3	78	0.00
23	T	Acenaphthylene	1.941	1.867	3.8	85	0.00
24	T	Acenaphthene	1.136	1.061	6.6	84	0.01
25	T	Dibenzofuran	1.902	1.839	3.3	85	0.00
26	T	Fluorene	1.391	1.406	-1.1	90	0.00
27	T	1-Methylfluorene	0.830	0.850	-2.4	94	0.00
28	un	C1-Fluorenes	1.391	0.000	100.0#	0#	-23.28#
29	un	C2-Fluorenes	1.391	0.000	100.0#	0#	-25.51#
30	un	C3-Fluorenes	1.391	0.000	100.0#	0#	-26.79#
31	I	Pyrene-d10	1.000	1.000	0.0	94	0.00
32	S	Phenanthrene-d10	0.791	0.789	0.3	92	0.01
33	T	Carbazole	0.845	0.889	-5.2	96	0.00
34	T	Dibenzothiophene	1.017	1.024	-0.7	91	0.01
35	T	4-Methyldibenzothiophene	0.701	0.706	-0.7	93	0.00
36	un	2/3-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-25.96#
37	un	1-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-26.28#
38	un	C2-Dibenzothiophenes	1.017	0.000	100.0#	0#	-27.07#
39	un	C3-Dibenzothiophenes	1.017	0.000	100.0#	0#	-29.25#
40	un	C4-Dibenzothiophenes	1.017	0.000	100.0#	0#	-30.04#
41	T	Phenanthrene	0.982	0.990	-0.8	91	0.00
42	T	Anthracene	0.939	0.970	-3.3	94	0.01
43	un	3-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
44	un	2-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
45	un	2-Methylanthracene	0.789	0.000	100.0#	0#	-26.70#
46	un	4/9-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.70#
47	T	1-Methylphenanthrene	0.789	0.817	-3.5	96	0.01
48	T	3,6-Dimethylphenanthrene	0.697	0.723	-3.7	97	0.00
49	T	Retene	0.385	0.386	-0.3	96	0.00

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123M.D
Acq On : 3 Oct 2014 10:43 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:49:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)
50	un	C2-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-28.33#
51	un	C3-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-29.70#
52	un	C4-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-31.29#
53	T	Naphthobenzothiophene	1.174	1.203	-2.5	92	0.02
54	un	C1-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-34.32#
55	un	C2-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.07#
56	un	C3-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.89#
57	un	C4-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-37.79#
58	T	Fluoranthene	1.182	1.233	-4.3	93	0.02
59	T	Pyrene	1.286	1.319	-2.6	91	0.00
60	T	2-Methylfluoranthene	0.819	0.847	-3.4	95	0.00
61	T	Benzo(b)fluorene	0.773	0.792	-2.5	96	0.02
62	un	C1-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.61#
63	un	C2-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.88#
64	un	C3-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-33.16#
65	un	C4-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-35.11#
66	S	Chrysene-d12	1.084	1.058	2.4	87	0.00
67	T	Benz(a)anthracene	1.232	1.258	-2.1	92	0.00
68	T	Chrysene/Triphenylene	1.230	1.226	0.3	89	0.00
69	un	C1-Chrysenes	1.230	0.000	100.0#	0#	-34.96#
70	un	C2-Chrysenes	1.230	0.000	100.0#	0#	-36.52#
71	un	C3-Chrysenes	1.230	0.000	100.0#	0#	-37.51#
72	un	C4-Chrysenes	1.230	0.000	100.0#	0#	-37.75#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	74	0.00
74	un	C29-Hopane	0.515	0.000	100.0#	0#	-40.55#
75	un	18a-Oleanane	0.515	0.000	100.0#	0#	-41.47#
76	T	C30-Hopane	0.515	0.472	8.3	69	-0.01
77	T	Benzo(b)fluoranthene	1.163	1.357	-16.7	82	0.00
78	T	Benzo(k,j)fluoranthene	1.150	1.388	-20.7	85	0.00
79	un	Benzo(a)fluoranthene	1.150	0.000	100.0#	0#	-37.07#
80	T	Benzo(e)pyrene	1.430	1.525	-6.6	75	0.00
81	T	Benzo(a)pyrene	1.236	1.277	-3.3	74	0.00
82	T	Indeno(1,2,3-c,d)pyrene	1.654	1.316	20.4	58	-0.01
83	T	Dibenzo(a,h)anthracene	1.306	1.101	15.7	61	-0.01
84	un	C1-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-47.46#
85	un	C2-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-49.13#
86	un	C3-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-48.44#
87	T	Benzo(g,h,i)perylene	1.463	1.066	27.1#	53	-0.01
88	S	Perylene-d12	1.116	1.110	0.5	71	-0.02
89	T	Perylene	1.414	1.423	-0.6	71	-0.02
90	S	5(b)H-Cholane	0.271	0.297	-9.6	83	0.00
91	un	C20-TAS	0.271	0.000	100.0#	0#	-33.41#
92	un	C21-TAS	0.271	0.000	100.0#	0#	-33.99#
93	un	C26(20S)-TAS	0.271	0.000	100.0#	0#	-38.42#
94	un	C26(20R)/C27(20S)-TAS	0.271	0.000	100.0#	0#	-39.13#
95	un	C28(20S)-TAS	0.271	0.000	100.0#	0#	-40.38#
96	un	C27(20R)-TAS	0.271	0.000	100.0#	0#	-40.38#
97	un	C28(20R)-TAS	0.271	0.000	100.0#	0#	-41.30#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123M.D
Acq On : 3 Oct 2014 10:43 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:49:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123M.D
Acq On : 3 Oct 2014 10:43 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:49:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	299795	251.05			0.00
31) Pyrene-d10	29.410	212	658512	250.63			0.00
73) Benzo(a)pyrene-d12	38.148	264	590823	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.578	136	390974	195.41			0.01
21) Acenaphthene-d10	19.415	164	268388	230.76			0.00
32) Phenanthrene-d10	24.522	188	518548	249.35			0.01
66) Chrysene-d12	33.603	240	694837	244.05			0.00
88) Perylene-d12	38.441	264	655254	248.70			-0.02
90) 5(b)H-Cholane	33.990	217	175511	274.61			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.943	138	73402m	187.83			
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	13.642	128	463119	194.26			100
9) 2-Methylnaphthalene	15.889	142	331602	213.14			99
10) 1-Methylnaphthalene	16.214	142	307384	214.08			97
11) 2,6-Dimethylnaphthalene	17.975	156	325943	235.17			98
12) 1,6,7-Trimethylnaphtha...	20.822	170	325925m	239.53			
13) C2-Naphthalenes	0.000		0	N.D.	d		
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.810	134	401076	198.82			100
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	17.444	154	460956	221.04			97
23) Acenaphthylene	18.926	152	556884	240.26			97
24) Acenaphthene	19.527	154	318664	234.81			99
25) Dibenzofuran	20.111	168	547806	241.20			100
26) Fluorene	21.283	166	413926	249.27			94
27) 1-Methylfluorene	23.278	180	255576	257.92			87
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	25.347	167	582121	262.07			100
34) Dibenzothiophene	24.173	184	665216	249.03		#	92
35) 4-Methyldibenzothiophene	25.669	198	466918	253.66			100
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	24.592	178	648595	251.33			98
42) Anthracene	24.774	178	637659	258.45			95
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123M.D
Acq On : 3 Oct 2014 10:43 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:49:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

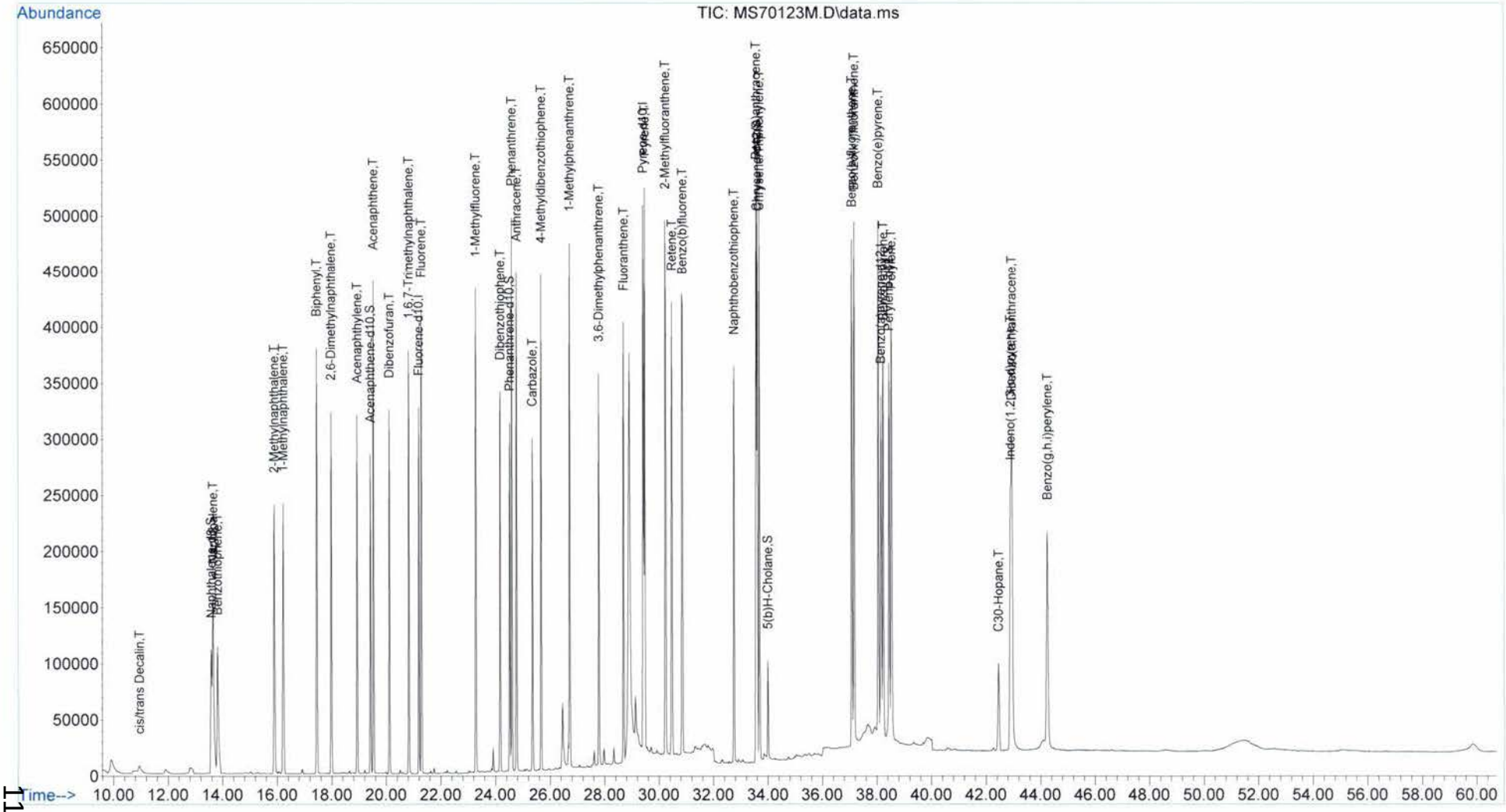
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.717	192	532609	256.96			99
48) 3,6-Dimethylphenanthrene	27.779	206	476286	259.99			83
49) Retene	30.470	234	253841	251.07		#	26
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
53) Naphthobenzothiophene	32.753	234	794836	257.63			100
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	28.696	202	815650	262.74		#	100
59) Pyrene	29.471	202	867343	256.67		#	100
60) 2-Methylfluoranthene	30.225	216	557152	258.86		#	100
61) Benzo(b)fluorene	30.857	216	522798	257.45			96
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.565	228	817861	252.70			98
68) Chrysene/Triphenylene	33.681	228	798012	246.93			98
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	42.449	191	278516	228.94			100
77) Benzo(b)fluoranthene	37.083	252	797764	290.52			100
78) Benzo(k,j)fluoranthene	37.169	252	820791	302.41			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.045	252	902653	267.38			99
81) Benzo(a)pyrene	38.234	252	752884	258.18			100
82) Indeno(1,2,3-c,d)pyrene	42.888	276	776400	198.92			100
83) Dibenzo(a,h)anthracene	42.940	278	644230	209.00			90
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	44.244	276	620460	179.69			95
89) Perylene	38.526	252	839839	251.69		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123M.D
Acq On : 3 Oct 2014 10:43 am
Operator : ECM(YMIAO)
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 05 10:49:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name MS70123H.D
Data File Path C:\GCMS7\MS70123\
Operator ECM(YMIAO)
Date Acquired 10/2/2014 18:31
Acq. Method File PAH-2014.M
Sample Name PAH-WKSUIS-250-007
Misc Info 0
Instrument Name GCMS 7
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

MS70123H.D
PAH-WKSUIS-250-007
10/2/2014 18:31
PAH-2014.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	13.56	443997	237.60	94.99
21)	Acenaphthene-d10	19.42	256916	236.52	94.55
32)	Phenanthrene-d10	24.51	458147	249.53	99.73
66)	Chrysene-d12	33.58	585922	233.09	93.22
88)	Perylene-d12	38.44	661897	252.80	101.11
90)	5(b)H-Cholane	33.99	162816	256.35	102.54
	Internal Standards				
1)	Fluorene-d10	21.19	279994	251.05	
31)	Pyrene-d10	29.41	581395	250.63	
73)	Benzo(a)pyrene-d12	38.13	587127	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : MS70123H.D
Acq On : 2 Oct 2014 6:31 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 05 10:00:52 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.189	176	279994	251.05		0.00
31) Pyrene-d10	29.410	212	581395	250.63		0.00
73) Benzo(a)pyrene-d12	38.131	264	587127	250.32		-0.02
System Monitoring Compounds						
2) Naphthalene-d8	13.565	136	443997	237.60		0.00
21) Acenaphthene-d10	19.415	164	256916	236.52		0.00
32) Phenanthrene-d10	24.508	188	458147	249.53		0.00
66) Chrysene-d12	33.584	240	585922	233.09		-0.02
88) Perylene-d12	38.441	264	661897	252.80		-0.02
90) 5(b)H-Cholane	33.990	217	162816	256.35		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	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : MS70123H.D
Acq On : 2 Oct 2014 6:31 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 05 10:00:52 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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\MS70123\
Data File : MS70123H.D
Acq On : 2 Oct 2014 6:31 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 05 10:00:52 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

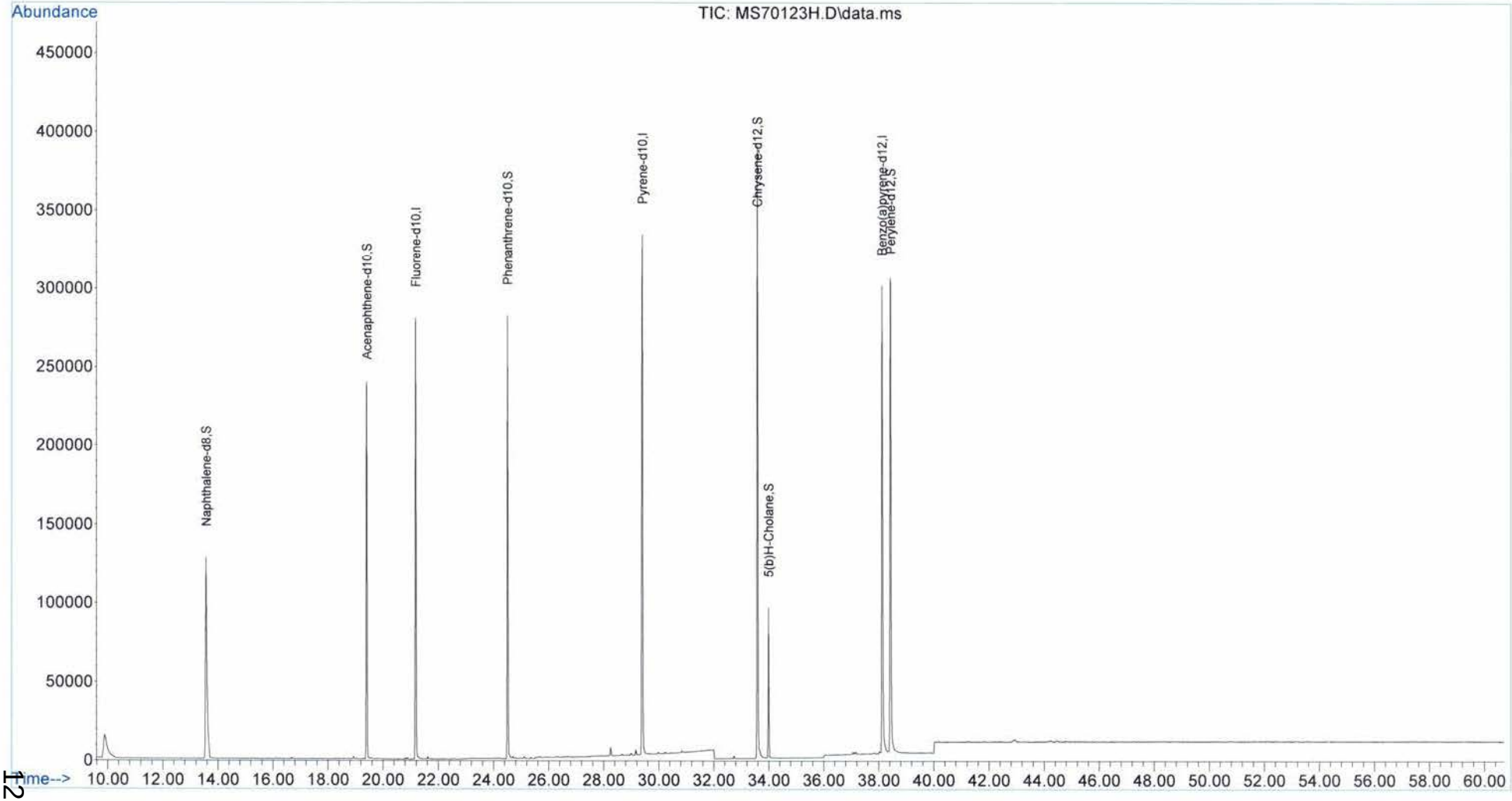
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : MS70123H.D
Acq On : 2 Oct 2014 6:31 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 05 10:00:52 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



122

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

Data File Name	MS70123K.D
Data File Path	C:\msdchem\2\data\MS70123\
Operator	ECM(YMIAO)
Date Acquired	10/2/2014 22:01
Acq. Method File	PAH-2014.M
Sample Name	PAH-WKSRM2779-4.0-005
Misc Info	0
Instrument Name	GCMS 7
Vial Number	11
Sample Multiplier	0.2405
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

MS70123K.D
AH-WKSRM2779-4.0-005
10/2/2014 22:01
PAH-2014.M
4.158004158

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.94	1116430	713.8978	756.2449
4)	C1-Decalins	12.09	1761070	1126.1028	1192.9011
5)	C2-Decalins	14.47	1664110	1064.1019	1127.2224
6)	C3-Decalins	16.42	1310000	837.6711	887.3602
7)	C4-Decalins	18.42	856430	547.6401	580.1252
8)	Naphthalene	13.63	6786830	711.3774	753.5749
9)+10)	C1-Naphthalenes	16.04	13823520	1448.9444	1534.8931
13)	C2-Naphthalenes	18.24	17745800	1860.0703	1970.4062
14)	C3-Naphthalenes	20.24	13393000	1403.8153	1487.0871
15)	C4-Naphthalenes	22.57	7160280	750.5211	795.0407
16)	Benzothiophene	13.85	69011	8.5487	9.0558
17)	C1-Benzothiophenes	16.58	269177	33.3439	35.3218
18)	C2-Benzothiophenes	18.11	177168	21.9465	23.2483
19)	C3-Benzothiophenes	20.06	288386	35.7234	37.8424
20)	C4-Benzothiophenes	21.84	211125	26.1529	27.7043
22)	Biphenyl	17.44	1386990	166.2007	176.0594
23)	Acenaphthylene	18.93	84290	9.0874	9.6264
24)	Acenaphthene	19.53	44812	8.2511	8.7405
25)	Dibenzofuran	20.11	294672	32.4208	34.3440
26)	Fluorene	21.28	806241	121.3284	128.5254
28)	C1-Fluorenes	23.28	1965620	295.8006	313.3469
29)	C2-Fluorenes	25.11	2929120	440.7932	466.9403
30)	C3-Fluorenes	26.65	1717710	258.4918	273.8251
33)	Carbazole	25.35	38230	4.3820	4.6420
42)	Anthracene	24.76	34337	3.5434	3.7536
41)	Phenanthrene	24.59	2611050	257.6068	272.8875
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.48	6283671	619.9484	656.7226
50)	C2-Phenanthrenes/Anthracenes	28.15	7562960	746.1633	790.4243
51)	C3-Phenanthrenes/Anthracenes	29.70	4789430	472.5248	500.5541
52)	C4-Phenanthrenes/Anthracenes	31.55	2307690	227.6770	241.1824
34)	Dibenzothiophene	24.16	505695	48.1988	51.0579
35)+36)+37)	C1-Dibenzothiophenes	25.98	1372090	130.7768	138.5342
38)	C2-Dibenzothiophenes	27.07	1960400	186.8497	197.9333
39)	C3-Dibenzothiophenes	29.25	1138000	108.4655	114.8995
40)	C4-Dibenzothiophenes	30.00	755338	71.9930	76.2634
58)	Fluoranthene	28.70	56530	4.6363	4.9113
59)	Pyrene	29.47	151045	11.3803	12.0554
62)	C1-Fluoranthenes/Pyrenes	30.61	928268	76.1315	80.6475
63)	C2-Fluoranthenes/Pyrenes	32.10	1552730	127.3464	134.9004
64)	C3-Fluoranthenes/Pyrenes	33.80	1931390	158.4020	167.7981
65)	C4-Fluoranthenes/Pyrenes	34.92	1183390	97.0547	102.8118
53)	Naphthobenzothiophene	32.73	326162	26.9165	28.5132
54)	C1-Naphthobenzothiophenes	33.89	748569	61.7756	65.4400
55)	C2-Naphthobenzothiophenes	35.57	1043630	86.1257	91.2345
56)	C3-Naphthobenzothiophenes	36.96	752178	62.0735	65.7556
57)	C4-Naphthobenzothiophenes	37.93	297619	24.5611	26.0180
67)	Benz(a)anthracene	33.55	73570	5.7876	6.1309
68)	Chrysene/Triphenylene	33.64	620954	48.9201	51.8220
69)	C1-Chrysenes	34.90	1500010	118.1742	125.1841
70)	C2-Chrysenes	36.09	1867910	147.1579	155.8870
71)	C3-Chrysenes	37.75	1302050	102.5783	108.6631
72)	C4-Chrysenes	39.14	1092900	86.1014	91.2088
77)	Benzo(b)fluoranthene	37.07	75852	5.5091	5.8359
78)	Benzo(k,j)fluoranthene	37.15	12114	0.8901	0.9429
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.05	170864	10.0940	10.6928
81)	Benzo(a)pyrene	38.22	22554	1.5425	1.6340
89)	Perylene	38.53	8959	0.5355	0.5672
82)	Indeno(1,2,3-c,d)pyrene	42.90	11607	0.5931	0.6283
83)	Dibenzo(a,h)anthracene	42.93	7386	0.4779	0.5062
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	44.23	30408	1.7563	1.8605

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.88	8299810	1333.1180	1412.1961
10)	1-Methylnaphthalene	16.21	5523710	961.3122	1018.3354
11)	2,6-Dimethylnaphthalene	17.98	2800840	504.9851	534.9398
12)	1,6,7-Trimethylnaphthalene	20.82	1497840	275.0791	291.3963
27)	1-Methylfluorene	23.28	1011790	255.1489	270.2838
35)	4-Methyldibenzothiophene	25.67	768601	106.3111	112.6173
36)	2/3-Methyldibenzothiophene	25.96	358854	49.6358	52.5801
37)	1-Methyldibenzothiophene	26.30	244635	33.8374	35.8446
43)	3-Methylphenanthrene	26.24	1432530	175.9630	186.4008
44)	2-Methylphenanthrene	26.34	1614320	198.2930	210.0553
45)	2-Methylanthracene	26.49	139771	17.1686	18.1870
46)	4/9-Methylphenanthrene	26.62	1918800	235.6931	249.6740
47)	1-Methylphenanthrene	26.70	1178250	144.7281	153.3131
48)	3,6-Dimethylphenanthrene	27.78	334545	46.4944	49.2524
49)	Retene	30.45	22831	5.7493	6.0903
60)	2-Methylfluoranthene	30.23	58142	6.8778	7.2857
61)	Benzo(b)fluorene	30.84	133934	16.7924	17.7885
74)	C29-Hopane	40.46	130979	21.4722	22.7459
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.74	296118	48.5444	51.4240
91)	C20-TAS	33.14	106006	33.0796	35.0418
92)	C21-TAS	34.22	157851	49.2578	52.1796
93)	C26(20S)-TAS	38.29	91503	28.5538	30.2476
94)	C26(20R)/C27(20S)-TAS	39.18	302954	94.5377	100.1455
95)	C28(20S)-TAS	39.95	212578	66.3357	70.2706
96)	C27(20R)-TAS	40.40	180479	56.3191	59.6598
97)	C28(20R)-TAS	41.51	149539	46.6642	49.4323
	Surrogate Standards				
2)	Naphthalene-d8	13.56	410971	51.33	85.32
21)	Acenaphthene-d10	19.42	269961	58.00	96.41
32)	Phenanthrene-d10	24.51	463963	56.80	94.40
66)	Chrysene-d12	33.60	648376	57.98	96.42
88)	Perylene-d12	38.44	773616	58.56	97.38
90)	5(b)H-Cholane	33.99	211300	65.94	109.67
	Internal Standards				
1)	Fluorene-d10	21.19	288534	60.38	
31)	Pyrene-d10	29.41	622033	60.28	
73)	Benzo(a)pyrene-d12	38.15	712463	60.20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : MS70123K.D
Acq On : 2 Oct 2014 10:01 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.2405

Quant Time: Oct 05 10:38:27 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	288534	251.05			0.00
31) Pyrene-d10	29.410	212	622033m	250.63			0.00
73) Benzo(a)pyrene-d12	38.148	264	712463	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	410971	51.33			0.00
21) Acenaphthene-d10	19.415	164	269961m	58.00			0.00
32) Phenanthrene-d10	24.508	188	463963	56.80			0.00
66) Chrysene-d12	33.603	240	648376	57.98			0.00
88) Perylene-d12	38.440	264	773616	58.56			-0.02
90) 5(b)H-Cholane	33.990	217	211300	65.94			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.943	138	1116433m	713.90			
4) C1-Decalins	12.093	152	1761065m	1126.10			
5) C2-Decalins	14.468	166	1664105m	1064.10			
6) C3-Decalins	16.423	180	1309998m	837.67			
7) C4-Decalins	18.422	194	856430m	547.64			
8) Naphthalene	13.629	128	6786828	711.38			98
9) 2-Methylnaphthalene	15.876	142	8299810	1333.12			97
10) 1-Methylnaphthalene	16.214	142	5523714	961.31			99
11) 2,6-Dimethylnaphthalene	17.975	156	2800840m	504.99			
12) 1,6,7-Trimethylnaphtha...	20.821	170	1497841m	275.08			
13) C2-Naphthalenes	18.241	156	17745827m	1860.07			
14) C3-Naphthalenes	20.241	170	13392959m	1403.81			
15) C4-Naphthalenes	22.574	184	7160279m	750.52			
16) Benzothiophene	13.849	134	69011	8.55			100
17) C1-Benzothiophenes	16.577	148	269177m	33.34			
18) C2-Benzothiophenes	18.115	162	177168m	21.95			
19) C3-Benzothiophenes	20.063	176	288386m	35.72			
20) C4-Benzothiophenes	21.840	190	211125m	26.15			
22) Biphenyl	17.444	154	1386992	166.20			95
23) Acenaphthylene	18.926	152	84290m	9.09			
24) Acenaphthene	19.527	154	44812m	8.25			
25) Dibenzofuran	20.111	168	294672	32.42			100
26) Fluorene	21.283	166	806241	121.33			98
27) 1-Methylfluorene	23.278	180	1011789	255.15			90
28) C1-Fluorenes	23.278	180	1965619m	295.80			
29) C2-Fluorenes	25.109	194	2929119m	440.79			
30) C3-Fluorenes	26.647	208	1717712m	258.49			
33) Carbazole	25.347	167	38230	4.38			100
34) Dibenzothiophene	24.159	184	505695	48.20		#	92
35) 4-Methyldibenzothiophene	25.668	198	768601	106.31			100
36) 2/3-Methyldibenzothiop...	25.962	198	358854	49.64			100
37) 1-Methyldibenzothiophene	26.298	198	244635	33.84			100
38) C2-Dibenzothiophenes	27.066	212	1960398m	186.85			
39) C3-Dibenzothiophenes	29.247	226	1138003m	108.47			
40) C4-Dibenzothiophenes	30.001	240	755338m	71.99			
41) Phenanthrene	24.592	178	2611053	257.61			99
42) Anthracene	24.760	178	34337m	3.54			
43) 3-Methylphenanthrene	26.242	192	1432533m	175.96			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : MS70123K.D
Acq On : 2 Oct 2014 10:01 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.2405

Quant Time: Oct 05 10:38:27 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) 2-Methylphenanthrene	26.339	192	1614323	198.29			94
45) 2-Methylanthracene	26.493	192	139771m	17.17			
46) 4/9-Methylphenanthrene	26.619	192	1918800m	235.69			
47) 1-Methylphenanthrene	26.703	192	1178246	144.73			95
48) 3,6-Dimethylphenanthrene	27.779	206	334545m	46.49			
49) Retene	30.449	234	22831m	5.75			
50) C2-Phenanthrenes/Anthr...	28.146	206	7562958m	746.16			
51) C3-Phenanthrenes/Anthr...	29.695	220	4789426m	472.53			
52) C4-Phenanthrenes/Anthr...	31.550	234	2307688m	227.68			
53) Naphthobenzothiophene	32.734	234	326162m	26.92			
54) C1-Naphthobenzothiophenes	33.893	248	748569m	61.78			
55) C2-Naphthobenzothiophenes	35.573	262	1043632m	86.13			
56) C3-Naphthobenzothiophenes	36.963	276	752178m	62.07			
57) C4-Naphthobenzothiophenes	37.925	290	297619m	24.56			
58) Fluoranthene	28.696	202	56530m	4.64			
59) Pyrene	29.471	202	151045	11.38		#	100
60) 2-Methylfluoranthene	30.225	216	58142	6.88		#	100
61) Benzo(b)fluorene	30.837	216	133934	16.79			78
62) C1-Fluoranthenes/Pyrenes	30.613	216	928268m	76.13			
63) C2-Fluoranthenes/Pyrenes	32.096	230	1552732m	127.35			
64) C3-Fluoranthenes/Pyrenes	33.796	244	1931392m	158.40			
65) C4-Fluoranthenes/Pyrenes	34.917	258	1183385m	97.05			
67) Benz(a)anthracene	33.545	228	73570	5.79			89
68) Chrysene/Triphenylene	33.642	228	620954	48.92			98
69) C1-Chrysenes	34.897	242	1500011m	118.17			
70) C2-Chrysenes	36.086	256	1867905m	147.16			
71) C3-Chrysenes	37.753	270	1302049m	102.58			
72) C4-Chrysenes	39.145	284	1092903m	86.10			
74) C29-Hopane	40.460	191	130979m	21.47			
75) 18a-Oleanane	0.000		0	N.D.	d		
76) C30-Hopane	41.739	191	296118m	48.54			
77) Benzo(b)fluoranthene	37.066	252	75852m	5.51			
78) Benzo(k,j)fluoranthene	37.152	252	12114m	0.89			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.045	252	170864	10.09			100
81) Benzo(a)pyrene	38.217	252	22554m	1.54			
82) Indeno(1,2,3-c,d)pyrene	42.901	276	11607	0.59			91
83) Dibenzo(a,h)anthracene	42.927	278	7386m	0.48			
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	44.231	276	30408	1.76			87
89) Perylene	38.526	252	8959	0.54		#	100
91) C20-TAS	33.140	231	106006m	33.08			
92) C21-TAS	34.221	231	157851m	49.26			
93) C26(20S)-TAS	38.286	231	91503m	28.55			
94) C26(20R)/C27(20S)-TAS	39.179	231	302954	94.54			100
95) C28(20S)-TAS	39.952	231	212578m	66.34			
96) C27(20R)-TAS	40.396	231	180479	56.32			100
97) C28(20R)-TAS	41.506	231	149539m	46.66			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : MS70123K.D
Acq On : 2 Oct 2014 10:01 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.2405

Quant Time: Oct 05 10:38:27 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

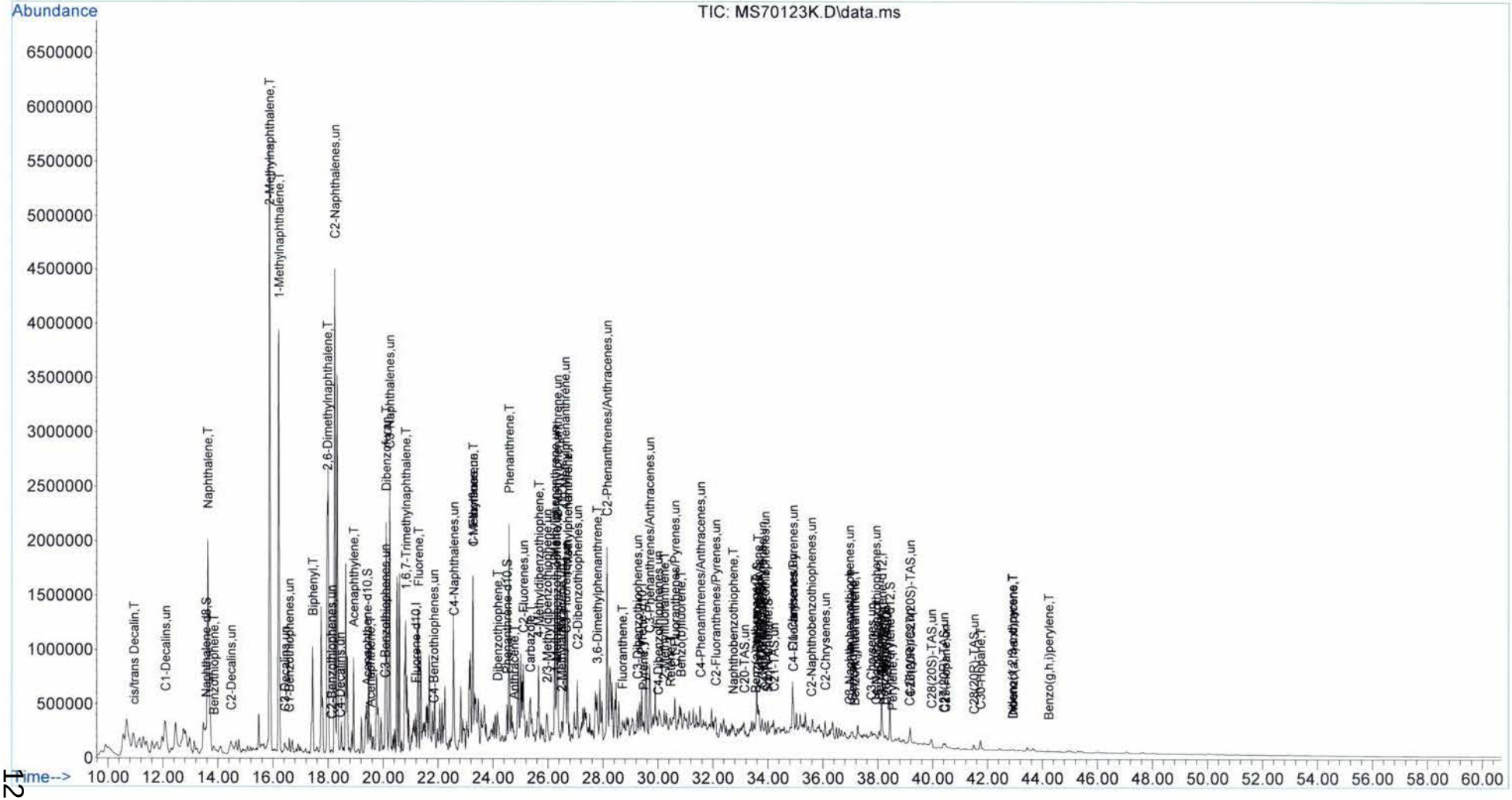
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : MS70123K.D
Acq On : 2 Oct 2014 10:01 pm
Operator : ECM(YMIAO)
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.2405

Quant Time: Oct 05 10:38:27 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name	ENV3341A.D
Data File Path	C:\msdchem\2\data\MS70123\
Operator	ECM(YMIAO)
Date Acquired	10/2/2014 23:10
Acq. Method File	PAH-2014.M
Sample Name	Method Blank
Misc Info	0
Instrument Name	GCMS 7
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

ENV3341A.D
Method Blank
10/2/2014 23:10
PAH-2014.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	13.56	385962	205.39	82.12
21)	Acenaphthene-d10	19.42	234810	214.97	85.93
32)	Phenanthrene-d10	24.51	433118	229.45	91.71
66)	Chrysene-d12	33.58	606862	234.83	93.92
88)	Perylene-d12	38.42	697769	241.08	96.42
90)	5(b)H-Cholane	33.99	169935	242.04	96.82
	Internal Standards				
1)	Fluorene-d10	21.19	281559	251.05	
31)	Pyrene-d10	29.41	597711	250.63	
73)	Benzo(a)pyrene-d12	38.13	649038	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341A.D
Acq On : 2 Oct 2014 11:10 pm
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 05 10:54:00 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.189	176	281559	251.05		0.00
31) Pyrene-d10	29.410	212	597711	250.63		0.00
73) Benzo(a)pyrene-d12	38.131	264	649038	250.32		-0.02
System Monitoring Compounds						
2) Naphthalene-d8	13.565	136	385962	205.39		0.00
21) Acenaphthene-d10	19.415	164	234810	214.97		0.00
32) Phenanthrene-d10	24.508	188	433118	229.45		0.00
66) Chrysene-d12	33.584	240	606862	234.83		-0.02
88) Perylene-d12	38.423	264	697769	241.08		-0.03
90) 5(b)H-Cholane	33.989	217	169935	242.04		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\MS70123\
Data File : ENV3341A.D
Acq On : 2 Oct 2014 11:10 pm
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 05 10:54:00 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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\MS70123\
Data File : ENV3341A.D
Acq On : 2 Oct 2014 11:10 pm
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 05 10:54:00 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

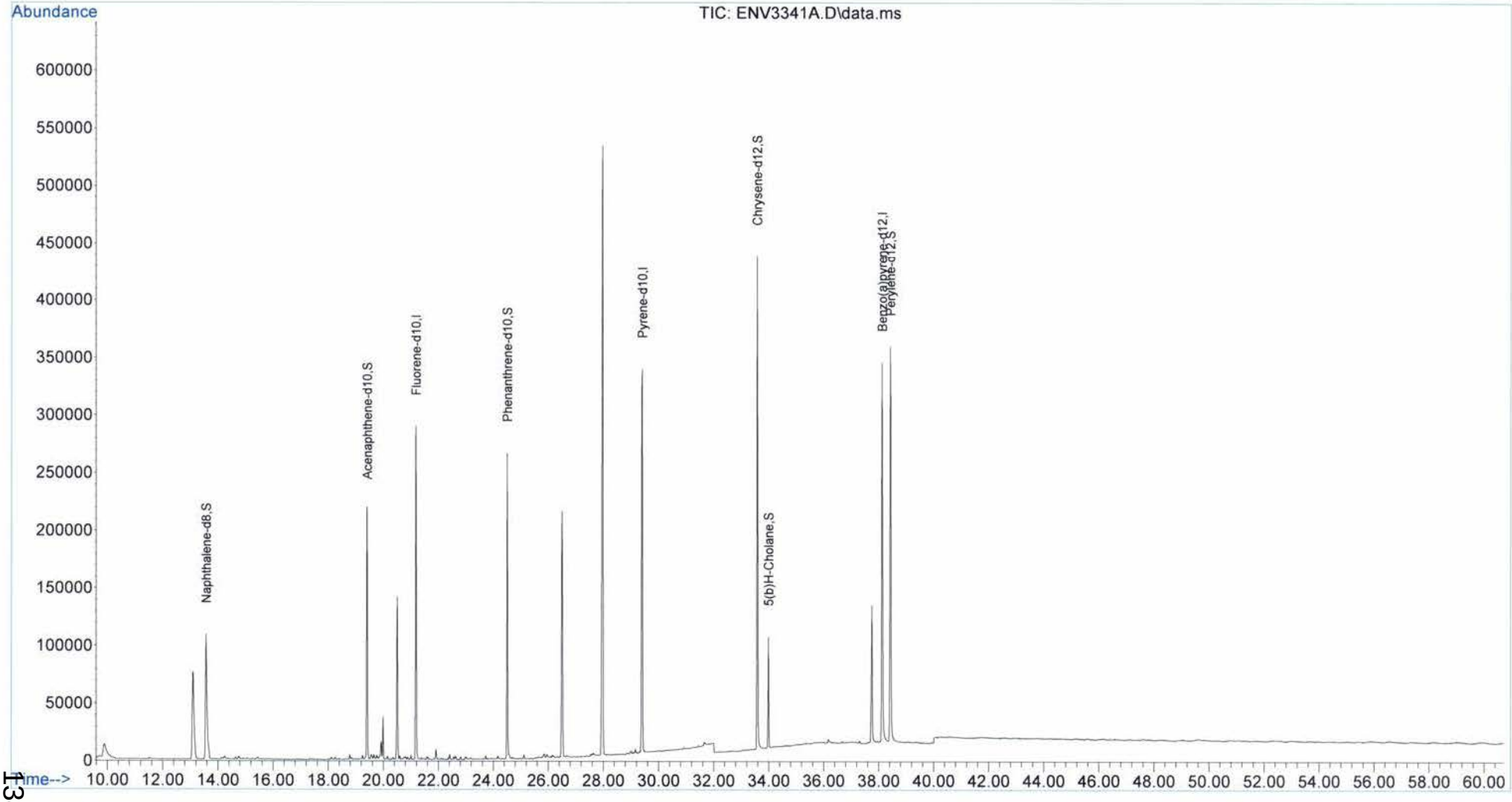
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341A.D
Acq On : 2 Oct 2014 11:10 pm
Operator : ECM(YMIAO)
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 05 10:54:00 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name	ENV3341B.D
Data File Path	C:\msdchem\2\data\MS70123\
Operator	ECM(YMIAO)
Date Acquired	10/3/2014 0:20
Acq. Method File	PAH-2014.M
Sample Name	Blank Spike
Misc Info	0
Instrument Name	GCMS 7
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

ENV3341B.D
Blank Spike
10/3/2014 0:20
PAH-2014.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.93	26845	77.8414	80.6771
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	13.63	170800	81.1831	84.1405
9)+10)	C1-Naphthalenes	16.04	219991	104.5641	108.3733
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	13.80	143894	80.8289	83.7734
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	17.44	153080	83.1806	86.2108
23)	Acenaphthylene	18.91	172482	84.3239	87.3957
24)	Acenaphthene	19.51	102893	85.9109	89.0406
25)	Dibenzofuran	20.10	174750	87.1861	90.3622
26)	Fluorene	21.28	123853	84.5180	87.5969
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	25.33	162848	86.3714	89.5178
42)	Anthracene	24.76	185047	88.3609	91.5798
41)	Phenanthrene	24.58	198475	90.6078	93.9086
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.34	162305	74.0955	76.7947
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	24.16	245789	108.4000	112.3489
35)+36)+37)	C1-Dibenzothiophenes	8.55	146134	64.4493	66.7971
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	28.68	248114	94.1584	97.5885
59)	Pyrene	29.45	265137	92.4349	95.8022
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	32.73	247576	94.5391	97.9831
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	33.55	251460	91.5348	94.8693
68)	Chrysene/Triphenylene	33.68	250673	91.3805	94.7094
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	37.07	263770	91.7671	95.1101
78)	Benzo(k,j)fluoranthene	37.15	265162	93.3310	96.7310
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.03	339646	96.1141	99.6155
81)	Benzo(a)pyrene	38.22	279040	91.4148	94.7450
89)	Perylene	38.53	322046	92.2022	95.5610
82)	Indeno(1,2,3-c,d)pyrene	42.86	371024	90.8143	94.1226
83)	Dibenzo(a,h)anthracene	42.93	294031	91.1267	94.4464
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	44.22	317372	87.8083	91.0071

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.88	114139	83.1340	86.1625
10)	1-Methylnaphthalene	16.20	105852	83.5365	86.5797
11)	2,6-Dimethylnaphthalene	17.96	102847	84.0866	87.1498
12)	1,6,7-Trimethylnaphthalene	20.82	104562	87.0781	90.2503
27)	1-Methylfluorene	23.26	77715	88.8693	92.1067
35)	4-Methyldibenzothiophene	25.65	146134	93.5290	96.9362
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	26.70	162305	92.2500	95.6106
48)	3,6-Dimethylphenanthrene	27.80	145694	93.6926	97.1057
49)	Retene	30.45	76768	89.4515	92.7101
60)	2-Methylfluoranthene	30.23	169964	93.0320	96.4211
61)	Benzo(b)fluorene	30.84	166615	96.6613	100.1826
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.45	114900	90.2282	93.5151
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	13.56	381581	216.10	86.40
21)	Acenaphthene-d10	19.40	234884	228.85	91.48
32)	Phenanthrene-d10	24.51	426125	241.40	96.49
66)	Chrysene-d12	33.58	581513	240.62	96.23
88)	Perylene-d12	38.42	685268	248.47	99.38
90)	5(b)H-Cholane	33.99	155917	233.06	93.22
	Internal Standards				
1)	Fluorene-d10	21.19	264568	251.05	
31)	Pyrene-d10	29.41	558960	250.63	
73)	Benzo(a)pyrene-d12	38.13	618444	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341B.D
Acq On : 3 Oct 2014 12:20 am
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 05 11:15:07 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.189	176	264568	251.05		0.00
31) Pyrene-d10	29.410	212	558960	250.63		0.00
73) Benzo(a)pyrene-d12	38.131	264	618444	250.32		-0.02
System Monitoring Compounds						
2) Naphthalene-d8	13.565	136	381581	216.10		0.00
21) Acenaphthene-d10	19.401	164	234884	228.85		-0.01
32) Phenanthrene-d10	24.508	188	426125	241.40		0.00
66) Chrysene-d12	33.584	240	581513	240.62		-0.02
88) Perylene-d12	38.423	264	685268	248.47		-0.03
90) 5(b)H-Cholane	33.990	217	155917	233.06		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.930	138	26845m	77.84		
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	13.629	128	170800	81.18		99
9) 2-Methylnaphthalene	15.876	142	114139	83.13		98
10) 1-Methylnaphthalene	16.200	142	105852	83.54		98
11) 2,6-Dimethylnaphthalene	17.961	156	102847	84.09		90
12) 1,6,7-Trimethylnaphtha...	20.821	170	104562	87.08		95
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	13.797	134	143894	80.83		100
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	17.444	154	153080m	83.18		
23) Acenaphthylene	18.912	152	172482	84.32		97
24) Acenaphthene	19.513	154	102893	85.91		98
25) Dibenzofuran	20.099	168	174750	87.19		100
26) Fluorene	21.283	166	123853	84.52		99
27) 1-Methylfluorene	23.264	180	77715m	88.87		
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	25.333	167	162848	86.37		100
34) Dibenzothiophene	24.159	184	245789m	108.40		
35) 4-Methyldibenzothiophene	25.654	198	146134	93.53		100
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	24.578	178	198475	90.61		98
42) Anthracene	24.760	178	185047	88.36		95
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341B.D
Acq On : 3 Oct 2014 12:20 am
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 05 11:15:07 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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	26.703	192	162305	92.25			100
48) 3,6-Dimethylphenanthrene	27.799	206	145694	93.69			91
49) Retene	30.449	234	76768	89.45		#	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	32.734	234	247576	94.54			100
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	28.676	202	248114	94.16		#	100
59) Pyrene	29.450	202	265137	92.43		#	100
60) 2-Methylfluoranthene	30.225	216	169964	93.03		#	100
61) Benzo(b)fluorene	30.837	216	166615	96.66			99
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	33.545	228	251460	91.53			100
68) Chrysene/Triphenylene	33.680	228	250673	91.38			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	42.449	191	114900	90.23			100
77) Benzo(b)fluoranthene	37.066	252	263770	91.77			99
78) Benzo(k,j)fluoranthene	37.152	252	265162	93.33			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	339646	96.11			99
81) Benzo(a)pyrene	38.217	252	279040	91.41			100
82) Indeno(1,2,3-c,d)pyrene	42.862	276	371024	90.81			99
83) Dibenzo(a,h)anthracene	42.927	278	294031	91.13			90
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	44.219	276	317372	87.81			96
89) Perylene	38.526	252	322046	92.20		#	100
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\MS70123\
Data File : ENV3341B.D
Acq On : 3 Oct 2014 12:20 am
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 05 11:15:07 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

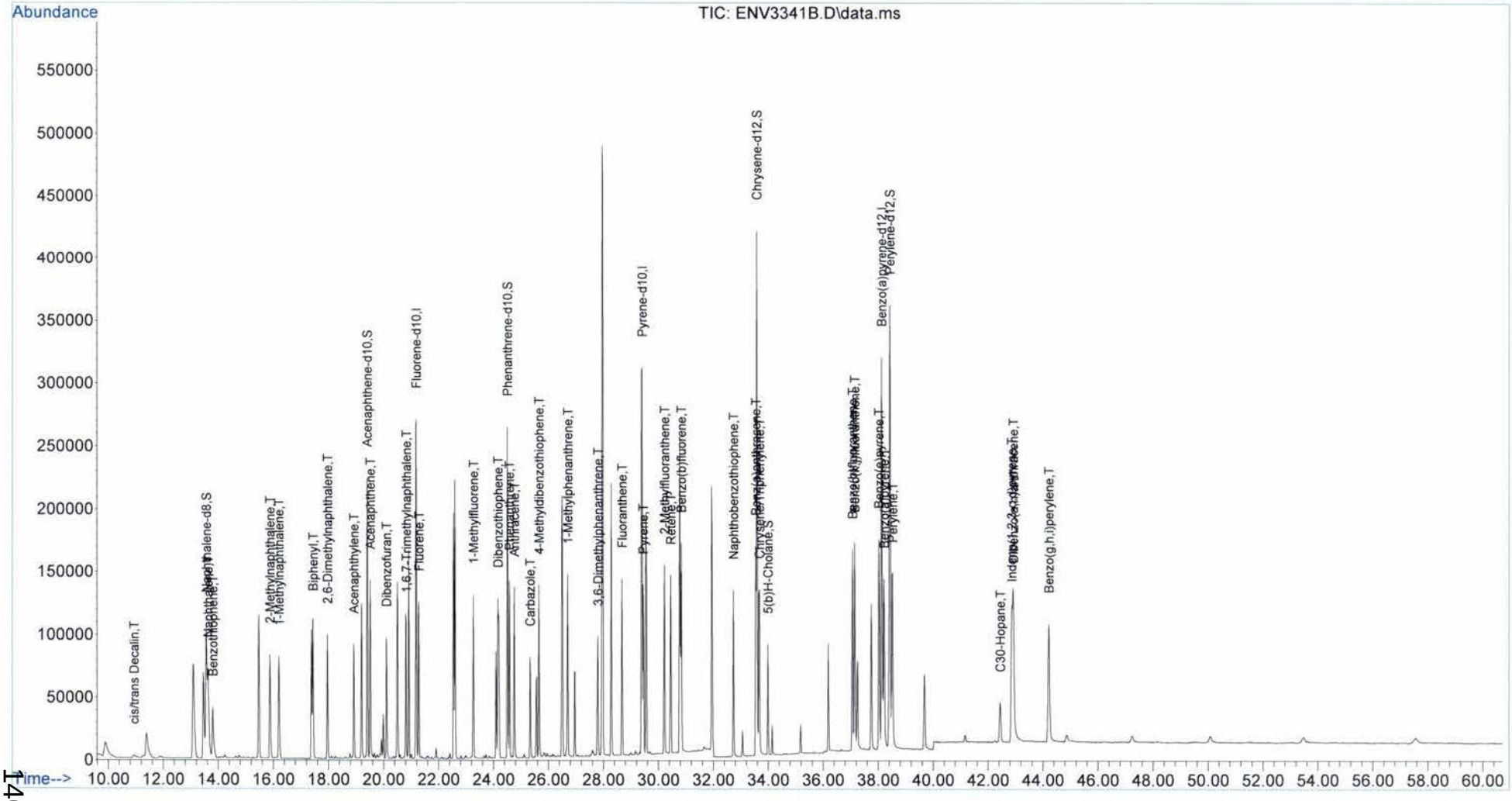
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341B.D
Acq On : 3 Oct 2014 12:20 am
Operator : ECM(YMIAO)
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 05 11:15:07 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name ENV3341C.D
Data File Path C:\msdchem\2\data\MS70123\
Operator ECM(YMIAO)
Date Acquired 10/3/2014 1:29
Acq. Method File PAH-2014.M
Sample Name Blank Spike Dupl.
Misc Info 0
Instrument Name GCMS 7
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

ENV3341C.D
Blank Spike Dupl.
10/3/2014 1:29
PAH-2014.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.93	28488	75.1646	80.7279
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	13.63	177466	76.7533	82.4342
9)+10)	C1-Naphthalenes	16.04	231841	100.2703	107.6918
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	13.80	151379	77.3738	83.1006
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	17.44	162624	80.4067	86.3580
23)	Acenaphthylene	18.91	182339	81.1130	87.1166
24)	Acenaphthene	19.51	107992	82.0461	88.1188
25)	Dibenzofuran	20.11	183928	83.4991	89.6793
26)	Fluorene	21.28	131553	81.6860	87.7320
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	25.33	175747	84.9557	91.2437
42)	Anthracene	24.76	195770	85.2003	91.5064
41)	Phenanthrene	24.59	209535	87.1833	93.6362
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.34	171419	71.3240	76.6031
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	24.16	260465	104.6960	112.4451
35)+36)+37)	C1-Dibenzothiophenes	8.55	156037	62.7203	67.3626
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	28.68	265821	91.9421	98.7472
59)	Pyrene	29.45	282609	89.7984	96.4449
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	32.73	265259	92.3188	99.1518
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	33.55	281113	93.2642	100.1672
68)	Chrysene/Triphenylene	33.68	275732	91.6116	98.3923
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	37.07	278197	88.3551	94.8947
78)	Benzo(k,j)fluoranthene	37.15	278928	89.6239	96.2574
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.03	359731	92.9300	99.8082
81)	Benzo(a)pyrene	38.22	294368	88.0355	94.5515
89)	Perylene	38.53	341446	89.2406	95.8458
82)	Indeno(1,2,3-c,d)pyrene	42.88	395448	88.3606	94.9006
83)	Dibenzo(a,h)anthracene	42.93	313164	88.6017	95.1596
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	44.22	335263	84.6779	90.9454

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.88	120850	80.0932	86.0213
10)	1-Methylnaphthalene	16.20	110991	79.7020	85.6012
11)	2,6-Dimethylnaphthalene	17.96	108479	80.7022	86.6754
12)	1,6,7-Trimethylnaphthalene	20.82	109548	83.0125	89.1567
27)	1-Methylfluorene	23.26	81843	85.1594	91.4625
35)	4-Methyldibenzothiophene	25.65	156037	91.0206	97.7575
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	26.70	171419	88.7995	95.3720
48)	3,6-Dimethylphenanthrene	27.80	154200	90.3785	97.0679
49)	Retene	30.45	80764	85.7713	92.1197
60)	2-Methylfluoranthene	30.23	179331	89.4639	96.0856
61)	Benzo(b)fluorene	30.84	177209	93.7004	100.6357
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.45	123882	88.8071	95.3802
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	13.56	399301	205.77	82.27
21)	Acenaphthene-d10	19.41	246302	218.36	87.29
32)	Phenanthrene-d10	24.51	451179	232.95	93.11
66)	Chrysene-d12	33.58	626856	236.41	94.55
88)	Perylene-d12	38.42	726273	240.40	96.15
90)	5(b)H-Cholane	33.99	172818	235.82	94.33
	Internal Standards				
1)	Fluorene-d10	21.19	290759	251.05	
31)	Pyrene-d10	29.41	613287	250.63	
73)	Benzo(a)pyrene-d12	38.13	677459	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341C.D
Acq On : 3 Oct 2014 1:29 am
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 05 11:13:37 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	290759	251.05			0.00
31) Pyrene-d10	29.410	212	613287	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	677459	250.32			-0.02
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	399301	205.77			0.00
21) Acenaphthene-d10	19.415	164	246302	218.35			0.00
32) Phenanthrene-d10	24.508	188	451179	232.95			0.00
66) Chrysene-d12	33.584	240	626856	236.41			-0.02
88) Perylene-d12	38.423	264	726273	240.40			-0.03
90) 5(b)H-Cholane	33.989	217	172818	235.82			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.930	138	28488m	75.16			
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	13.629	128	177466	76.75			99
9) 2-Methylnaphthalene	15.876	142	120850	80.09			99
10) 1-Methylnaphthalene	16.200	142	110991	79.70			96
11) 2,6-Dimethylnaphthalene	17.961	156	108479	80.70			86
12) 1,6,7-Trimethylnaphtha...	20.821	170	109548	83.01			99
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	13.797	134	151379	77.37			100
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	17.444	154	162624m	80.41			
23) Acenaphthylene	18.912	152	182339	81.11			96
24) Acenaphthene	19.513	154	107992	82.05			97
25) Dibenzofuran	20.111	168	183928	83.50			100
26) Fluorene	21.283	166	131553	81.69			100
27) 1-Methylfluorene	23.264	180	81843	85.16		#	60
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	25.333	167	175747	84.96			100
34) Dibenzothiophene	24.159	184	260465m	104.70			
35) 4-Methyldibenzothiophene	25.654	198	156037	91.02			100
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	24.592	178	209535	87.18			99
42) Anthracene	24.760	178	195770	85.20			96
43) 3-Methylphenanthrene	0.000		0	N.D.	d		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341C.D
Acq On : 3 Oct 2014 1:29 am
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 05 11:13:37 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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	26.703	192	171419	88.80			98
48) 3,6-Dimethylphenanthrene	27.799	206	154200	90.38			97
49) Retene	30.449	234	80764	85.77		#	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	32.734	234	265259	92.32			100
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	28.676	202	265821	91.94		#	100
59) Pyrene	29.450	202	282609	89.80		#	100
60) 2-Methylfluoranthene	30.225	216	179331	89.46		#	100
61) Benzo(b)fluorene	30.837	216	177209	93.70			100
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.545	228	281113	93.26			100
68) Chrysene/Triphenylene	33.680	228	275732	91.61			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	42.449	191	123882	88.81			100
77) Benzo(b)fluoranthene	37.066	252	278197	88.36			100
78) Benzo(k,j)fluoranthene	37.152	252	278928	89.62			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	359731	92.93			99
81) Benzo(a)pyrene	38.217	252	294368	88.04			100
82) Indeno(1,2,3-c,d)pyrene	42.875	276	395448	88.36			99
83) Dibenzo(a,h)anthracene	42.927	278	313164	88.60			90
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	44.218	276	335263	84.68			95
89) Perylene	38.526	252	341446	89.24		#	100
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\MS70123\
Data File : ENV3341C.D
Acq On : 3 Oct 2014 1:29 am
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 05 11:13:37 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

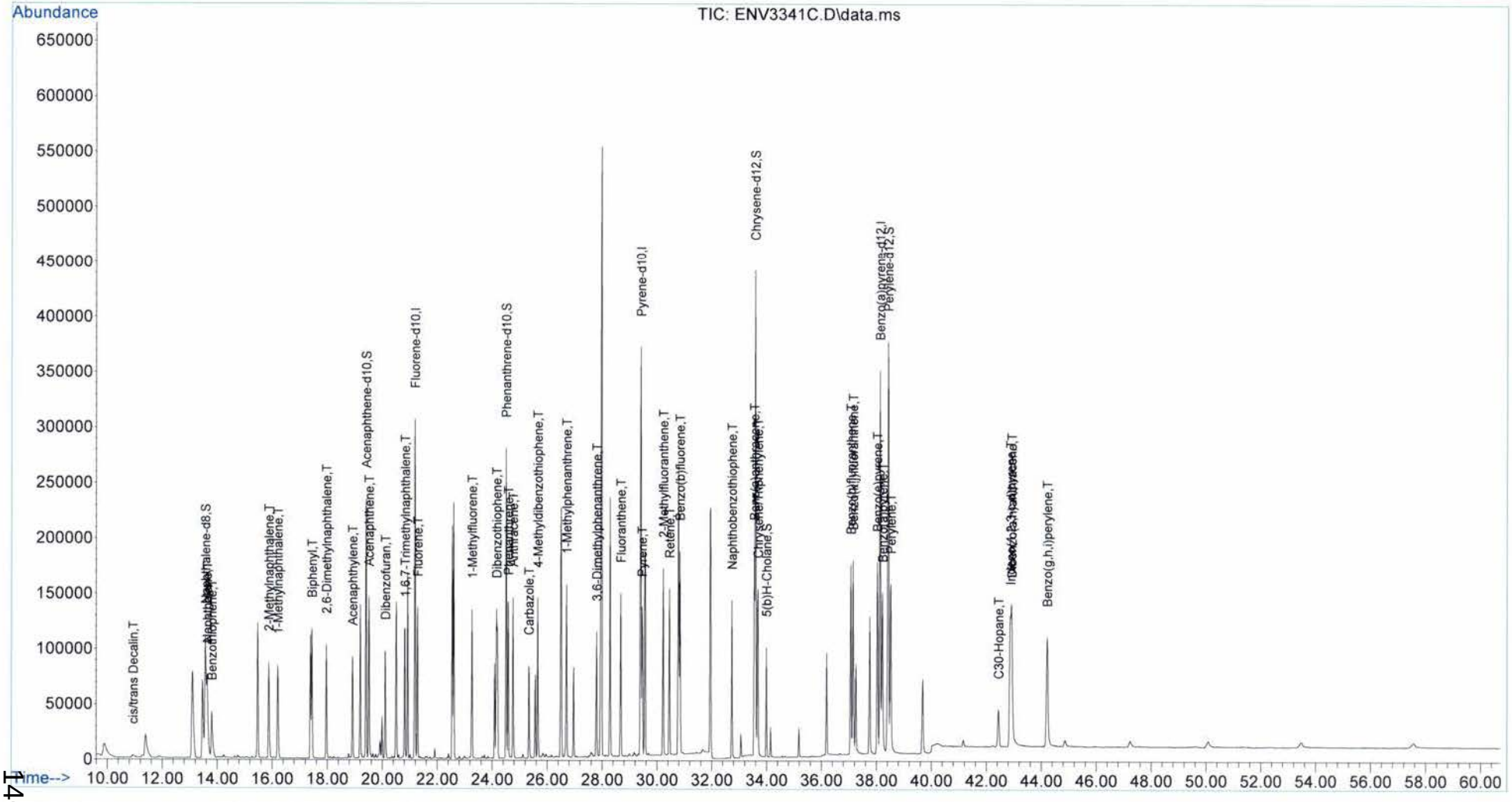
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ENV3341C.D
Acq On : 3 Oct 2014 1:29 am
Operator : ECM(YMIAO)
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 05 11:13:37 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name	ARC2055.D
Data File Path	C:\GCMS7\MS70123\
Operator	ECM(YMIAO)
Date Acquired	10/3/2014 2:39
Acq. Method File	PAH-2014.M
Sample Name	SHN-Cove-006(NB)092514
Misc Info	0
Instrument Name	GCMS 7
Vial Number	15
Sample Multiplier	10
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

ARC2055.D
HN-Cove-006(NB)092514
10/3/2014 2:39
PAH-2014.M
0.1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.94	90269	1995.1500	2039.8534
4)	C1-Decalins	12.11	206917	4573.3300	4675.8001
5)	C2-Decalins	14.47	495004	10940.7000	11185.8376
6)	C3-Decalins	16.44	1178480	26046.9000	26630.5074
7)	C4-Decalins	18.39	1525780	33723.1000	34478.7005
8)	Naphthalene	13.63	216938	785.9640	803.5743
9)+10)	C1-Naphthalenes	16.04	2512910	9104.2454	9308.2354
13)	C2-Naphthalenes	18.24	10455600	37880.4000	38729.1491
14)	C3-Naphthalenes	20.25	16337500	59190.6000	60516.8259
15)	C4-Naphthalenes	22.57	13975200	50632.1000	51766.5639
16)	Benzothiophene	13.84	47057	201.4830	205.9974
17)	C1-Benzothiophenes	16.17	426687	1826.9300	1867.8642
18)	C2-Benzothiophenes	18.38	1734110	7424.9000	7591.2625
19)	C3-Benzothiophenes	20.08	4291840	18376.3000	18788.0398
20)	C4-Benzothiophenes	21.38	5305620	22716.9000	23225.8954
22)	Biphenyl	17.44	296431	1227.7700	1255.2794
23)	Acenaphthylene	18.93	100680	375.1790	383.5853
24)	Acenaphthene	19.53	120296	765.6010	782.7551
25)	Dibenzofuran	20.11	285908	1087.2900	1111.6518
26)	Fluorene	21.28	589878	3068.2700	3137.0177
28)	C1-Fluorenes	23.28	2192300	11403.3000	11658.8026
29)	C2-Fluorenes	25.12	4510830	23463.2000	23988.9170
30)	C3-Fluorenes	26.66	4835760	25153.4000	25716.9876
33)	Carbazole	25.36	67550	276.6400	282.8384
42)	Anthracene	24.73	64597	238.1730	243.5095
41)	Phenanthrene	24.59	2553210	9000.1200	9201.7769
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.49	7819499	27563.9017	28181.4990
50)	C2-Phenanthrenes/Anthracenes	28.17	13650100	48117.1000	49195.2128
51)	C3-Phenanthrenes/Anthracenes	29.72	15847200	55861.7000	57113.3385
52)	C4-Phenanthrenes/Anthracenes	31.57	8423330	29692.4000	30357.6886
34)	Dibenzothiophene	24.17	2246930	7651.6900	7823.1339
35)+36)+37)	C1-Dibenzothiophenes	25.99	8261880	28134.9862	28765.3793
38)	C2-Dibenzothiophenes	27.08	14807500	50425.3000	51555.1304
39)	C3-Dibenzothiophenes	28.59	17068100	58123.5000	59425.8164
40)	C4-Dibenzothiophenes	29.57	12454100	42411.2000	43361.4663
58)	Fluoranthene	28.70	398170	1166.7500	1192.8922
59)	Pyrene	29.47	951695	2561.9200	2619.3224
62)	C1-Fluoranthenes/Pyrenes	30.98	3850300	11282.5000	11535.2959
63)	C2-Fluoranthenes/Pyrenes	32.71	4702570	13779.9000	14088.6527
64)	C3-Fluoranthenes/Pyrenes	33.82	5154910	15105.4000	15443.8519
65)	C4-Fluoranthenes/Pyrenes	34.96	4579400	13419.0000	13719.6664
53)	Naphthobenzothiophene	32.75	2039800	6014.4100	6149.1690
54)	C1-Naphthobenzothiophenes	34.51	6311270	18608.9000	19025.8514
55)	C2-Naphthobenzothiophenes	35.65	9815560	28941.4000	29589.8616
56)	C3-Naphthobenzothiophenes	36.98	10865800	32038.2000	32756.0486
57)	C4-Naphthobenzothiophenes	37.96	6757820	19925.6000	20372.0534
67)	Benz(a)anthracene	33.56	177067	497.6880	508.8392
68)	Chrysene/Triphenylene	33.66	995637	2802.5200	2865.3133
69)	C1-Chrysenes	34.92	3297230	9281.0700	9489.0219
70)	C2-Chrysenes	36.38	4643830	13071.5000	13364.3803
71)	C3-Chrysenes	37.77	3488900	9820.5800	10040.6201
72)	C4-Chrysenes	39.18	3296290	9278.4100	9486.3023
77)	Benzo(b)fluoranthene	37.10	277793	766.4560	783.6292
78)	Benzo(k,j)fluoranthene	37.17	38237	106.7340	109.1255
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.08	611703	1372.7900	1403.5488
81)	Benzo(a)pyrene	38.25	341110	886.2340	906.0910
89)	Perylene	38.56	398874	905.6560	925.9481
82)	Indeno(1,2,3-c,d)pyrene	42.94	162617	315.6620	322.7347
83)	Dibenzo(a,h)anthracene	42.98	98710	242.6150	248.0510
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	44.30	648160	1422.1800	1454.0454

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.88	1382840	7677.2300	7849.2462
10)	1-Methylnaphthalene	16.20	1130070	6797.8500	6950.1628
11)	2,6-Dimethylnaphthalene	17.98	1481910	9235.2000	9442.1241
12)	1,6,7-Trimethylnaphthalene	20.82	1052020	6677.9900	6827.6172
27)	1-Methylfluorene	23.28	1058580	9227.0100	9433.7506
35)	4-Methyldibenzothiophene	25.67	3534380	17466.7000	17858.0593
36)	2/3-Methyldibenzothiophene	25.98	2648760	13090.0000	13383.2948
37)	1-Methyldibenzothiophene	26.31	2078740	10273.0000	10503.1771
43)	3-Methylphenanthrene	26.26	1667570	7318.4800	7482.4580
44)	2-Methylphenanthrene	26.35	1989260	8730.2700	8925.8806
45)	2-Methylanthracene	26.51	105789	464.2770	474.6796
46)	4/9-Methylphenanthrene	26.63	2522990	11072.7000	11320.7952
47)	1-Methylphenanthrene	26.72	1533890	6731.8000	6882.6329
48)	3,6-Dimethylphenanthrene	27.80	523902	2601.4500	2659.7381
49)	Retene	30.47	311578	2803.3400	2866.1517
60)	2-Methylfluoranthene	30.25	178910	756.1570	773.0995
61)	Benzo(b)fluorene	30.86	315484	1413.2500	1444.9153
74)	C29-Hopane	40.49	3385090	21081.3000	21553.6481
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.79	4114350	25622.8000	26196.9050
91)	C20-TAS	33.14	520862	6174.5100	6312.8562
92)	C21-TAS	34.22	699971	8297.7400	8483.6593
93)	C26(20S)-TAS	38.30	774030	9175.6600	9381.2500
94)	C26(20R)/C27(20S)-TAS	39.21	2401250	28465.4000	29103.1964
95)	C28(20S)-TAS	39.99	2009560	23822.2000	24355.9607
96)	C27(20R)-TAS	40.43	1648480	19541.8000	19979.6540
97)	C28(20R)-TAS	41.53	1842080	21836.7000	22325.9736
	Surrogate Standards				
2)	Naphthalene-d8	13.56	413087	1783.23	71.29
21)	Acenaphthene-d10	19.42	322020	2391.45	95.60
32)	Phenanthrene-d10	24.52	559438	2447.11	97.81
66)	Chrysene-d12	33.62	751811	2402.09	96.07
88)	Perylene-d12	38.47	808011	2323.47	92.93
90)	5(b)H-Cholane	34.01	210845	2499.44	99.98
	Internal Standards				
1)	Fluorene-d10	21.19	347095	2510.50	
31)	Pyrene-d10	29.43	723900	2506.25	
73)	Benzo(a)pyrene-d12	38.17	779823	2503.25	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2055.D
Acq On : 3 Oct 2014 2:39 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-006(NB)092514
Misc :
ALS Vial : 15 Sample Multiplier: 10

Quant Time: Oct 05 11:28:24 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	347095m	251.05			0.00
31) Pyrene-d10	29.430	212	723900	250.63			0.02
73) Benzo(a)pyrene-d12	38.166	264	779823	250.32			0.02
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	413087	1783.23			0.00
21) Acenaphthene-d10	19.415	164	322020	2391.45			0.00
32) Phenanthrene-d10	24.522	188	559438	2447.11			0.01
66) Chrysene-d12	33.622	240	751811	2402.09			0.02
88) Perylene-d12	38.475	264	808011	2323.47			0.02
90) 5(b)H-Cholane	34.009	217	210845m	2499.44			0.02
Target Compounds							Qvalue
3) cis/trans Decalin	10.943	138	90269m	1995.15			
4) C1-Decalins	12.105	152	206917m	4573.33			
5) C2-Decalins	14.468	166	495004m	10940.70			
6) C3-Decalins	16.437	180	1178475m	26046.94			
7) C4-Decalins	18.394	194	1525775m	33723.05			
8) Naphthalene	13.629	128	216938	785.96			98
9) 2-Methylnaphthalene	15.876	142	1382836	7677.23			99
10) 1-Methylnaphthalene	16.200	142	1130070	6797.85			94
11) 2,6-Dimethylnaphthalene	17.975	156	1481910m	9235.20			
12) 1,6,7-Trimethylnaphtha...	20.821	170	1052015m	6677.99			
13) C2-Naphthalenes	18.241	156	10455566m	37880.38			
14) C3-Naphthalenes	20.253	170	16337518m	59190.62			
15) C4-Naphthalenes	22.574	184	13975223m	50632.05			
16) Benzothiophene	13.836	134	47057m	201.48			
17) C1-Benzothiophenes	16.172	148	426687m	1826.93			
18) C2-Benzothiophenes	18.380	162	1734112m	7424.90			
19) C3-Benzothiophenes	20.075	176	4291842m	18376.25			
20) C4-Benzothiophenes	21.378	190	5305616m	22716.90			
22) Biphenyl	17.444	154	296431	1227.77			99
23) Acenaphthylene	18.926	152	100680	375.18		#	1
24) Acenaphthene	19.527	154	120296	765.60			83
25) Dibenzofuran	20.111	168	285908	1087.29			100
26) Fluorene	21.283	166	589878	3068.27			85
27) 1-Methylfluorene	23.278	180	1058583m	9227.01			
28) C1-Fluorenes	23.278	180	2192301m	11403.33			
29) C2-Fluorenes	25.123	194	4510828m	23463.23			
30) C3-Fluorenes	26.661	208	4835757m	25153.36			
33) Carbazole	25.361	167	67550	276.64			100
34) Dibenzothiophene	24.173	184	2246931	7651.69		#	92
35) 4-Methyldibenzothiophene	25.668	198	3534378	17466.67			100
36) 2/3-Methyldibenzothiop...	25.976	198	2648758	13089.99			100
37) 1-Methyldibenzothiophene	26.311	198	2078739	10272.99			100
38) C2-Dibenzothiophenes	27.080	212	14807457m	50425.28			
39) C3-Dibenzothiophenes	28.594	226	17068053m	58123.51			
40) C4-Dibenzothiophenes	29.573	240	12454109m	42411.20			
41) Phenanthrene	24.592	178	2553209	9000.12			98
42) Anthracene	24.732	178	64597m	238.17			
43) 3-Methylphenanthrene	26.256	192	1667569m	7318.48			

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2055.D
Acq On : 3 Oct 2014 2:39 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-006(NB)092514
Misc :
ALS Vial : 15 Sample Multiplier: 10

Quant Time: Oct 05 11:28:24 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) 2-Methylphenanthrene	26.353	192	1989256	8730.27			94
45) 2-Methylanthracene	26.507	192	105789m	464.28			
46) 4/9-Methylphenanthrene	26.633	192	2522993m	11072.68			
47) 1-Methylphenanthrene	26.717	192	1533891	6731.80			100
48) 3,6-Dimethylphenanthrene	27.799	206	523902m	2601.45			
49) Retene	30.470	234	311578	2803.34		#	64
50) C2-Phenanthrenes/Anthr...	28.166	206	13650138m	48117.05			
51) C3-Phenanthrenes/Anthr...	29.715	220	15847190m	55861.71			
52) C4-Phenanthrenes/Anthr...	31.571	234	8423328m	29692.43			
53) Naphthobenzothiophene	32.753	234	2039802m	6014.41			
54) C1-Naphthobenzothiophenes	34.511	248	6311270m	18608.95			
55) C2-Naphthobenzothiophenes	35.651	262	9815560m	28941.44			
56) C3-Naphthobenzothiophenes	36.980	276	10865838m	32038.22			
57) C4-Naphthobenzothiophenes	37.959	290	6757815m	19925.60			
58) Fluoranthene	28.696	202	398170m	1166.75			
59) Pyrene	29.471	202	951695	2561.92		#	100
60) 2-Methylfluoranthene	30.246	216	178910	756.16		#	100
61) Benzo(b)fluorene	30.857	216	315484	1413.25			79
62) C1-Fluoranthenes/Pyrenes	30.979	216	3850297m	11282.47			
63) C2-Fluoranthenes/Pyrenes	32.715	230	4702568m	13779.87			
64) C3-Fluoranthenes/Pyrenes	33.816	244	5154909m	15105.36			
65) C4-Fluoranthenes/Pyrenes	34.955	258	4579404m	13418.97			
67) Benz(a)anthracene	33.565	228	177067	497.69			98
68) Chrysene/Triphenylene	33.661	228	995637	2802.52			99
69) C1-Chrysenes	34.917	242	3297234m	9281.07			
70) C2-Chrysenes	36.379	256	4643831m	13071.48			
71) C3-Chrysenes	37.770	270	3488901m	9820.58			
72) C4-Chrysenes	39.179	284	3296288m	9278.41			
74) C29-Hopane	40.486	191	3385087m	21081.25			
75) 18a-Oleanane	0.000		0	N.D.	d		
76) C30-Hopane	41.791	191	4114346m	25622.85			
77) Benzo(b)fluoranthene	37.100	252	277793	766.46		#	1
78) Benzo(k,j)fluoranthene	37.169	252	38237	106.73		#	1
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.080	252	611703	1372.79		#	55
81) Benzo(a)pyrene	38.251	252	341110	886.23		#	77
82) Indeno(1,2,3-c,d)pyrene	42.940	276	162617	315.66			97
83) Dibenzo(a,h)anthracene	42.979	278	98710m	242.62			
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	44.296	276	648160	1422.18			91
89) Perylene	38.561	252	398874m	905.66			
91) C20-TAS	33.140	231	520862m	6174.51			
92) C21-TAS	34.221	231	699971m	8297.74			
93) C26(20S)-TAS	38.303	231	774030m	9175.66			
94) C26(20R)/C27(20S)-TAS	39.214	231	2401251	28465.39			100
95) C28(20S)-TAS	39.987	231	2009563m	23822.16			
96) C27(20R)-TAS	40.434	231	1648482	19541.77			100
97) C28(20R)-TAS	41.532	231	1842077m	21836.72			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2055.D
Acq On : 3 Oct 2014 2:39 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-006(NB)092514
Misc :
ALS Vial : 15 Sample Multiplier: 10

Quant Time: Oct 05 11:28:24 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

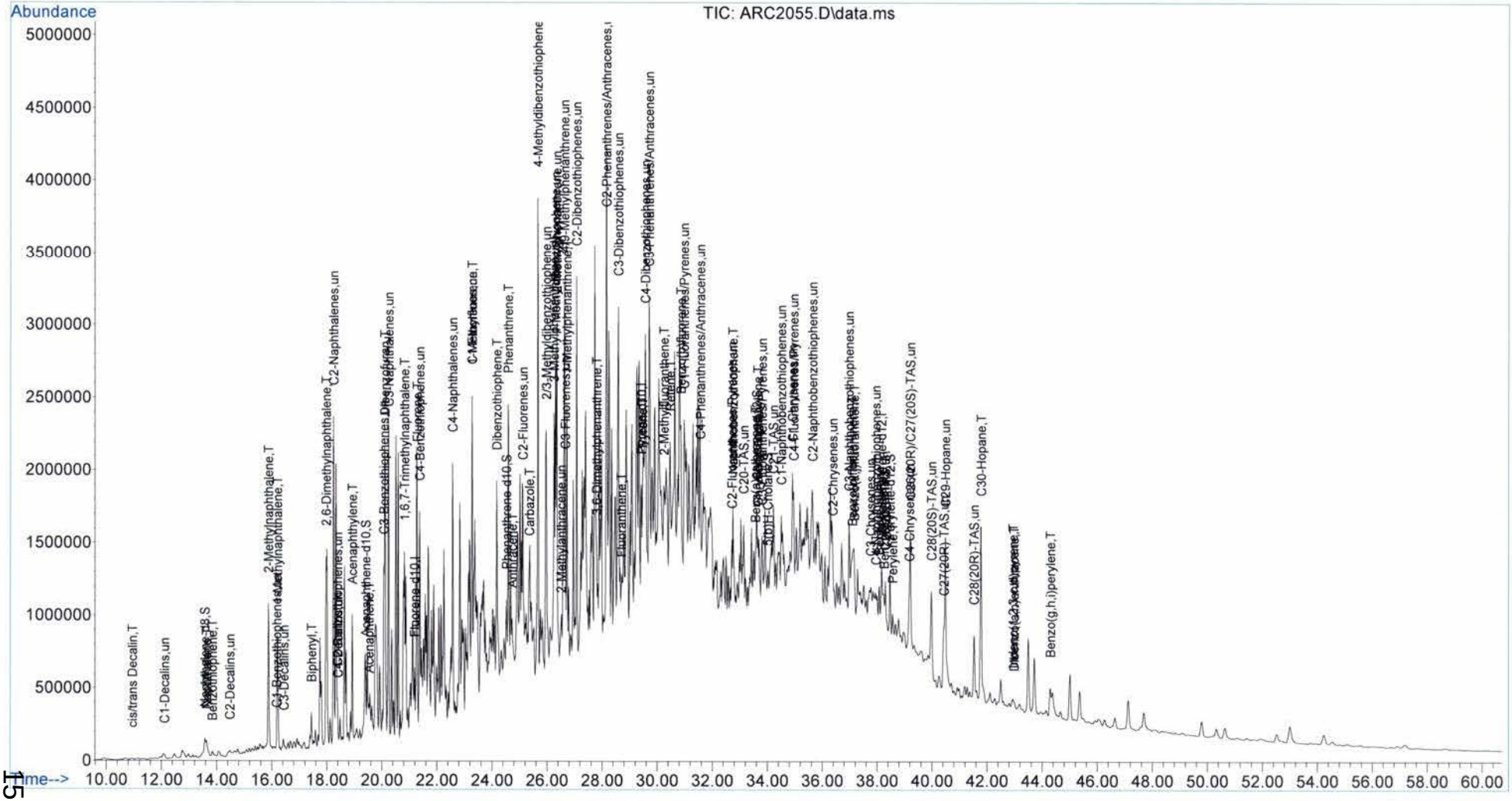
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2055.D
Acq On : 3 Oct 2014 2:39 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-006(NB)092514
Misc :
ALS Vial : 15 Sample Multiplier: 10

Quant Time: Oct 05 11:28:24 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name ARC2056.D
Data File Path C:\GCMS7\MS70123\
Operator ECM(YMIAO)
Date Acquired 10/3/2014 3:48
Acq. Method File PAH-2014.M
Sample Name SHN-Cove-007(NB)092514
Misc Info 0
Instrument Name GCMS 7
Vial Number 16
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

ARC2056.D
HN-Cove-007(NB)092514
10/3/2014 3:48
PAH-2014.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	13.63	13924	6.0112	6.7057
9)+10)	C1-Naphthalenes	16.04	20880	9.0142	10.0556
13)	C2-Naphthalenes	18.24	138780	59.9134	66.8351
14)	C3-Naphthalenes	20.24	523498	226.0020	252.1116
15)	C4-Naphthalenes	22.56	640466	276.4990	308.4424
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	17.44	4529	2.2353	2.4935
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.10	19366	8.7759	9.7897
26)	Fluorene	21.28	18889	11.7077	13.0603
28)	C1-Fluorenes	23.18	25451	15.7749	17.5973
29)	C2-Fluorenes	25.11	384187	238.1250	265.6351
30)	C3-Fluorenes	27.07	935614	579.9070	646.9026
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	24.66	6405	2.6906	3.0014
41)	Phenanthrene	24.59	175062	70.3069	78.4293
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.48	961002	385.9494	430.5374
50)	C2-Phenanthrenes/Anthracenes	28.15	2821660	1133.2100	1264.1277
51)	C3-Phenanthrenes/Anthracenes	30.80	4397850	1766.2300	1970.2793
52)	C4-Phenanthrenes/Anthracenes	31.55	2859030	1148.2200	1280.8717
34)	Dibenzothiophene	24.16	89979	34.9103	38.9434
35)+36)+37)	C1-Dibenzothiophenes	25.97	714730	277.3029	309.3392
38)	C2-Dibenzothiophenes	27.07	2674160	1037.5300	1157.3939
39)	C3-Dibenzothiophenes	28.57	4882370	1894.2700	2113.1115
40)	C4-Dibenzothiophenes	29.57	4192780	1626.7300	1814.6631
58)	Fluoranthene	28.70	97042	32.3977	36.1405
59)	Pyrene	29.47	194839	59.7569	66.6605
62)	C1-Fluoranthenes/Pyrenes	30.98	1034080	345.2300	385.1138
63)	C2-Fluoranthenes/Pyrenes	32.70	1307710	436.5820	487.0195
64)	C3-Fluoranthenes/Pyrenes	33.82	1714580	572.4170	638.5473
65)	C4-Fluoranthenes/Pyrenes	34.94	1000040	333.8660	372.4369
53)	Naphthobenzothiophene	32.75	634941	213.2960	237.9377
54)	C1-Naphthobenzothiophenes	33.91	2313750	777.2600	867.0554
55)	C2-Naphthobenzothiophenes	35.59	4217850	1416.9100	1580.6030
56)	C3-Naphthobenzothiophenes	36.96	3881890	1304.0500	1454.7045
57)	C4-Naphthobenzothiophenes	37.94	2160660	725.8330	809.6871
67)	Benz(a)anthracene	33.56	41001	13.1298	14.6467
68)	Chrysene/Triphenylene	33.64	343333	110.1050	122.8252
69)	C1-Chrysenes	34.92	1004400	322.1080	359.3205
70)	C2-Chrysenes	36.36	1730230	554.8780	618.9820
71)	C3-Chrysenes	37.75	1199370	384.6310	429.0667
72)	C4-Chrysenes	39.16	980511	314.4450	350.7722
77)	Benzo(b)fluoranthene	37.08	186824	56.1245	62.6085
78)	Benzo(k,j)fluoranthene	37.17	57520	17.4820	19.5017
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.06	251482	61.4505	68.5498
81)	Benzo(a)pyrene	38.23	107686	30.4626	33.9819
89)	Perylene	38.54	124941	30.8878	34.4562
82)	Indeno(1,2,3-c,d)pyrene	42.91	84963	17.9573	20.0319
83)	Dibenzo(a,h)anthracene	42.95	40070	10.7233	11.9621
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	44.27	309204	73.8704	82.4045

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.88	12400	8.2033	9.1510
10)	1-Methylnaphthalene	16.20	8480	6.0784	6.7807
11)	2,6-Dimethylnaphthalene	17.98	17325	12.8655	14.3518
12)	1,6,7-Trimethylnaphthalene	20.82	30159	22.8124	25.4479
27)	1-Methylfluorene	23.28	89923	93.3979	104.1880
35)	4-Methyldibenzothiophene	25.65	298778	168.2250	187.6597
36)	2/3-Methyldibenzothiophene	25.96	223088	125.6080	140.1193
37)	1-Methyldibenzothiophene	26.30	192864	108.5910	121.1363
43)	3-Methylphenanthrene	26.24	163862	81.9331	91.3987
44)	2-Methylphenanthrene	26.34	201834	100.9200	112.5791
45)	2-Methylanthracene	26.51	140452	70.2278	78.3411
46)	4/9-Methylphenanthrene	26.62	285896	142.9520	159.4670
47)	1-Methylphenanthrene	26.70	168958	84.4812	94.2412
48)	3,6-Dimethylphenanthrene	27.80	119810	67.7803	75.6108
49)	Retene	30.47	103544	106.1400	118.4022
60)	2-Methylfluoranthene	30.25	51756	24.9220	27.8012
61)	Benzo(b)fluorene	30.86	47987	24.4911	27.3205
74)	C29-Hopane	40.47	2328700	1579.0400	1761.4636
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.76	2753090	1866.8100	2082.4791
91)	C20-TAS	33.14	259635	335.1170	373.8324
92)	C21-TAS	34.22	301845	389.5990	434.6087
93)	C26(20S)-TAS	38.30	465839	601.2700	670.7336
94)	C26(20R)/C27(20S)-TAS	39.20	1260840	1627.3900	1815.3994
95)	C28(20S)-TAS	39.97	1062080	1370.8500	1529.2218
96)	C27(20R)-TAS	40.42	959729	1238.7500	1381.8605
97)	C28(20R)-TAS	41.52	921669	1189.6200	1327.0546
	Surrogate Standards				
2)	Naphthalene-d8	13.58	285255	146.73	58.66
21)	Acenaphthene-d10	19.42	229830	203.38	81.30
32)	Phenanthrene-d10	24.51	450039	224.28	89.64
66)	Chrysene-d12	33.60	642378	233.84	93.52
88)	Perylene-d12	38.46	726710	227.53	91.00
90)	5(b)H-Cholane	34.01	161245	208.12	83.25
	Internal Standards				
1)	Fluorene-d10	21.19	291285	251.05	
31)	Pyrene-d10	29.41	635381	250.63	
73)	Benzo(a)pyrene-d12	38.15	716213	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2056.D
Acq On : 3 Oct 2014 3:48 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-007(NB)092514
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 05 11:49:33 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	291285	251.05			0.00
31) Pyrene-d10	29.410	212	635381	250.63			0.00
73) Benzo(a)pyrene-d12	38.148	264	716213	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.578	136	285255	146.73			0.01
21) Acenaphthene-d10	19.415	164	229830	203.38			0.00
32) Phenanthrene-d10	24.508	188	450039	224.28			0.00
66) Chrysene-d12	33.603	240	642378	233.84			0.00
88) Perylene-d12	38.458	264	726710	227.53			0.00
90) 5(b)H-Cholane	34.009	217	161245m	208.12			0.02
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	13.629	128	13924	6.01			91
9) 2-Methylnaphthalene	15.876	142	12400	8.20			95
10) 1-Methylnaphthalene	16.200	142	8480	6.08			99
11) 2,6-Dimethylnaphthalene	17.975	156	17325m	12.87			
12) 1,6,7-Trimethylnaphtha...	20.821	170	30159m	22.81			
13) C2-Naphthalenes	18.241	156	138780m	59.91			
14) C3-Naphthalenes	20.241	170	523498m	226.00			
15) C4-Naphthalenes	22.562	184	640466m	276.50			
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	17.444	154	4529	2.24			89
23) Acenaphthylene	0.000		0	N.D.	d		
24) Acenaphthene	0.000		0	N.D.	d		
25) Dibenzofuran	20.099	168	19366	8.78			100
26) Fluorene	21.283	166	18889	11.71			94
27) 1-Methylfluorene	23.278	180	89923m	93.40			
28) C1-Fluorenes	23.180	180	25451	15.77			88
29) C2-Fluorenes	25.109	194	384187m	238.12			
30) C3-Fluorenes	27.066	208	935614m	579.91			
33) Carbazole	0.000		0	N.D.	d		
34) Dibenzothiophene	24.159	184	89979	34.91		#	92
35) 4-Methyldibenzothiophene	25.654	198	298778	168.22			100
36) 2/3-Methyldibenzothiop...	25.962	198	223088	125.61			100
37) 1-Methyldibenzothiophene	26.298	198	192864	108.59			100
38) C2-Dibenzothiophenes	27.066	212	2674159m	1037.53			
39) C3-Dibenzothiophenes	28.574	226	4882369m	1894.27			
40) C4-Dibenzothiophenes	29.573	240	4192781m	1626.73			
41) Phenanthrene	24.592	178	175062	70.31			96
42) Anthracene	24.662	178	6405	2.69			97
43) 3-Methylphenanthrene	26.242	192	163862m	81.93			

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2056.D
Acq On : 3 Oct 2014 3:48 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-007(NB)092514
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 05 11:49:33 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) 2-Methylphenanthrene	26.339	192	201834	100.92			95
45) 2-Methylanthracene	26.507	192	140452m	70.23			
46) 4/9-Methylphenanthrene	26.619	192	285896m	142.95			
47) 1-Methylphenanthrene	26.703	192	168958	84.48			94
48) 3,6-Dimethylphenanthrene	27.799	206	119810m	67.78			
49) Retene	30.470	234	103544	106.14		#	33
50) C2-Phenanthrenes/Anthr...	28.146	206	2821660m	1133.21			
51) C3-Phenanthrenes/Anthr...	30.796	220	4397850m	1766.23			
52) C4-Phenanthrenes/Anthr...	31.550	234	2859027m	1148.22			
53) Naphthobenzothiophene	32.753	234	634941m	213.30			
54) C1-Naphthobenzothiophenes	33.912	248	2313753m	777.26			
55) C2-Naphthobenzothiophenes	35.593	262	4217853m	1416.91			
56) C3-Naphthobenzothiophenes	36.963	276	3881894m	1304.05			
57) C4-Naphthobenzothiophenes	37.942	290	2160663m	725.83			
58) Fluoranthene	28.696	202	97042	32.40		#	100
59) Pyrene	29.471	202	194839	59.76		#	100
60) 2-Methylfluoranthene	30.246	216	51756	24.92		#	100
61) Benzo(b)fluorene	30.857	216	47987	24.49			86
62) C1-Fluoranthenes/Pyrenes	30.980	216	1034081m	345.23			
63) C2-Fluoranthenes/Pyrenes	32.695	230	1307711m	436.58			
64) C3-Fluoranthenes/Pyrenes	33.816	244	1714581m	572.42			
65) C4-Fluoranthenes/Pyrenes	34.936	258	1000041m	333.87			
67) Benz(a)anthracene	33.565	228	41001	13.13			98
68) Chrysene/Triphenylene	33.642	228	343333	110.11			97
69) C1-Chrysenes	34.917	242	1004404m	322.11			
70) C2-Chrysenes	36.361	256	1730234m	554.88			
71) C3-Chrysenes	37.753	270	1199367m	384.63			
72) C4-Chrysenes	39.162	284	980511m	314.45			
74) C29-Hopane	40.473	191	2328695	1579.04			100
75) 18a-Oleanane	0.000		0	N.D.	d		
76) C30-Hopane	41.765	191	2753089m	1866.81			
77) Benzo(b)fluoranthene	37.083	252	186824m	56.12			
78) Benzo(k,j)fluoranthene	37.169	252	57520m	17.48			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.062	252	251482	61.45		#	54
81) Benzo(a)pyrene	38.234	252	107686	30.46		#	48
82) Indeno(1,2,3-c,d)pyrene	42.914	276	84963	17.96			98
83) Dibenzo(a,h)anthracene	42.953	278	40070	10.72		#	76
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	44.270	276	309204	73.87			91
89) Perylene	38.544	252	124941	30.89		#	100
91) C20-TAS	33.140	231	259635m	335.12			
92) C21-TAS	34.221	231	301845m	389.60			
93) C26(20S)-TAS	38.303	231	465839m	601.27			
94) C26(20R)/C27(20S)-TAS	39.196	231	1260836m	1627.39			
95) C28(20S)-TAS	39.970	231	1062082m	1370.85			
96) C27(20R)-TAS	40.422	231	959729m	1238.75			
97) C28(20R)-TAS	41.519	231	921669m	1189.62			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2056.D
Acq On : 3 Oct 2014 3:48 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-007(NB)092514
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 05 11:49:33 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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\MS70123\
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Acq On : 3 Oct 2014 3:48 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-007(NB)092514
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Quant Time: Oct 05 11:49:33 2014
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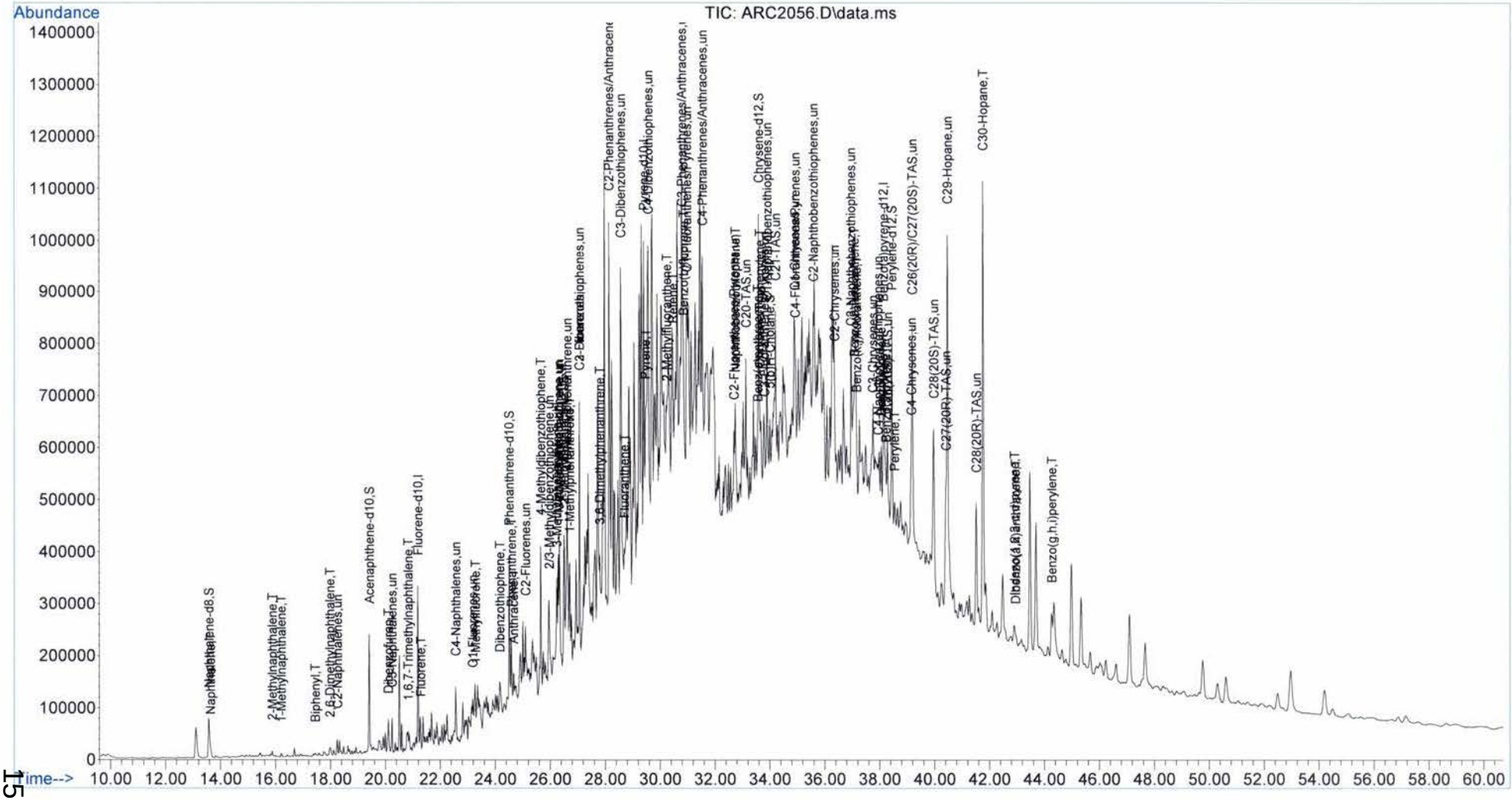
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name	ARC2057.D
Data File Path	C:\msdchem\2\data\MS70123\
Operator	ECM(YMIAO)
Date Acquired	10/3/2014 4:58
Acq. Method File	PAH-2014.M
Sample Name	SHN-Cove-008(NB)092514
Misc Info	0
Instrument Name	GCMS 7
Vial Number	17
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

ARC2057.D
HN-Cove-008(NB)092514
10/3/2014 4:58
PAH-2014.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.86	8760	22.4007	26.7908
4)	C1-Decalins	12.11	16643	42.5588	50.8994
5)	C2-Decalins	14.47	46466	118.8210	142.1074
6)	C3-Decalins	16.44	78667	201.1640	240.5879
7)	C4-Decalins	18.38	160232	409.7390	490.0392
8)	Naphthalene	13.64	17305	7.2537	8.6753
9)+10)	C1-Naphthalenes	16.04	38352	16.0759	19.2265
13)	C2-Naphthalenes	18.24	361451	151.5090	181.2016
14)	C3-Naphthalenes	20.24	1074450	450.3760	538.6402
15)	C4-Naphthalenes	22.57	1618450	678.4020	811.3545
16)	Benzothiophene	13.85	1572	0.7787	0.9313
17)	C1-Benzothiophenes	16.19	19664	9.7411	11.6501
18)	C2-Benzothiophenes	18.12	47232	23.3976	27.9830
19)	C3-Benzothiophenes	20.06	264445	131.0000	156.6732
20)	C4-Benzothiophenes	21.38	572053	283.3810	338.9177
22)	Biphenyl	17.44	6540	3.1340	3.7481
23)	Acenaphthylene	18.93	7228	3.1163	3.7270
24)	Acenaphthene	19.51	4261	3.1375	3.7524
25)	Dibenzofuran	20.10	25783	11.3442	13.5674
26)	Fluorene	21.28	33860	20.3770	24.3705
28)	C1-Fluorenes	23.28	193742	116.5940	139.4440
29)	C2-Fluorenes	25.11	641092	385.8100	461.4206
30)	C3-Fluorenes	27.07	1194660	718.9450	859.8430
33)	Carbazole	25.35	14848	6.9770	8.3443
42)	Anthracene	24.66	12522	5.2974	6.3356
41)	Phenanthrene	24.59	270888	109.5620	131.0338
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.48	1418383	573.6721	686.0997
50)	C2-Phenanthrenes/Anthracenes	28.15	3397680	1374.2100	1643.5262
51)	C3-Phenanthrenes/Anthracenes	30.80	4744390	1918.9000	2294.9639
52)	C4-Phenanthrenes/Anthracenes	31.55	3643980	1473.8300	1762.6696
34)	Dibenzothiophene	24.16	189698	74.1207	88.6468
35)+36)+37)	C1-Dibenzothiophenes	25.98	1231311	481.1102	575.3976
38)	C2-Dibenzothiophenes	27.07	3341490	1305.6200	1561.4940
39)	C3-Dibenzothiophenes	28.57	5284960	2064.9900	2469.6844
40)	C4-Dibenzothiophenes	29.57	4443960	1736.3900	2076.6858
58)	Fluoranthene	28.70	101476	34.1179	40.8043
59)	Pyrene	29.47	227638	70.3107	84.0901
62)	C1-Fluoranthenes/Pyrenes	30.98	943618	317.2600	379.4363
63)	C2-Fluoranthenes/Pyrenes	32.70	1473410	495.3830	592.4676
64)	C3-Fluoranthenes/Pyrenes	33.82	1730120	581.6940	695.6937
65)	C4-Fluoranthenes/Pyrenes	34.94	1343160	451.5930	540.0957
53)	Naphthobenzothiophene	32.75	688805	233.0290	278.6978
54)	C1-Naphthobenzothiophenes	33.91	2576140	871.5320	1042.3339
55)	C2-Naphthobenzothiophenes	35.59	4598070	1555.5700	1860.4289
56)	C3-Naphthobenzothiophenes	36.96	4541330	1536.3700	1837.4661
57)	C4-Naphthobenzothiophenes	37.94	1982340	670.6460	802.0785
67)	Benz(a)anthracene	33.56	43189	13.9284	16.6581
68)	Chrysene/Triphenylene	33.64	363894	117.5260	140.5586
69)	C1-Chrysenes	34.92	1160490	374.8000	448.2529
70)	C2-Chrysenes	36.36	1680410	542.7140	649.0745
71)	C3-Chrysenes	37.77	1005120	324.6210	388.2399
72)	C4-Chrysenes	39.16	650332	210.0350	251.1974
77)	Benzo(b)fluoranthene	37.08	135424	41.2461	49.3295
78)	Benzo(k,j)fluoranthene	37.17	21725	6.6942	8.0061
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.06	253834	62.8833	75.2071
81)	Benzo(a)pyrene	38.23	103507	29.6855	35.5032
89)	Perylene	38.54	139546	34.9756	41.8301
82)	Indeno(1,2,3-c,d)pyrene	42.91	82198	17.6132	21.0650
83)	Dibenzo(a,h)anthracene	42.95	38580	10.4674	12.5188
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	44.26	292318	70.8023	84.6781

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.88	20334	13.0610	15.6207
10)	1-Methylnaphthalene	16.20	18018	12.5399	14.9975
11)	2,6-Dimethylnaphthalene	17.98	49404	35.6211	42.6021
12)	1,6,7-Trimethylnaphthalene	20.82	75660	55.5663	66.4561
27)	1-Methylfluorene	23.28	86066	86.7938	103.8036
35)	4-Methyldibenzothiophene	25.67	526645	298.6240	357.1480
36)	2/3-Methyldibenzothiophene	25.96	384233	217.8720	260.5703
37)	1-Methyldibenzothiophene	26.30	320433	181.6950	217.3034
43)	3-Methylphenanthrene	26.24	260718	131.2860	157.0153
44)	2-Methylphenanthrene	26.34	320656	161.4680	193.1123
45)	2-Methylanthracene	26.51	139829	70.4114	84.2105
46)	4/9-Methylphenanthrene	26.62	431915	217.4920	260.1158
47)	1-Methylphenanthrene	26.70	265265	133.5750	159.7529
48)	3,6-Dimethylphenanthrene	27.80	146914	83.7024	100.1063
49)	Retene	30.47	115891	119.6380	143.0845
60)	2-Methylfluoranthene	30.25	58611	28.4227	33.9929
61)	Benzo(b)fluorene	30.86	58898	30.2726	36.2054
74)	C29-Hopane	40.47	2270180	1560.6600	1866.5164
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.76	2694470	1852.3400	2215.3595
91)	C20-TAS	33.14	252477	330.3860	395.1347
92)	C21-TAS	34.22	297219	388.9350	465.1580
93)	C26(20S)-TAS	38.29	411526	538.5150	644.0526
94)	C26(20R)/C27(20S)-TAS	39.20	1348930	1765.1800	2111.1180
95)	C28(20S)-TAS	39.97	984579	1288.4000	1540.8992
96)	C27(20R)-TAS	40.41	867191	1134.7900	1357.1849
97)	C28(20R)-TAS	41.52	920175	1204.1200	1440.1021
	Surrogate Standards				
2)	Naphthalene-d8	13.58	211312	105.54	42.19
21)	Acenaphthene-d10	19.42	202079	173.63	69.41
32)	Phenanthrene-d10	24.51	416813	209.20	83.61
66)	Chrysene-d12	33.60	626574	229.70	91.87
88)	Perylene-d12	38.46	713587	226.51	90.59
90)	5(b)H-Cholane	34.01	192793	252.29	100.91
	Internal Standards				
1)	Fluorene-d10	21.19	300004	251.05	
31)	Pyrene-d10	29.41	630913	250.63	
73)	Benzo(a)pyrene-d12	38.15	706440	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2057.D
Acq On : 3 Oct 2014 4:58 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-008(NB)092514
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 05 12:03:32 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	300004	251.05			0.00
31) Pyrene-d10	29.410	212	630913	250.63			0.00
73) Benzo(a)pyrene-d12	38.149	264	706440	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.578	136	211312	105.54			0.01
21) Acenaphthene-d10	19.415	164	202079	173.63			0.00
32) Phenanthrene-d10	24.508	188	416813	209.20			0.00
66) Chrysene-d12	33.603	240	626574	229.70			0.00
88) Perylene-d12	38.458	264	713587	226.51			0.00
90) 5(b)H-Cholane	34.009	217	192793m	252.29			0.02
Target Compounds							Qvalue
3) cis/trans Decalin	11.860	138	8760m	22.40			
4) C1-Decalins	12.106	152	16643m	42.56			
5) C2-Decalins	14.469	166	46466m	118.82			
6) C3-Decalins	16.438	180	78667m	201.16			
7) C4-Decalins	18.381	194	160232m	409.74			
8) Naphthalene	13.642	128	17305	7.25		#	83
9) 2-Methylnaphthalene	15.876	142	20334	13.06			99
10) 1-Methylnaphthalene	16.200	142	18018	12.54			94
11) 2,6-Dimethylnaphthalene	17.975	156	49404m	35.62			
12) 1,6,7-Trimethylnaphtha...	20.822	170	75660m	55.57			
13) C2-Naphthalenes	18.241	156	361451m	151.51			
14) C3-Naphthalenes	20.241	170	1074453m	450.38			
15) C4-Naphthalenes	22.574	184	1618448m	678.40			
16) Benzothiophene	13.849	134	1572m	0.78			
17) C1-Benzothiophenes	16.186	148	19664m	9.74			
18) C2-Benzothiophenes	18.115	162	47232m	23.40			
19) C3-Benzothiophenes	20.064	176	264445m	131.00			
20) C4-Benzothiophenes	21.378	190	572053m	283.38			
22) Biphenyl	17.444	154	6540	3.13			85
23) Acenaphthylene	18.926	152	7228	3.12		#	1
24) Acenaphthene	19.513	154	4261m	3.14			
25) Dibenzofuran	20.099	168	25783	11.34			100
26) Fluorene	21.284	166	33860	20.38			86
27) 1-Methylfluorene	23.278	180	86066	86.79			85
28) C1-Fluorenes	23.278	180	193742m	116.59			
29) C2-Fluorenes	25.109	194	641092m	385.81			
30) C3-Fluorenes	27.067	208	1194656m	718.94			
33) Carbazole	25.347	167	14848	6.98			100
34) Dibenzothiophene	24.159	184	189698m	74.12			
35) 4-Methyldibenzothiophene	25.669	198	526645	298.62			100
36) 2/3-Methyldibenzothiop...	25.962	198	384233	217.87			100
37) 1-Methyldibenzothiophene	26.298	198	320433	181.70			100
38) C2-Dibenzothiophenes	27.067	212	3341487m	1305.62			
39) C3-Dibenzothiophenes	28.574	226	5284964m	2064.99			
40) C4-Dibenzothiophenes	29.573	240	4443960m	1736.39			
41) Phenanthrene	24.592	178	270888	109.56			96
42) Anthracene	24.662	178	12522m	5.30			
43) 3-Methylphenanthrene	26.242	192	260718m	131.29			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2057.D
Acq On : 3 Oct 2014 4:58 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-008(NB)092514
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 05 12:03:32 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) 2-Methylphenanthrene	26.340	192	320656	161.47			95
45) 2-Methylanthracene	26.507	192	139829m	70.41			
46) 4/9-Methylphenanthrene	26.619	192	431915m	217.49			
47) 1-Methylphenanthrene	26.703	192	265265m	133.58			
48) 3,6-Dimethylphenanthrene	27.799	206	146914m	83.70			
49) Retene	30.470	234	115891m	119.64			
50) C2-Phenanthrenes/Anthr...	28.146	206	3397681m	1374.21			
51) C3-Phenanthrenes/Anthr...	30.796	220	4744390m	1918.90			
52) C4-Phenanthrenes/Anthr...	31.551	234	3643981m	1473.83			
53) Naphthobenzothiophene	32.753	234	688805m	233.03			
54) C1-Naphthobenzothiophenes	33.912	248	2576137m	871.53			
55) C2-Naphthobenzothiophenes	35.593	262	4598073m	1555.57			
56) C3-Naphthobenzothiophenes	36.963	276	4541328m	1536.37			
57) C4-Naphthobenzothiophenes	37.942	290	1982344m	670.65			
58) Fluoranthene	28.696	202	101476	34.12		#	100
59) Pyrene	29.471	202	227638	70.31		#	100
60) 2-Methylfluoranthene	30.246	216	58611	28.42		#	100
61) Benzo(b)fluorene	30.857	216	58898	30.27			90
62) C1-Fluoranthenes/Pyrenes	30.980	216	943618m	317.26			
63) C2-Fluoranthenes/Pyrenes	32.695	230	1473405m	495.38			
64) C3-Fluoranthenes/Pyrenes	33.816	244	1730116m	581.69			
65) C4-Fluoranthenes/Pyrenes	34.936	258	1343160m	451.59			
67) Benz(a)anthracene	33.565	228	43189	13.93			94
68) Chrysene/Triphenylene	33.642	228	363894	117.53			96
69) C1-Chrysenes	34.917	242	1160493m	374.80			
70) C2-Chrysenes	36.362	256	1680405m	542.71			
71) C3-Chrysenes	37.771	270	1005122m	324.62			
72) C4-Chrysenes	39.162	284	650332m	210.04			
74) C29-Hopane	40.473	191	2270180	1560.66			100
75) 18a-Oleanane	0.000		0	N.D.	d		
76) C30-Hopane	41.765	191	2694472m	1852.34			
77) Benzo(b)fluoranthene	37.083	252	135424	41.25		#	15
78) Benzo(k,j)fluoranthene	37.169	252	21725	6.69		#	58
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.063	252	253834	62.88			93
81) Benzo(a)pyrene	38.234	252	103507m	29.69			
82) Indeno(1,2,3-c,d)pyrene	42.914	276	82198	17.61			96
83) Dibenzo(a,h)anthracene	42.953	278	38580	10.47		#	74
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	44.257	276	292318	70.80			92
89) Perylene	38.544	252	139546m	34.98			
91) C20-TAS	33.140	231	252477m	330.39			
92) C21-TAS	34.221	231	297219m	388.93			
93) C26(20S)-TAS	38.286	231	411526m	538.51			
94) C26(20R)/C27(20S)-TAS	39.197	231	1348927	1765.18			100
95) C28(20S)-TAS	39.970	231	984579m	1288.40			
96) C27(20R)-TAS	40.409	231	867191	1134.79			100
97) C28(20R)-TAS	41.520	231	920175m	1204.12			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2057.D
Acq On : 3 Oct 2014 4:58 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-008(NB)092514
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 05 12:03:32 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

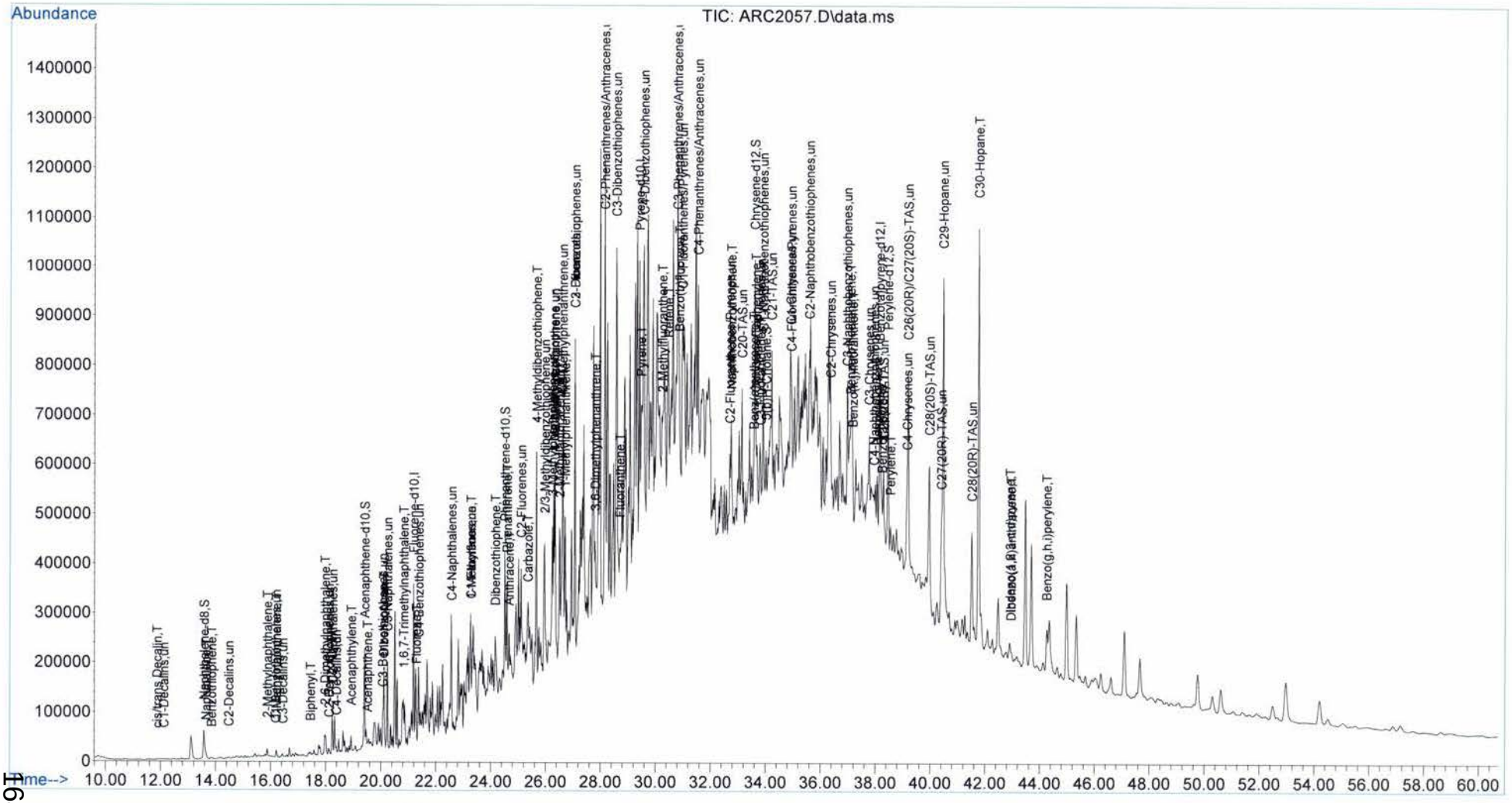
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2057.D
Acq On : 3 Oct 2014 4:58 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-008(NB)092514
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 05 12:03:32 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



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

Data File Name	ARC2058.D
Data File Path	C:\GCMS7\MS70123\
Operator	ECM(YMIAO)
Date Acquired	10/3/2014 9:34
Acq. Method File	PAH-2014.M
Sample Name	SHN-Cove-009(NB)092914
Misc Info	0
Instrument Name	GCMS 7
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

ARC2058.D
HN-Cove-009(NB)092914
10/3/2014 9:34
PAH-2014.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	13.66	123756	53.5148	50.4105
9)+10)	C1-Naphthalenes	16.06	18447	7.9769	7.5142
13)	C2-Naphthalenes	17.78	45270	19.5757	18.4402
14)	C3-Naphthalenes	20.51	82610	35.7223	33.6501
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	17.47	7377	3.6468	3.4353
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.12	30288	13.7477	12.9502
26)	Fluorene	21.30	16359	10.1561	9.5670
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	25.31	22752	12.0213	11.3240
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.59	126970	57.7436	54.3940
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.50	166695	75.8098	71.4122
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	24.17	16305	7.1636	6.7480
35)+36)+37)	C1-Dibenzothiophenes	25.98	29157	12.8101	12.0670
38)	C2-Dibenzothiophenes	27.08	45594	20.0316	18.8696
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.70	24174	9.1390	8.6089
59)	Pyrene	29.27	11001	3.8207	3.5990
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	33.56	3048	1.1053	1.0412
68)	Chrysene/Triphenylene	33.64	11797	4.2841	4.0356
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	15.90	13368	8.8581	8.3443
10)	1-Methylnaphthalene	16.23	5079	3.6466	3.4350
11)	2,6-Dimethylnaphthalene	17.99	3701	2.7529	2.5932
12)	1,6,7-Trimethylnaphthalene	20.83	1898	1.4380	1.3546
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	25.67	13584	8.6610	8.1585
36)	2/3-Methyldibenzothiophene	25.96	7308	4.6595	4.3892
37)	1-Methyldibenzothiophene	26.30	8265	5.2696	4.9640
43)	3-Methylphenanthrene	26.26	12651	7.1631	6.7476
44)	2-Methylphenanthrene	26.35	13733	7.7758	7.3247
45)	2-Methylanthracene	26.52	121232	68.6428	64.6610
46)	4/9-Methylphenanthrene	26.63	11461	6.4893	6.1129
47)	1-Methylphenanthrene	26.72	7618	4.3134	4.0632
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	13.59	314818	162.21	64.85
21)	Acenaphthene-d10	19.43	238305	211.23	84.44
32)	Phenanthrene-d10	24.52	470638	265.60	106.16
66)	Chrysene-d12	33.60	532335	219.44	87.76
88)	Perylene-d12	38.44	170379	159.40	63.75
90)	5(b)H-Cholane	33.99	144998	559.22	223.69
	Internal Standards				
1)	Fluorene-d10	21.20	290809	251.05	
31)	Pyrene-d10	29.41	561097	250.63	
73)	Benzo(a)pyrene-d12	38.15	239695	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2058.D
Acq On : 3 Oct 2014 9:34 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-009(NB)092914
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Oct 05 12:09:48 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.201	176	290809	251.05			0.01
31) Pyrene-d10	29.410	212	561097	250.63			0.00
73) Benzo(a)pyrene-d12	38.148	264	239695	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.590	136	314818	162.21			0.03
21) Acenaphthene-d10	19.429	164	238305	211.23			0.01
32) Phenanthrene-d10	24.522	188	470638	265.60			0.01
66) Chrysene-d12	33.603	240	532335	219.43			0.00
88) Perylene-d12	38.441	264	170379	159.39			-0.02
90) 5(b)H-Cholane	33.990	217	144998	559.21			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	13.655	128	123756m	53.51			
9) 2-Methylnaphthalene	15.902	142	13368	8.86			99
10) 1-Methylnaphthalene	16.228	142	5079	3.65			80
11) 2,6-Dimethylnaphthalene	17.989	156	3701m	2.75			
12) 1,6,7-Trimethylnaphtha...	20.833	170	1898m	1.44			
13) C2-Naphthalenes	17.779	156	45270m	19.58			
14) C3-Naphthalenes	20.514	170	82610m	35.72			
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	17.472	154	7377	3.65		#	45
23) Acenaphthylene	0.000		0	N.D.	d		
24) Acenaphthene	0.000		0	N.D.	d		
25) Dibenzofuran	20.123	168	30288	13.75			100
26) Fluorene	21.295	166	16359	10.16			83
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	25.305	167	22752m	12.02			
34) Dibenzothiophene	24.173	184	16305	7.16		#	71
35) 4-Methyldibenzothiophene	25.669	198	13584	8.66			100
36) 2/3-Methyldibenzothiop...	25.962	198	7308	4.66			100
37) 1-Methyldibenzothiophene	26.298	198	8265	5.27			100
38) C2-Dibenzothiophenes	27.080	212	45594m	20.03			
39) C3-Dibenzothiophenes	0.000		0	N.D.	d		
40) C4-Dibenzothiophenes	0.000		0	N.D.	d		
41) Phenanthrene	24.592	178	126970	57.74			98
42) Anthracene	0.000		0	N.D.	d		
43) 3-Methylphenanthrene	26.256	192	12651m	7.16			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70123\
Data File : ARC2058.D
Acq On : 3 Oct 2014 9:34 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-009(NB)092914
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Oct 05 12:09:48 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	26.353	192	13733	7.78		90
45) 2-Methylanthracene	26.521	192	121232	68.64		93
46) 4/9-Methylphenanthrene	26.633	192	11461m	6.49		
47) 1-Methylphenanthrene	26.717	192	7618m	4.31		
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	28.696	202	24174	9.14		100
59) Pyrene	29.267	202	11001	3.82		100
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	33.565	228	3048	1.11		92
68) Chrysene/Triphenylene	33.642	228	11797m	4.28		
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\MS70123\
Data File : ARC2058.D
Acq On : 3 Oct 2014 9:34 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-009(NB)092914
Misc :
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Quant Time: Oct 05 12:09:48 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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\MS70123\
Data File : ARC2058.D
Acq On : 3 Oct 2014 9:34 am
Operator : ECM(YMIAO)
Sample : SHN-Cove-009(NB)092914
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Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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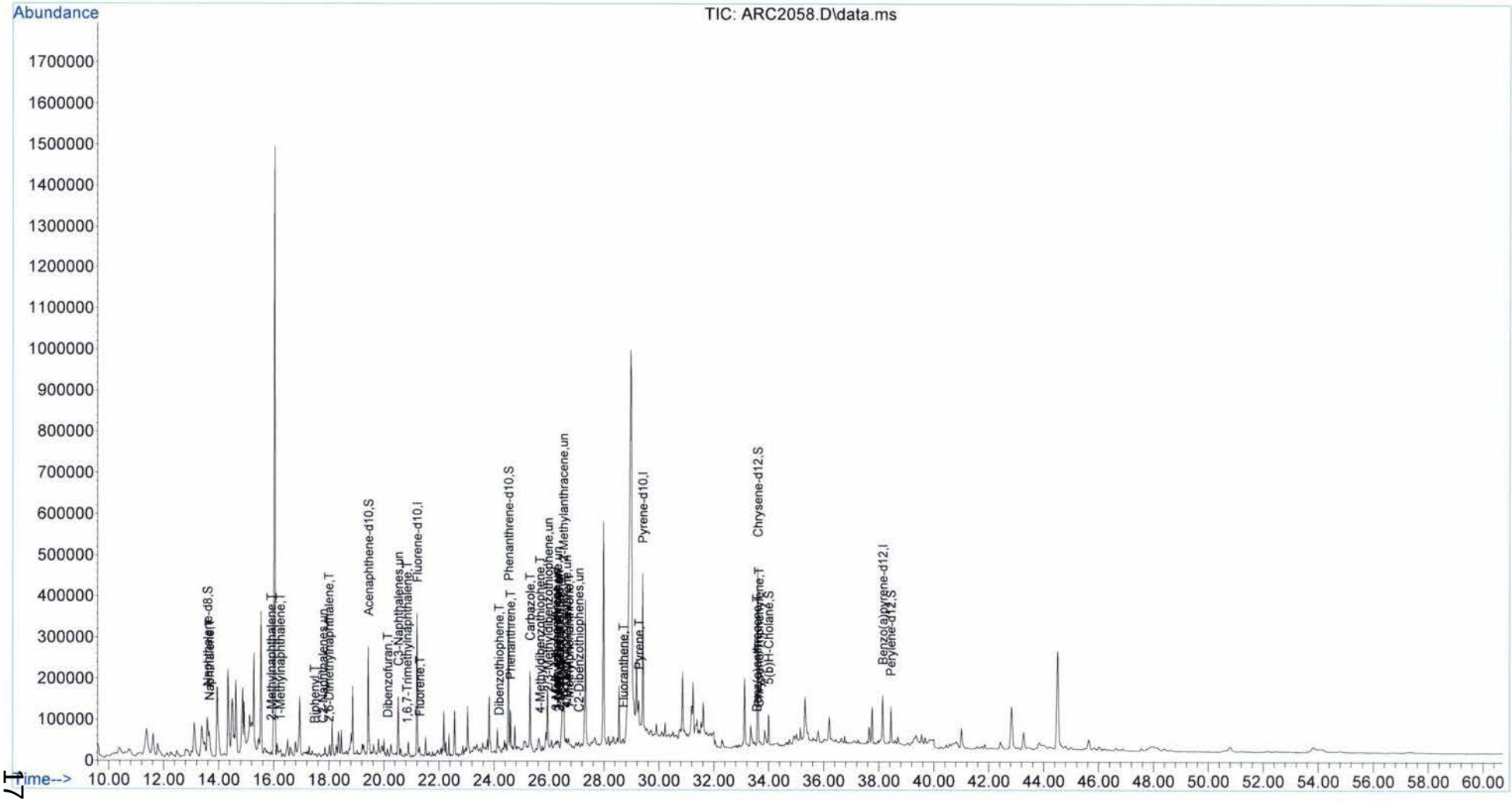


Aliphatic Hydrocarbons/
Total Petroleum Hydrocarbons/
Initial Calibration Data
and
Initial Calibration Verification Data

TPH/Aliphatic
ICAL
FID1C08FRONT082514.M

GC/FID-1 FRONT

Calibration Status Report HP5890

Method Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Method File : FID1C08FRONT082514.M
Title : C8 - C40 aliphatic
Last Update : Mon Aug 25 10:58:36 2014
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	1	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238C.D
2	2	10	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238D.D
3	3	25	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238E.D
4	4	40	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238F.D
5	5	50	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238G.D
6	6	100	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID10238H.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Aug 25 09:29 2014	Aug 25 09:29 2014	22-Aug-2014, 15:10:28
2	2	Aug 25 09:38 2014	Aug 25 09:37 2014	22-Aug-2014, 16:20:38
3	3	Aug 25 09:44 2014	Aug 25 09:43 2014	22-Aug-2014, 17:30:56
4	4	Aug 25 09:52 2014	Aug 25 09:51 2014	22-Aug-2014, 18:41:17
5	5	Aug 25 10:17 2014	Aug 25 10:16 2014	22-Aug-2014, 19:51:32
6	6	Aug 25 10:47 2014	Aug 25 10:47 2014	22-Aug-2014, 21:01:54

FID1C08FRONT082514.M Mon Aug 25 10:58:57 2014

Response Factor Report HP5890

Method Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Method File : FID1C08FRONT082514.M
Title : C8 - C40 aliphatic
Last Update : Mon Aug 25 10:58:36 2014
Response Via : Initial Calibration

Calibration Files
1 =FID10238C.D 2 =FID10238D.D 3 =FID10238E.D
4 =FID10238F.D 5 =FID10238G.D 6 =FID10238H.D

8/25/14

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	n-hexadecane-d34	ISTD							
2)		n-C8	1.033	0.971	0.968	0.953	0.950	0.959	0.972	3.18
3)		n-C9	1.090	1.016	1.010	1.001	1.000	1.001	1.020	3.43
4)		n-C10	1.128	1.069	1.058	1.050	1.047	1.045	1.066	2.94
5)		n-C11	1.156	1.103	1.093	1.080	1.078	1.073	1.097	2.81
6)	S	n-dodecane-d26	1.033	0.968	0.954	0.955	0.991	0.933	0.972	3.62
7)		n-C12	1.223	1.149	1.142	1.128	1.126	1.117	1.147	3.37
8)		i-13	1.247	1.171	1.163	1.147	1.145	1.133	1.168	3.51
9)		i-14	1.259	1.193	1.183	1.164	1.165	1.149	1.185	3.33
10)		n-C13	1.247	1.171	1.163	1.147	1.145	1.133	1.168	3.51
11)		i-15	1.312	1.213	1.203	1.184	1.184	1.164	1.210	4.38
12)		n-C14	1.259	1.193	1.183	1.164	1.165	1.149	1.185	3.33
13)		i-16	1.301	1.222	1.214	1.190	1.192	1.169	1.215	3.82
14)		n-C15	1.312	1.213	1.203	1.184	1.184	1.164	1.210	4.38
15)		n-C16	1.301	1.222	1.214	1.190	1.192	1.169	1.215	3.82
16)	I	5a-androstane	ISTD							
17)		i-18	1.023	0.966	0.966	0.952	0.944	0.940	0.965	3.17
18)		n-C17	1.055	0.977	0.975	0.959	0.952	0.949	0.978	4.06
19)		Pristane	1.033	0.972	0.968	0.955	0.948	0.944	0.970	3.35
20)		n-C18	1.023	0.966	0.966	0.952	0.944	0.940	0.965	3.16
21)		Phytane	0.899	0.835	0.836	0.824	0.819	0.812	0.838	3.77
22)		n-C19	1.015	0.960	0.959	0.944	0.938	0.931	0.958	3.16
23)	S	n-eicosane-d42	0.877	0.818	0.813	0.813	0.840	0.791	0.825	3.61
24)		n-C20	1.022	0.970	0.971	0.955	0.950	0.940	0.968	2.99
25)		n-C21	1.061	0.990	0.993	0.976	0.971	0.964	0.993	3.57
26)		n-C22	1.040	0.976	0.977	0.960	0.957	0.944	0.976	3.46
27)		n-C23	1.031	0.970	0.970	0.953	0.950	0.939	0.969	3.38
28)		n-C24	1.036	0.963	0.966	0.947	0.945	0.932	0.965	3.83
29)		n-C25	1.023	0.958	0.959	0.941	0.939	0.925	0.958	3.59
30)		n-C26	1.028	0.971	0.970	0.951	0.951	0.935	0.968	3.38
31)		n-C27	1.018	0.956	0.954	0.936	0.935	0.918	0.953	3.67
32)		n-C28	1.021	0.948	0.947	0.930	0.931	0.911	0.948	4.03
33)		n-C29	0.993	0.937	0.937	0.920	0.917	0.899	0.934	3.45
34)	S	n-triacontane...	0.765	0.728	0.722	0.719	0.747	0.696	0.730	3.26
35)		n-C30	0.993	0.934	0.932	0.916	0.921	0.895	0.932	3.54
36)		n-C31	0.962	0.908	0.902	0.887	0.889	0.866	0.902	3.61
37)		n-C32	0.976	0.922	0.912	0.899	0.901	0.878	0.914	3.65
38)		n-C33	0.916	0.872	0.864	0.852	0.853	0.829	0.864	3.38
39)		n-C34	0.923	0.892	0.883	0.873	0.872	0.847	0.882	2.84
40)		n-C35	0.930	0.891	0.877	0.866	0.868	0.842	0.879	3.38
41)		n-C36	0.935	0.918	0.908	0.894	0.898	0.872	0.904	2.42
42)		n-C37	0.884	0.868	0.860	0.847	0.849	0.825	0.856	2.36
43)		n-C38	0.866	0.878	0.868	0.856	0.857	0.835	0.860	1.69
44)		n-C39	0.866	0.870	0.863	0.853	0.854	0.832	0.856	1.58
45)		n-C40	0.846	0.862	0.862	0.849	0.854	0.831	0.850	1.39
46)		TPH	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
47)		TRH1	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
48)		TRH2	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
49)		TRH3	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
50)		TRH4	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
51)		TRH5	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
52)		TRH6	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10

53)	GRO	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
54)	DRO	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10
55)	RRO	0.975	0.923	0.920	0.907	0.904	0.894	0.921	3.10

(#) = Out of Range

FID1C08FRONT082514.M Mon Aug 25 10:58:39 2014

Area for TPH Calculations

Last Calibration Update Mon Aug 25 10:47:52 2014
Quant Method FID1C08FRONT082514.M

	Level 1 FID10238C.D	Level 2 FID10238D.D	Level 3 FID10238E.D	Level 4 FID10238F.D	Level 5 FID10238G.D	Level 6 FID10238H.D
n-C8	6402	48514	127197	193756	245321	491962
n-C9	6771	50842	132980	203949	258237	513805
n-C10	6971	53319	138602	212975	269760	535122
n-C11	7158	55105	143430	219456	278257	550502
n-C12	7560	57281	149628	228878	290030	572080
n-C13	7744	58674	153165	233778	296394	583192
n-C14	7786	59471	155075	236023	299974	588292
n-C15	8138	60655	158143	240711	305883	597622
n-C16	8059	60997	159216	241711	307510	599639
n-C17	8275	62224	161998	245442	312301	608072
Pristane	8078	61774	160516	243906	310221	603801
n-C18	8026	61494	160526	243636	309666	602220
Phytane	7241	54608	142710	216621	275846	534602
n-C19	8207	63046	164400	249352	317236	615644
n-C20	7996	61621	161051	244058	310890	601436
n-C21	8314	62985	164880	249620	318322	617139
n-C22	8121	61934	161845	244917	312715	603119
n-C23	8057	61551	160837	243314	310706	599912
n-C24	8103	61169	160169	242036	309345	596040
n-C25	8002	60869	159112	240481	307467	591663
n-C26	8033	61608	160703	242633	310652	597149
n-C27	7955	60663	158010	238638	305462	586732
n-C28	7967	60141	156768	236899	303843	581652
n-C29	7752	59435	155115	234460	299566	574121
n-C30	7756	59252	154287	233656	300840	571548
n-C31	7714	59099	153299	232156	298086	567904
n-C32	7644	58623	151402	229887	295348	562266
n-C33	7143	55223	142947	216925	278264	528468
n-C34	7206	56634	146202	222609	285069	541071
n-C35	7253	56440	145032	220557	283203	537074
n-C36	7301	58180	150184	227882	293172	556026
n-C37	7109	56713	146700	222420	285593	542515
n-C38	6782	55870	144026	218934	280844	534886
n-C39	6784	55367	143304	218297	280102	533119
n-C40	6599	54689	142633	216299	278700	530166
Average Area (use for TPH, TRPH, GRO, DRO, RRO)	7600	58459	152174	231053	294995	570016
n-C36/n-C20	0.91	0.94	0.93	0.93	0.94	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:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238C.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 15:10:28
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:29:22 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Aug 20 09:30:53 2014
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	12.620	247292	50.000	ug/mlm
16)	I	5a-androstane	17.713	312173	50.040	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.339	6385	1.387	ug/mlm
23)	S	n-eicosane-d42	17.176	6800	1.347	ug/mlm
34)	S	n-triacontane-d62	29.063	6053	1.297	ug/mlm
Target Compounds						
2)		n-C8	3.213	6402	1.353	ug/mlm
3)		n-C9	4.508	6771	1.395	ug/mlm
4)		n-C10	5.919	6971	1.387	ug/mlm
5)		n-C11	7.278	7158	1.397	ug/mlm
7)		n-C12	8.545	7560	1.391	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	9.722	7744	1.399	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	10.820	7786	1.377	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	11.853	8138	1.392	ug/mlm
15)		n-C16	12.864	8059	1.370	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	13.939	8275	1.424	ug/mlm
19)		Pristane	14.054	8078	1.357	ug/mlm
20)		n-C18	15.088	8026	1.379	ug/mlm
21)		Phytane	15.248	7241	1.399	ug/mlm
22)		n-C19	16.305	8207	1.411	ug/mlm
24)		n-C20	17.568	7996	1.336	ug/mlm
25)		n-C21	18.857	8314	1.377	ug/mlm
26)		n-C22	20.153	8121	1.349	ug/mlm
27)		n-C23	21.438	8057	1.337	ug/mlm
28)		n-C24	22.698	8103	1.346	ug/mlm
29)		n-C25	23.933	8002	1.339	ug/mlm
30)		n-C26	25.136	8033	1.329	ug/mlm
31)		n-C27	26.302	7955	1.326	ug/mlm
32)		n-C28	27.436	7967	1.340	ug/mlm
33)		n-C29	28.532	7752	1.309	ug/mlm
35)		n-C30	29.595	7756	1.307	ug/mlm
36)		n-C31	30.627	7714	1.337	ug/mlm
37)		n-C32	31.631	7644	1.303	ug/mlm
38)		n-C33	32.602	7143	1.285	ug/mlm
39)		n-C34	33.546	7206	1.259	ug/mlm
40)		n-C35	34.508	7253	1.290	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238C.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 15:10:28
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:29:22 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Aug 20 09:30:53 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.589	7301	1.256	ug/mlm
42)	n-C37	36.828	7109	1.296	ug/mlm
43)	n-C38	38.277	6782	1.228	ug/mlm
44)	n-C39	39.971	6784	1.235	ug/mlm
45)	n-C40	41.968	6599	1.225	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

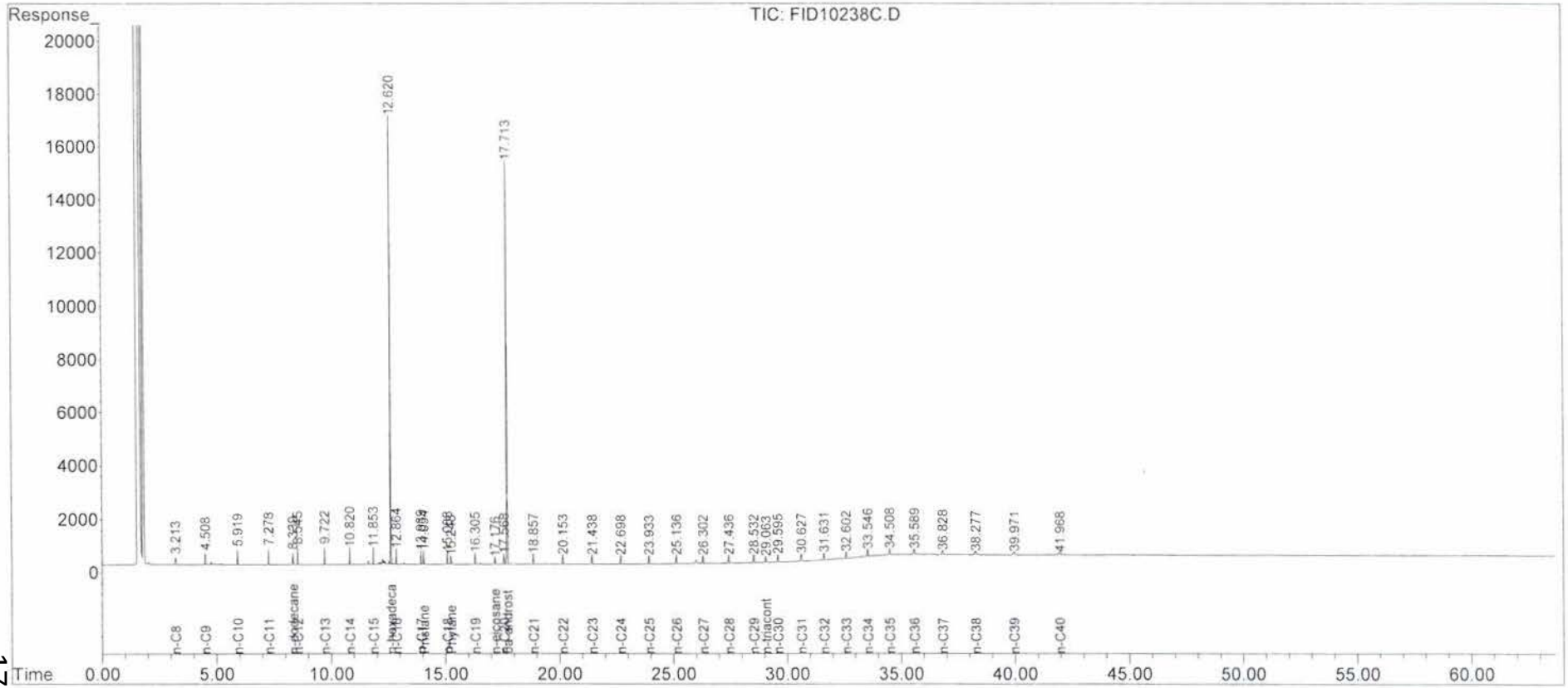
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238C.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 15:10:28
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:29:22 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Aug 20 09:30:53 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238D.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 16:20:38
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:37:53 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:29:41 2014
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	12.621	249297	50.000	ug/mlm
16)	I	5a-androstane	17.712	316991	50.040	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.338	48240	10.187	ug/mlm
23)	S	n-eicosane-d42	17.178	51498	9.943	ug/mlm
34)	S	n-triacontane-d62	29.063	46837	9.960	ug/mlm
Target Compounds						
2)		n-C8	3.212	48514	10.245	ug/mlm
3)		n-C9	4.506	50841	10.302	ug/mlm
4)		n-C10	5.918	53319	10.393	ug/mlm
5)		n-C11	7.278	55105	10.423	ug/mlm
7)		n-C12	8.544	57281	10.281	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	9.721	58674	10.280	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	10.820	59471	10.242	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	11.853	60655	10.128	ug/mlm
15)		n-C16	12.864	60997	10.117	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	13.939	62224	10.305	ug/mlm
19)		Pristane	14.054	61774	10.157	ug/mlm
20)		n-C18	15.089	61494	10.266	ug/mlm
21)		Phytane	15.249	54608	10.365	ug/mlm
22)		n-C19	16.307	63046	10.545	ug/mlm
24)		n-C20	17.570	61621	10.143	ug/mlm
25)		n-C21	18.858	62985	10.088	ug/mlm
26)		n-C22	20.153	61934	10.066	ug/mlm
27)		n-C23	21.436	61551	10.044	ug/mlm
28)		n-C24	22.699	61169	10.001	ug/mlm
29)		n-C25	23.934	60869	10.013	ug/mlm
30)		n-C26	25.135	61608	10.011	ug/mlm
31)		n-C27	26.301	60663	9.968	ug/mlm
32)		n-C28	27.435	60141	9.931	ug/mlm
33)		n-C29	28.532	59435	9.924	ug/mlm
35)		n-C30	29.598	59252	9.886	ug/mlm
36)		n-C31	30.628	59099	10.172	ug/mlm
37)		n-C32	31.628	58623	9.946	ug/mlm
38)		n-C33	32.602	55223	9.913	ug/mlm
39)		n-C34	33.549	56634	9.964	ug/mlm
40)		n-C35	34.505	56440	10.021	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238D.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 16:20:38
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:37:53 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:29:41 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.587	58180	10.045	ug/mlm
42)	n-C37	36.832	56713	10.393	ug/mlm
43)	n-C38	38.271	55870	10.221	ug/mlm
44)	n-C39	39.976	55367	10.200	ug/mlm
45)	n-C40	41.959	54689	10.178	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

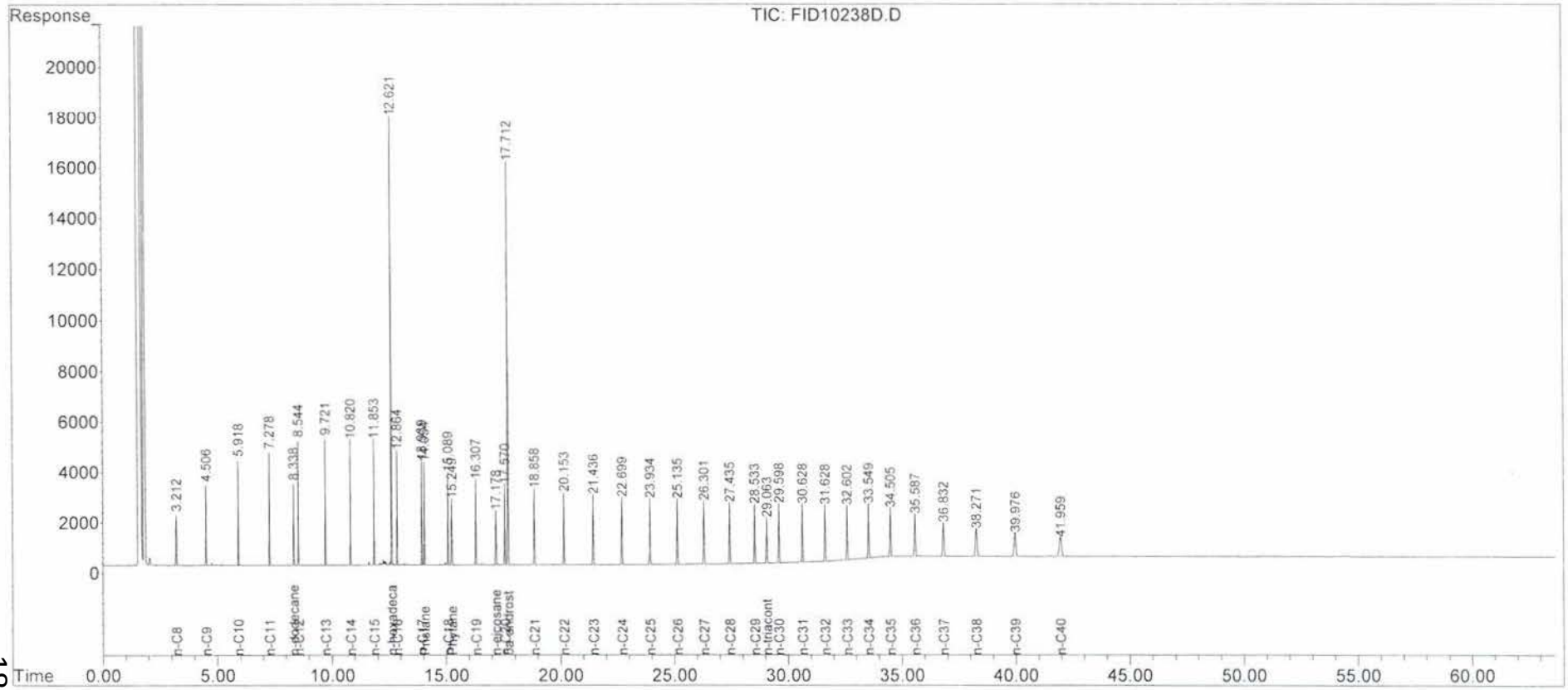
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238D.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 16:20:38
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:37:53 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:29:41 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238E.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 17:30:56
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:43:59 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:37:59 2014
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	12.621	262074	50.000	ug/mlm
16)	I 5a-androstane	17.713	330976	50.040	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.340	125033	24.905	ug/mlm
23)	S n-eicosane-d42	17.179	133676	24.660	ug/mlm
34)	S n-triacontane-d62	29.064	121216	24.819	ug/mlm
	Target Compounds				
2)	n-C8	3.212	127197	25.378	ug/mlm
3)	n-C9	4.507	132980	25.367	ug/mlm
4)	n-C10	5.920	138602	25.376	ug/mlm
5)	n-C11	7.280	143430	25.468	ug/mlm
7)	n-C12	8.546	149628	25.322	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	9.722	153165	25.367	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.821	155075	25.217	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.855	158143	25.046	ug/mlm
15)	n-C16	12.865	159216	25.055	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.940	161998	25.506	ug/mlm
19)	Pristane	14.056	160516	25.230	ug/mlm
20)	n-C18	15.092	160526	25.520	ug/mlm
21)	Phytane	15.248	142710	25.930	ug/mlm
22)	n-C19	16.309	164400	26.230	ug/mlm
24)	n-C20	17.572	161051	25.334	ug/mlm
25)	n-C21	18.860	164880	25.249	ug/mlm
26)	n-C22	20.156	161845	25.151	ug/mlm
27)	n-C23	21.440	160837	25.120	ug/mlm
28)	n-C24	22.700	160169	25.090	ug/mlm
29)	n-C25	23.934	159112	25.084	ug/mlm
30)	n-C26	25.138	160703	25.029	ug/mlm
31)	n-C27	26.306	158010	24.903	ug/mlm
32)	n-C28	27.437	156768	24.826	ug/mlm
33)	n-C29	28.537	155115	24.873	ug/mlm
35)	n-C30	29.598	154287	24.772	ug/mlm
36)	n-C31	30.633	153299	25.402	ug/mlm
37)	n-C32	31.633	151402	24.747	ug/mlm
38)	n-C33	32.605	142947	24.733	ug/mlm
39)	n-C34	33.552	146202	24.822	ug/mlm
40)	n-C35	34.507	145032	24.782	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238E.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 17:30:56
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:43:59 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:37:59 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.590	150184	25.003	ug/mlm
42)	n-C37	36.836	146700	25.914	ug/mlm
43)	n-C38	38.279	144026	25.373	ug/mlm
44)	n-C39	39.983	143304	25.437	ug/mlm
45)	n-C40	41.966	142633	25.560	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

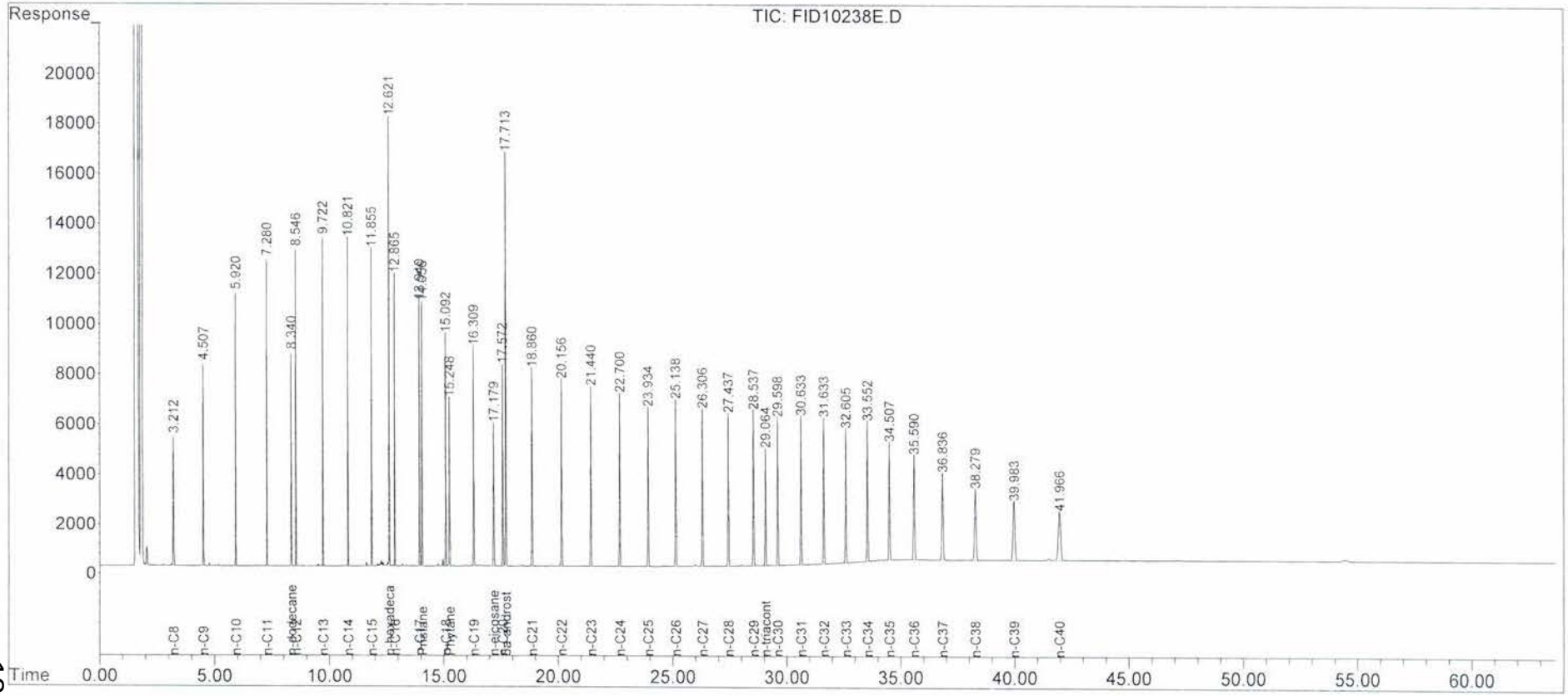
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238E.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 17:30:56
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:43:59 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:37:59 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238F.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 18:41:17
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:51:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:44:06 2014
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	12.621	253536	50.000	ug/mlm
16) I	5a-androstane	17.713	318576	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.340	193746	39.731	ug/mlm
23) S	n-eicosane-d42	17.181	205736	39.316	ug/mlm
34) S	n-triacontane-d62	29.069	185857	39.649	ug/mlm
	Target Compounds				
2)	n-C8	3.212	193756	39.744	ug/mlm
3)	n-C9	4.508	203949	40.006	ug/mlm
4)	n-C10	5.921	212975	40.082	ug/mlm
5)	n-C11	7.280	219456	40.053	ug/mlm
7)	n-C12	8.546	228878	39.861	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	9.723	233778	39.903	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.822	236023	39.572	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.856	240711	39.382	ug/mlm
15)	n-C16	12.866	241711	39.298	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.941	245442	39.925	ug/mlm
19)	Pristane	14.057	243906	39.763	ug/mlm
20)	n-C18	15.093	243636	40.056	ug/mlm
21)	Phytane	15.253	216621	40.798	ug/mlm
22)	n-C19	16.312	249352	41.202	ug/mlm
24)	n-C20	17.573	244058	39.788	ug/mlm
25)	n-C21	18.863	249620	39.620	ug/mlm
26)	n-C22	20.156	244917	39.475	ug/mlm
27)	n-C23	21.442	243314	39.436	ug/mlm
28)	n-C24	22.703	242036	39.346	ug/mlm
29)	n-C25	23.939	240481	39.354	ug/mlm
30)	n-C26	25.140	242633	39.249	ug/mlm
31)	n-C27	26.310	238638	39.119	ug/mlm
32)	n-C28	27.439	236899	39.021	ug/mlm
33)	n-C29	28.537	234460	39.127	ug/mlm
35)	n-C30	29.604	233656	39.079	ug/mlm
36)	n-C31	30.636	232156	40.090	ug/mlm
37)	n-C32	31.636	229887	39.183	ug/mlm
38)	n-C33	32.609	216925	39.133	ug/mlm
39)	n-C34	33.555	222609	39.415	ug/mlm
40)	n-C35	34.513	220557	39.280	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238F.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 18:41:17
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:51:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:44:06 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.593	227882	39.523	ug/mlm
42)	n-C37	36.839	222420	40.872	ug/mlm
43)	n-C38	38.287	218934	40.117	ug/mlm
44)	n-C39	39.982	218297	40.269	ug/mlm
45)	n-C40	41.983	216299	40.215	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

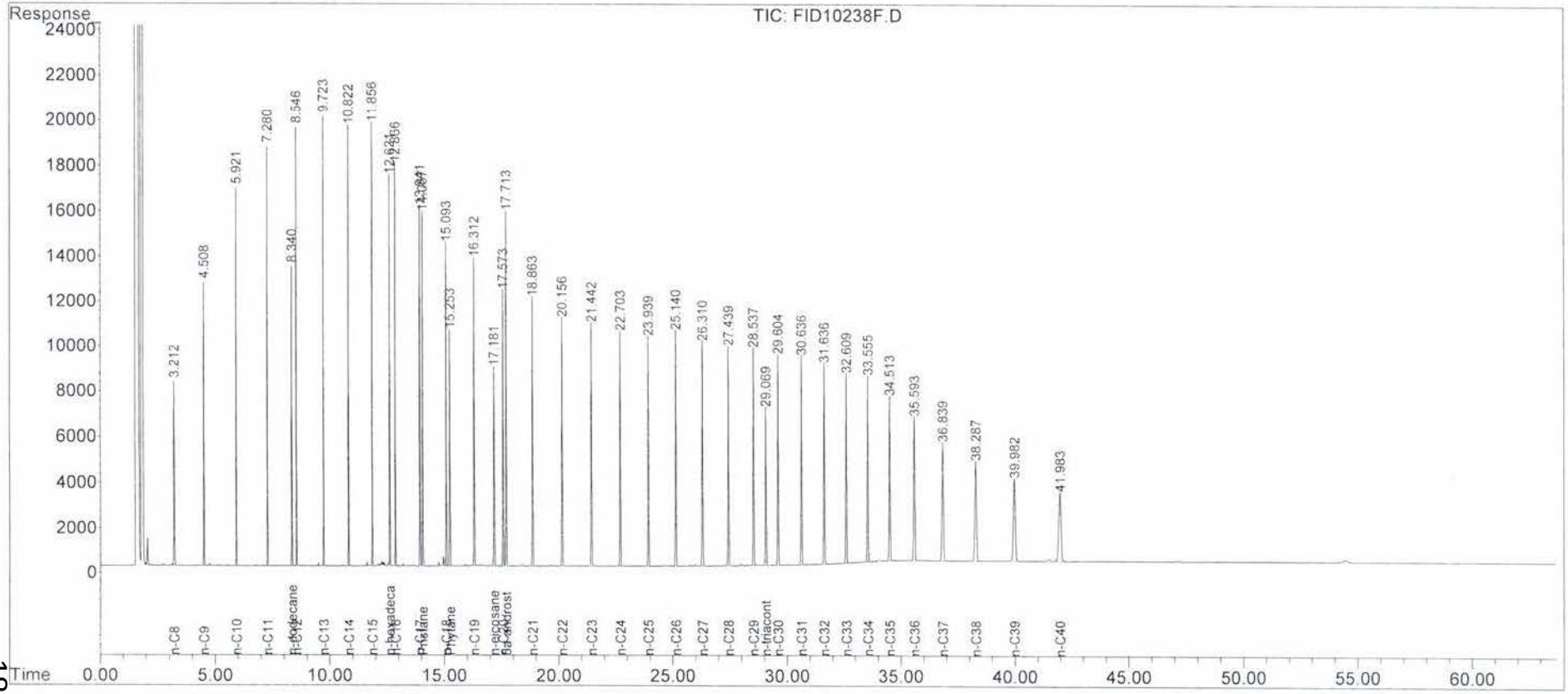
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238F.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 18:41:17
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 09:51:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:44:06 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238G.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 19:51:32
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:16:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:52:00 2014
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	12.621	257592	50.000 ug/mlm
16) I	5a-androstane	17.713	326515	50.040 ug/mlm
	System Monitoring Compounds			
6) S	n-dodecane-d26	8.340	255385	51.358 ug/mlm
23) S	n-eicosane-d42	17.181	272282	50.667 ug/mlm
34) S	n-triacontane-d62	29.065	247304	51.674 ug/mlm
	Target Compounds			
2)	n-C8	3.213	245321	49.425 ug/mlm
3)	n-C9	4.508	258237	49.615 ug/mlm
4)	n-C10	5.921	269760	49.688 ug/mlm
5)	n-C11	7.280	278257	49.770 ug/mlm
7)	n-C12	8.547	290030	49.480 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	9.724	296394	49.636 ug/mlm
11)	i-15	0.000	0	N.D. ug/mld
12)	n-C14	10.823	299974	49.353 ug/mlm
13)	i-16	0.000	0	N.D. ug/mld
14)	n-C15	11.856	305883	49.195 ug/mlm
15)	n-C16	12.867	307510	49.199 ug/mlm
17)	i-18	0.000	0	N.D. ug/mld
18)	n-C17	13.943	312301	49.320 ug/mlm
19)	Pristane	14.059	310221	49.211 ug/mlm
20)	n-C18	15.093	309666	49.459 ug/mlm
21)	Phytane	15.254	275846	50.597 ug/mlm
22)	n-C19	16.312	317236	50.970 ug/mlm
24)	n-C20	17.576	310890	49.349 ug/mlm
25)	n-C21	18.864	318322	49.245 ug/mlm
26)	n-C22	20.157	312715	49.154 ug/mlm
27)	n-C23	21.443	310706	49.149 ug/mlm
28)	n-C24	22.707	309345	49.103 ug/mlm
29)	n-C25	23.940	307467	49.124 ug/mlm
30)	n-C26	25.140	310652	49.094 ug/mlm
31)	n-C27	26.307	305462	48.959 ug/mlm
32)	n-C28	27.439	303843	48.939 ug/mlm
33)	n-C29	28.540	299566	48.888 ug/mlm
35)	n-C30	29.605	300840	49.279 ug/mlm
36)	n-C31	30.636	298086	50.394 ug/mlm
37)	n-C32	31.638	295348	49.305 ug/mlm
38)	n-C33	32.609	278264	49.148 ug/mlm
39)	n-C34	33.554	285069	49.401 ug/mlm
40)	n-C35	34.514	283203	49.330 ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238G.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 19:51:32
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:16:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:52:00 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.598	293172	49.705	ug/mlm
42)	n-C37	36.839	285593	51.240	ug/mlm
43)	n-C38	38.280	280844	50.191	ug/mlm
44)	n-C39	39.975	280102	50.340	ug/mlm
45)	n-C40	41.984	278700	50.476	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

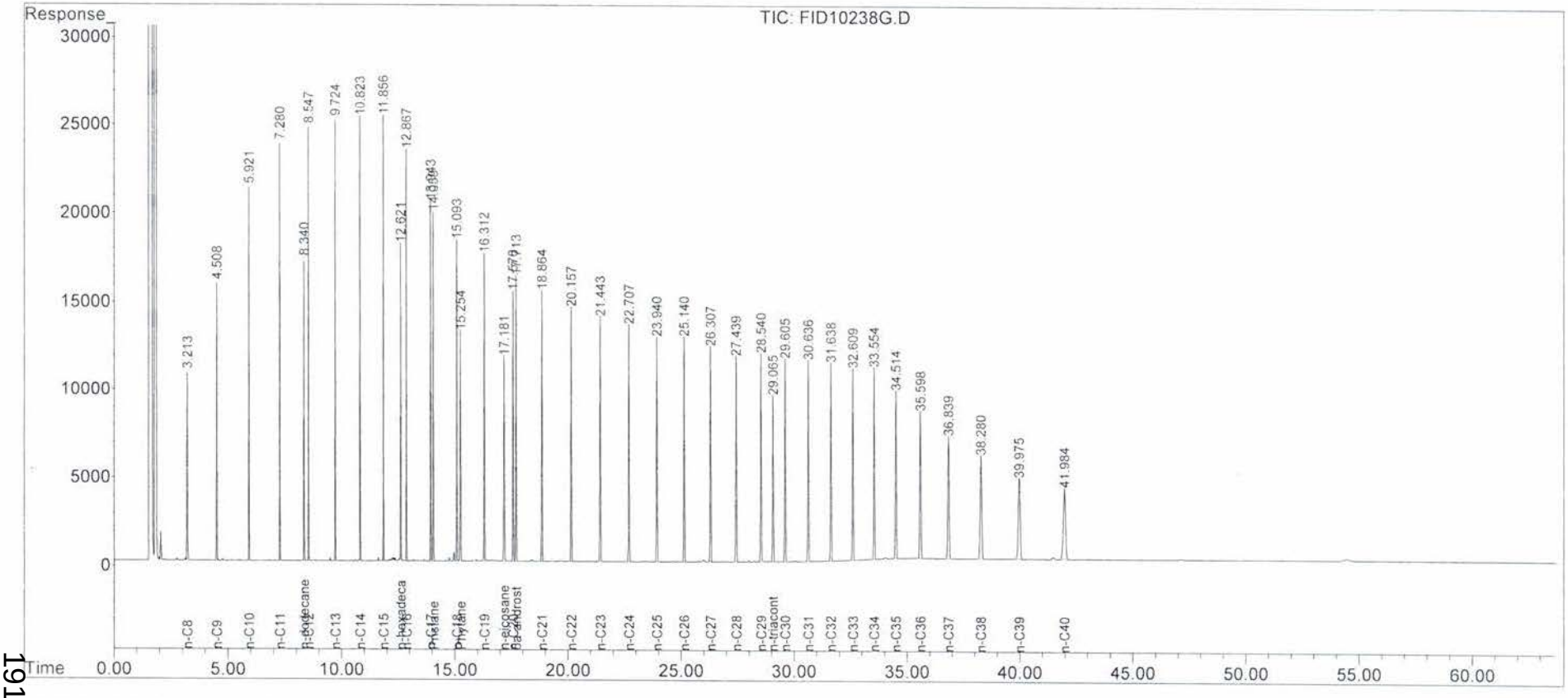
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238G.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 19:51:32
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:16:54 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 09:52:00 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238H.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 21:01:54
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:47:24 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:17:03 2014
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	12.620	256096	50.000	ug/mlm
16) I	5a-androstane	17.714	319081	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.343	477944	96.243	ug/mlm
23) S	n-eicosane-d42	17.185	501421	95.474	ug/mlm
34) S	n-triacontane-d62	29.072	450349	96.703	ug/mlm
	Target Compounds				
2)	n-C8	3.212	491962	99.276	ug/mlm
3)	n-C9	4.510	513805	98.815	ug/mlm
4)	n-C10	5.922	535122	98.483	ug/mlm
5)	n-C11	7.283	550502	98.407	ug/mlm
7)	n-C12	8.550	572080	97.624	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	9.727	583192	97.772	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.827	588292	97.102	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.860	597622	96.525	ug/mlm
15)	n-C16	12.872	599639	96.387	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.949	608072	97.967	ug/mlm
19)	Pristane	14.063	603801	97.873	ug/mlm
20)	n-C18	15.100	602220	98.192	ug/mlm
21)	Phytane	15.258	534602	100.277	ug/mlm
22)	n-C19	16.317	615644	101.086	ug/mlm
24)	n-C20	17.582	601436	97.622	ug/mlm
25)	n-C21	18.872	617139	97.695	ug/mlm
26)	n-C22	20.168	603119	97.038	ug/mlm
27)	n-C23	21.452	599912	97.205	ug/mlm
28)	n-C24	22.714	596040	96.940	ug/mlm
29)	n-C25	23.947	591663	96.917	ug/mlm
30)	n-C26	25.151	597149	96.778	ug/mlm
31)	n-C27	26.319	586732	96.522	ug/mlm
32)	n-C28	27.448	581652	96.149	ug/mlm
33)	n-C29	28.546	574121	96.273	ug/mlm
35)	n-C30	29.614	571548	96.065	ug/mlm
36)	n-C31	30.646	567904	98.583	ug/mlm
37)	n-C32	31.644	562266	96.360	ug/mlm
38)	n-C33	32.619	528468	95.824	ug/mlm
39)	n-C34	33.561	541071	96.208	ug/mlm
40)	n-C35	34.521	537074	95.883	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238H.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 21:01:54
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:47:24 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:17:03 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.608	556026	96.503	ug/mlm
42)	n-C37	36.849	542515	99.595	ug/mlm
43)	n-C38	38.302	534886	97.710	ug/mlm
44)	n-C39	39.998	533119	97.867	ug/mlm
45)	n-C40	42.003	530166	98.004	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

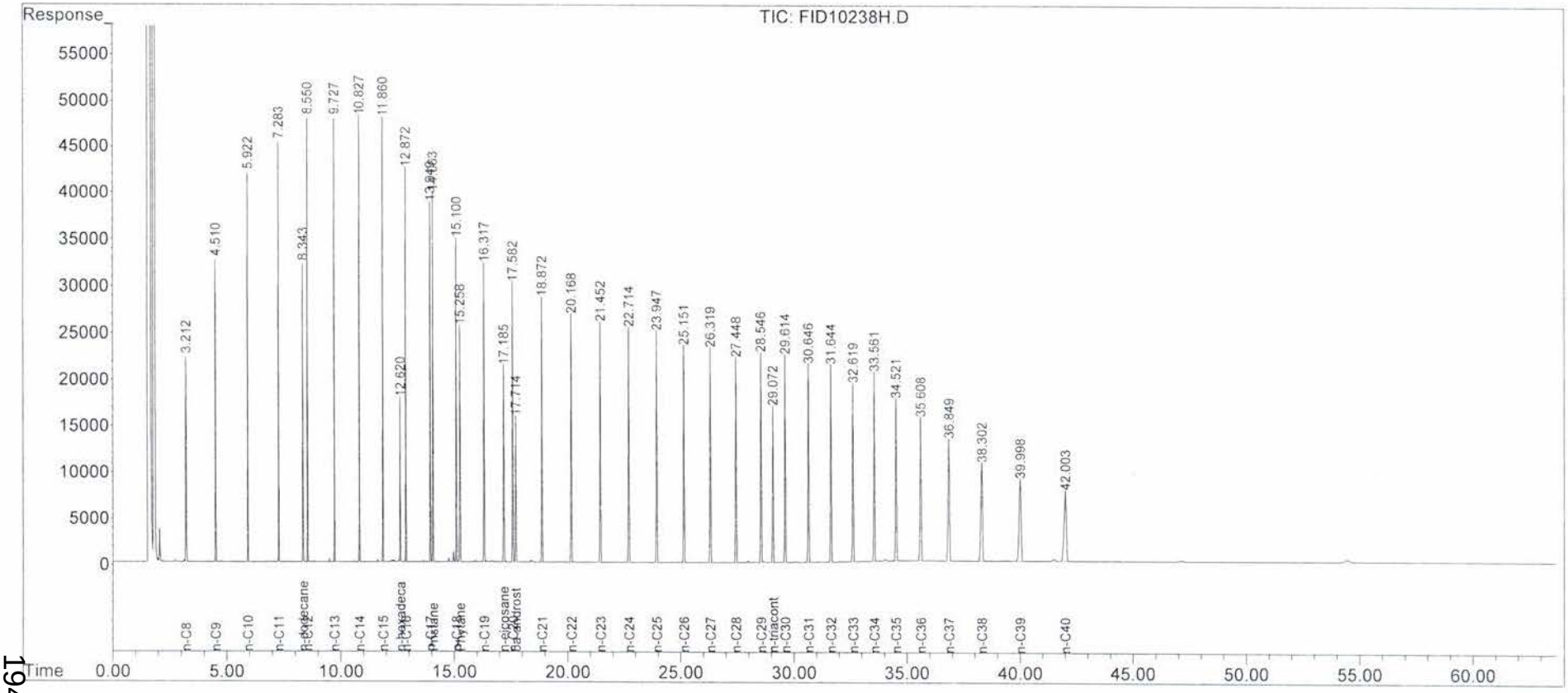
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238H.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 21:01:54
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 10:47:24 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:17:03 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	94	0.00
2		n-C8	0.972	1.063	-9.4	103	0.00
3		n-C9	1.020	1.141	-11.9	106	0.00
4		n-C10	1.066	1.206	-13.1	107	0.00
5		n-C11	1.097	1.253	-14.2	108	0.00
6	S	n-dodecane-d26	0.972	0.954	1.9	94	0.00
7		n-C12	1.147	1.284	-11.9	105	0.00
10		n-C13	1.168	1.308	-12.0	105	0.00
12		n-C14	1.185	1.338	-12.9	106	0.00
14		n-C15	1.210	1.370	-13.2	107	0.00
15		n-C16	1.215	1.393	-14.7	108	0.00
16	I	5a-androstane	1.000	1.000	0.0	94	0.00
18		n-C17	0.978	1.099	-12.4	106	0.00
19		Pristane	0.970	1.090	-12.4	106	0.00
20		n-C18	0.965	1.103	-14.3	107	0.00
21		Phytane	0.838	0.829	1.1	93	0.00
22		n-C19	0.958	1.079	-12.6	106	0.00
23	S	n-eicosane-d42	0.825	0.828	-0.4	96	0.00
24		n-C20	0.968	1.102	-13.8	107	0.00
25		n-C21	0.993	1.118	-12.6	106	0.00
26		n-C22	0.976	1.112	-13.9	107	0.00
27		n-C23	0.969	1.099	-13.4	107	0.00
28		n-C24	0.965	1.088	-12.7	106	-0.01
29		n-C25	0.958	1.000	-4.4	98	-0.01
30		n-C26	0.968	1.097	-13.3	106	-0.01
31		n-C27	0.953	1.087	-14.1	107	0.00
32		n-C28	0.948	1.078	-13.7	107	-0.01
33		n-C29	0.934	1.067	-14.2	107	-0.01
34	S	n-triacontane-d62	0.730	0.737	-1.0	96	-0.01
35		n-C30	0.932	1.066	-14.4	108	0.00
36		n-C31	0.902	1.001	-11.0	104	0.00
37		n-C32	0.914	1.019	-11.5	105	-0.01
38		n-C33	0.864	0.962	-11.3	105	-0.01
39		n-C34	0.882	0.988	-12.0	105	-0.01
40		n-C35	0.879	0.955	-8.6	102	-0.02
41		n-C36	0.904	0.980	-8.4	101	-0.01
42		n-C37	0.856	0.829	3.2	91	-0.02
43		n-C38	0.860	0.813	5.5	88	-0.02

44	n-C39	0.856	0.771	9.9	84	-0.03
45	n-C40	0.850	0.758	10.8	83	-0.05

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Mon Aug 25 11:08:11 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.620	245826	50.000	ug/mlm
16)	I 5a-androstane	17.711	311242	50.040	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.338	117242	24.524	ug/mlm
23)	S n-eicosane-d42	17.177	127944	24.924	ug/mlm
34)	S n-triacontane-d62	29.062	116307	25.633	ug/mlm
	Target Compounds				
2)	n-C8	3.212	130929	27.388	ug/mlm
3)	n-C9	4.506	140888	28.102	ug/mlm
4)	n-C10	5.918	148172	28.268	ug/mlm
5)	n-C11	7.278	154232	28.591	ug/mlm
7)	n-C12	8.545	157761	27.964	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	9.722	161501	28.132	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.821	164442	28.216	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.854	168908	28.394	ug/mlm
15)	n-C16	12.864	171383	28.694	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.939	171835	28.253	ug/mlm
19)	Pristane	14.055	169917	28.161	ug/mlm
20)	n-C18	15.090	172467	28.730	ug/mlm
21)	Phytane	15.251	133144	25.558	ug/mlm
22)	n-C19	16.307	174026	29.209	ug/mlm
24)	n-C20	17.571	171922	28.553	ug/mlm
25)	n-C21	18.859	174569	28.278	ug/mlm
26)	n-C22	20.154	173137	28.531	ug/mlm
27)	n-C23	21.439	171292	28.428	ug/mlm
28)	n-C24	22.701	169715	28.284	ug/mlm
29)	n-C25	23.933	155996	26.191	ug/mlm
30)	n-C26	25.134	170874	28.390	ug/mlm
31)	n-C27	26.304	169218	28.553	ug/mlm
32)	n-C28	27.434	167824	28.462	ug/mlm
33)	n-C29	28.533	166072	28.585	ug/mlm
35)	n-C30	29.598	166004	28.636	ug/mlm
36)	n-C31	30.630	159869	28.481	ug/mlm
37)	n-C32	31.630	159153	27.981	ug/mlm
38)	n-C33	32.602	149570	27.823	ug/mlm
39)	n-C34	33.548	153934	28.071	ug/mlm
40)	n-C35	34.503	148532	27.168	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.590	152414	27.096	ug/mlm
42)	n-C37	36.831	132975	24.987	ug/mlm
43)	n-C38	38.274	126886	23.715	ug/mlm
44)	n-C39	39.963	120492	22.624	ug/mlm
45)	n-C40	41.951	117946	22.296	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

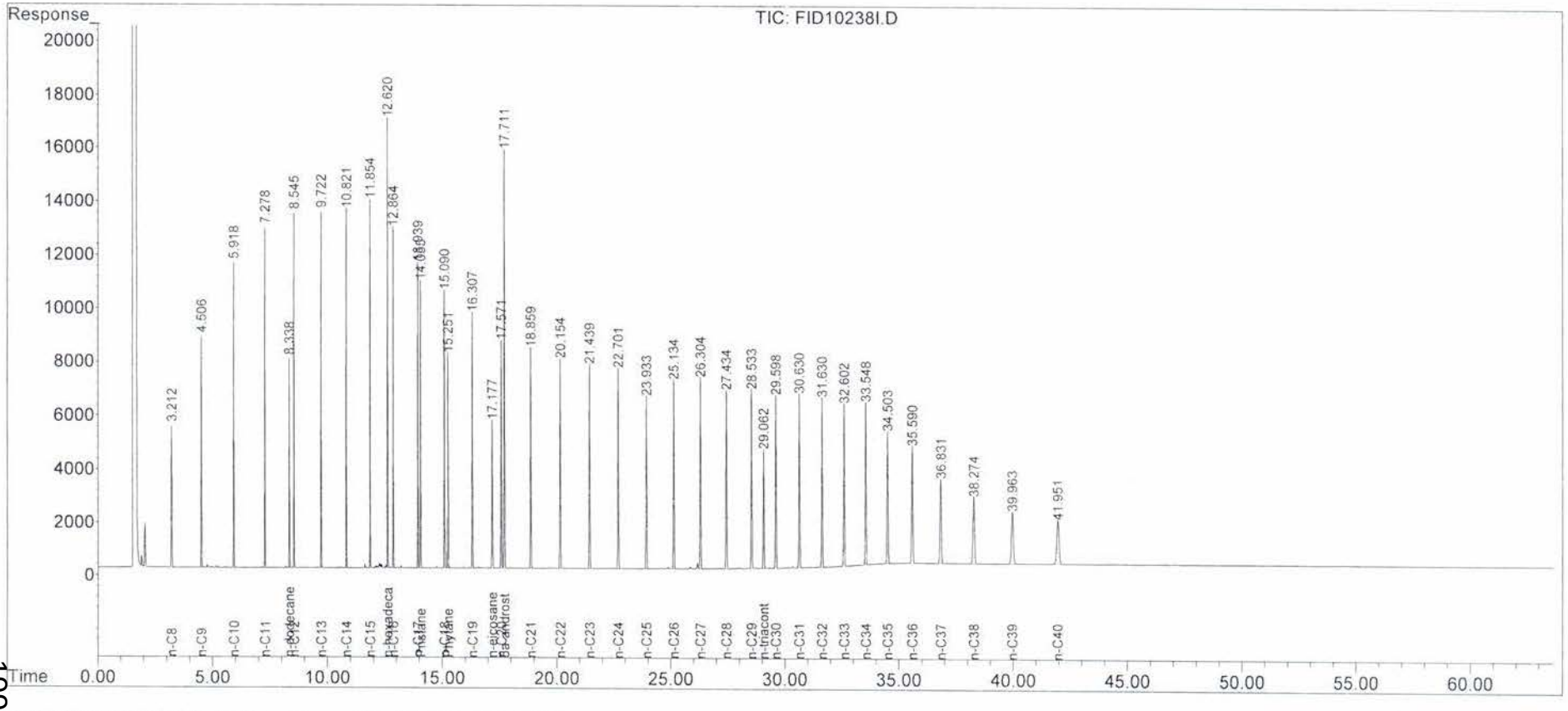
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238I.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 22:15:26
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:08:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	100	0.00
2		n-C8	0.972	0.954	1.9	98	0.00
3		n-C9	1.020	0.991	2.8	98	0.00
4		n-C10	1.066	1.038	2.6	98	0.00
5		n-C11	1.097	1.072	2.3	98	0.00
6	S	n-dodecane-d26	0.972	0.952	2.1	99	0.00
7		n-C12	1.147	1.121	2.3	98	0.00
10		n-C13	1.168	1.146	1.9	98	0.00
12		n-C14	1.185	1.169	1.4	98	0.00
14		n-C15	1.210	1.189	1.7	98	0.00
15		n-C16	1.215	1.202	1.1	99	0.00
16	I	5a-androstane	1.000	1.000	0.0	99	0.00
18		n-C17	0.978	0.971	0.7	99	0.00
19		Pristane	0.970	0.963	0.7	99	0.00
20		n-C18	0.965	0.960	0.5	99	0.00
21		Phytane	0.838	0.832	0.7	99	0.00
22		n-C19	0.958	0.953	0.5	99	0.00
23	S	n-eicosane-d42	0.825	0.827	-0.2	101	0.00
24		n-C20	0.968	0.965	0.3	99	0.00
25		n-C21	0.993	0.987	0.6	99	0.00
26		n-C22	0.976	0.971	0.5	99	0.00
27		n-C23	0.969	0.964	0.5	99	0.00
28		n-C24	0.965	0.958	0.7	98	-0.01
29		n-C25	0.958	0.952	0.6	98	-0.01
30		n-C26	0.968	0.961	0.7	98	-0.01
31		n-C27	0.953	0.945	0.8	98	-0.01
32		n-C28	0.948	0.940	0.8	98	-0.01
33		n-C29	0.934	0.928	0.6	98	0.00
34	S	n-triacontane-d62	0.730	0.732	-0.3	101	-0.01
35		n-C30	0.932	0.925	0.8	98	0.00
36		n-C31	0.902	0.898	0.4	99	-0.01
37		n-C32	0.914	0.909	0.5	99	0.00
38		n-C33	0.864	0.863	0.1	99	-0.01
39		n-C34	0.882	0.881	0.1	99	-0.01
40		n-C35	0.879	0.876	0.3	99	-0.02
41		n-C36	0.904	0.907	-0.3	99	-0.01
42		n-C37	0.856	0.858	-0.2	99	-0.03
43		n-C38	0.860	0.866	-0.7	99	-0.02

44	n-C39	0.856	0.864	-0.9	99	-0.02
45	n-C40	0.850	0.859	-1.1	99	-0.03

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.019	0.000	100.0#	0#	-8.73#
9	i-14	0.019	0.000	100.0#	0#	-9.44#
11	i-15	0.019	0.000	100.0#	0#	-10.60#
13	i-16	0.019	0.000	100.0#	0#	-11.51#
17	i-18	0.019	0.000	100.0#	0#	-13.42#
46	TPH	0.018	0.000	100.0#	0#	-28.36#
47	TRH1	0.018	0.000	100.0#	0#	-7.56#
48	TRH2	0.018	0.000	100.0#	0#	-15.54#
49	TRH3	0.018	0.000	100.0#	0#	-22.82#
50	TRH4	0.018	0.000	100.0#	0#	-27.72#
51	TRH5	0.018	0.000	100.0#	0#	-32.58#
52	TRH6	0.018	0.000	100.0#	0#	-43.77#
53	GRO	0.018	0.000	100.0#	0#	-5.14#
54	DRO	0.018	0.000	100.0#	0#	-13.97#
55	RRO	0.018	0.000	100.0#	0#	-32.22#

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

FID1C08FRONT082514.M Mon Aug 25 11:11:48 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.620	260844	50.000	ug/mlm
16) I	5a-androstane	17.710	328127	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.338	124118	24.468	ug/mlm
23) S	n-eicosane-d42	17.178	134709	24.892	ug/mlm
34) S	n-triacontane-d62	29.062	121844	25.471	ug/mlm
	Target Compounds				
2)	n-C8	3.210	124773	24.597	ug/mlm
3)	n-C9	4.507	129846	24.408	ug/mlm
4)	n-C10	5.919	135430	24.350	ug/mlm
5)	n-C11	7.278	140010	24.460	ug/mlm
7)	n-C12	8.545	146263	24.433	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	9.722	150223	24.661	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.821	152487	24.658	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.854	155542	24.641	ug/mlm
15)	n-C16	12.865	156929	24.761	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.939	159971	24.949	ug/mlm
19)	Pristane	14.055	158314	24.888	ug/mlm
20)	n-C18	15.089	158120	24.984	ug/mlm
21)	Phytane	15.249	140789	25.635	ug/mlm
22)	n-C19	16.307	162012	25.793	ug/mlm
24)	n-C20	17.570	158758	25.010	ug/mlm
25)	n-C21	18.859	162470	24.964	ug/mlm
26)	n-C22	20.154	159429	24.920	ug/mlm
27)	n-C23	21.438	158490	24.950	ug/mlm
28)	n-C24	22.700	157588	24.911	ug/mlm
29)	n-C25	23.934	156481	24.920	ug/mlm
30)	n-C26	25.136	157824	24.873	ug/mlm
31)	n-C27	26.301	155239	24.846	ug/mlm
32)	n-C28	27.434	154162	24.800	ug/mlm
33)	n-C29	28.534	152240	24.856	ug/mlm
35)	n-C30	29.597	151793	24.837	ug/mlm
36)	n-C31	30.628	151276	25.563	ug/mlm
37)	n-C32	31.631	149624	24.952	ug/mlm
38)	n-C33	32.602	141397	24.949	ug/mlm
39)	n-C34	33.549	144656	25.022	ug/mlm
40)	n-C35	34.507	143731	24.937	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.588	148759	25.085	ug/mlm
42)	n-C37	36.827	145003	25.844	ug/mlm
43)	n-C38	38.279	142599	25.280	ug/mlm
44)	n-C39	39.967	142337	25.351	ug/mlm
45)	n-C40	41.968	140912	25.267	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

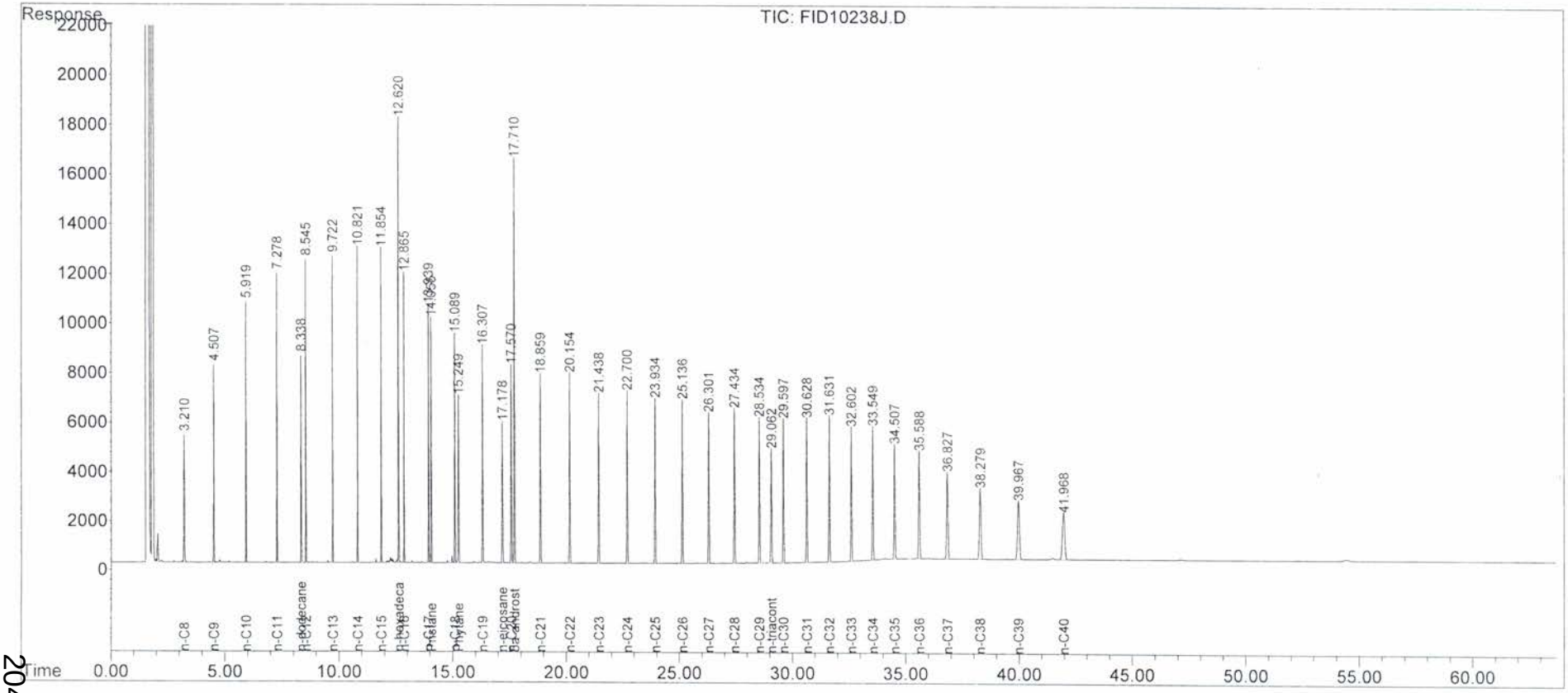
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\
Data File : FID10238J.D
Signal(s) : FID1A.CH
Acq On : 22-Aug-2014, 23:25:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 25 11:11:41 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10238\FID1C08FRONT082514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Aliphatic Mass Discrimination Ratio

Arcadis Mayflower AR Client Project # B0086022.1401

Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data

Mass Discrimination

File Name	Sample Name	n-C20 (Area)	n-C36 (Area)	n-C36/n-C20 ratio	Q
FID10238C.D	AL-WKC1-1.25-021	7996	7301	0.91	
FID10238D.D	AL-WKC2-10-021	61621	58180	0.94	
FID10238E.D	AL-WKC3-25-021	161051	150184	0.93	
FID10238F.D	AL-WKC4-40-021	244058	227882	0.93	
FID10238G.D	AL-WKC5-50-021	310890	293172	0.94	
FID10238H.D	AL-WKC6-100-003	601436	556026	0.92	
FID10238I.D	AL-WKICV-25-005	171922	152414	0.89	
FID10238J.D	AL-WKCC-25-030	158758	148759	0.94	
FID10247B.D	AL-WKCC-25-030	166202	163303	0.98	
FID10247G.D	AL-WKCC-25-030	160011	153989	0.96	
FID10247J.D	AL-WKCC-25-030	168442	162828	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 Hydrocarbon 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)
FID10238E.D	**AL-WKC3-25-021**	**262074**	**131037**	**524148**	**330976**	**165488**	**661952**
FID10238I.D	**AL-WKICV-25-005**	**245826**	**122913**	**491652**	**311242**	**155621**	**622484**
FID10238J.D	**AL-WKCC-25-030**	**260844**	**130422**	**521688**	**328127**	**164064**	**656254**
FID10247B.D	**AL-WKCC-25-030**	**266006**	**133003**	**532012**	**342729**	**171365**	**685458**
FID10247C.D	AL-SRM2779-20-003	225853			318222		
FID10247F.D	Al-WKPEM-003	234799			299463		
ENV3341A.D	Method Blank	220313			282093		
ENV3341B.D	Blank Spike	221070			281267		
ENV3341C.D	Blank Spike Dupl	232956			301357		
FID10247G.D	**AL-WKCC-25-030**	**258177**	**129089**	**516354**	**328725**	**164363**	**657450**
ARC2055.D	SHN-Cove-006(NB)092514	207201			292686		
ARC2056	SHN-Cove-007(NB)092514	224588			287852		
ARC2057	SHN-Cove-008(NB)092514	227631			290832		
ARC2058	SHN-Cove-009(NB)092914	211813			258127		
FID10247J.D	**AL-WKCC-25-030**	**273533**	**136767**	**547066**	**345392**	**172696**	**690784**

Polycyclic Aromatic Hydrocarbon
Initial Calibration Data
and
Initial Calibration Verification Data

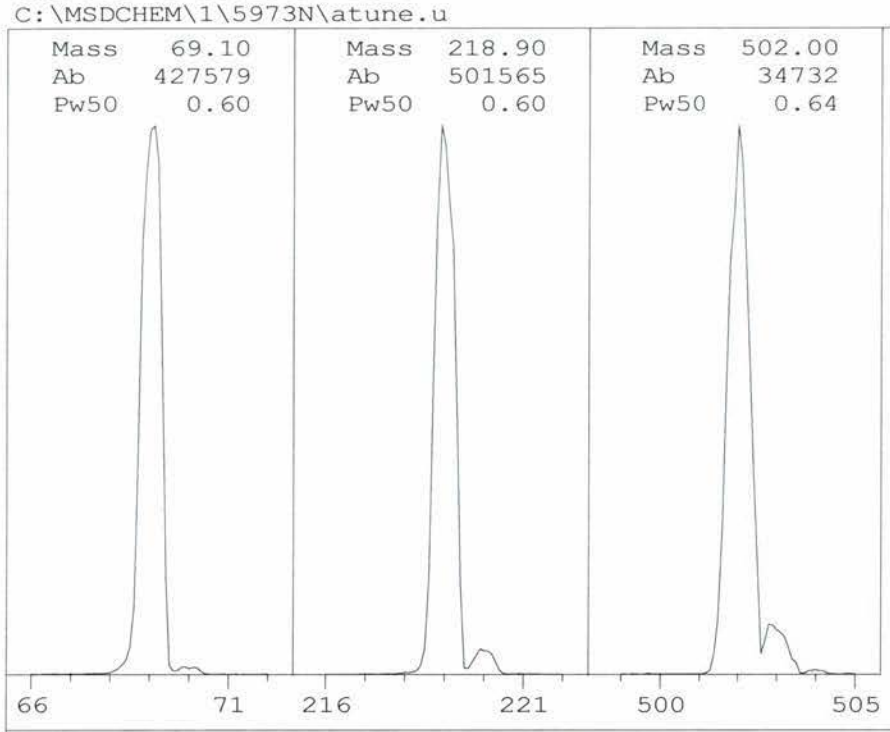
PAH ICAL
AR 70123.M

GC/MS 7
(PAH-2014)

Autotune

Thu Oct 02 06:18:53 2014 Instrument: GCMS 7

C:\MSDCHEM\1\5973N\atune.u US21854533



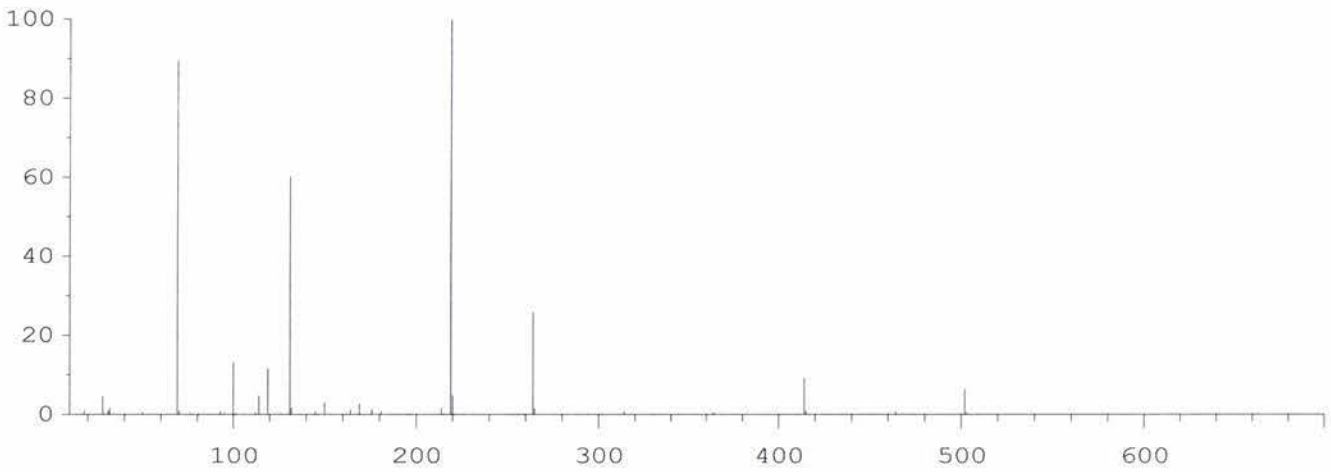
Ion Pol	Pos	MassGain	434
		MassOffs	-10
Emission	34.6	AmuGain	2296
EIEnrgy	69.9	AmuOffs	130
Filament	1	Wid219	-0.031
		DC Pol	Neg
Repeller	30.96		
IonFcus	89.2	HEDEnab	On
EntLens	19.0	EMVolts	1424
EntOffs	15.81		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	290	Turbo Speed	100
MS Quad	180		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

159 peaks Base: 219.00 Abundance: 445952



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	399680	100.00	70.00	4824	1.21
219.00	445952	111.58	220.00	22072	4.95
502.00	28720	7.19	503.00	2866	9.98

Air/Water Check: H2O~1.26% N2~5.18% O2~1.86% CO2~0.25% N2/H2O~411.76%

Column(1) Flow: 1.316 Column(2): 0 ml/min. Interface Temp: 290

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 502; EM Gain 1099206

Repeller Maximum 35 volts using ion 219; Gain Factor 10.99

MassGain Values(Samples): 436(3) 431(2) 432(1) 430(0) 434(FS)

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	130.0	130.0	130.0	130.0	130.0	130.0	130.0
Entrance Lens Offset:	15.8	15.8	15.8	15.8	15.8	15.8	15.8

MS70123 YM

Response Factor Report GCMS 7

Method Path : C:\GCMS7\MS70123\
Method File : AR70123.M
Title : PAH Calibration Table-2013A
Last Update : Fri Oct 03 17:17:21 2014
Response Via : Initial Calibration

Calibration Files
1 =MS70123B.D 2 =MS70123C.D 3 =MS70123D.D 4 =MS70123E.D
5 =MS70123F.D 6 =MS70123G.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorene-d10	ISTD							
2)	S	Naphthalene-d8	1.595	1.644	1.700	1.710	1.786	1.618	1.676	4.18
3)	T	cis/trans Decalin	0.301	0.317	0.335	0.337	0.346	0.327	0.327	4.88
4)	un	C1-Decalins	0.301	0.317	0.335	0.337	0.346	0.327	0.327	4.88
5)	un	C2-Decalins	0.301	0.317	0.335	0.337	0.346	0.327	0.327	4.88
6)	un	C3-Decalins	0.301	0.317	0.335	0.337	0.346	0.327	0.327	4.88
7)	un	C4-Decalins	0.301	0.317	0.335	0.337	0.346	0.327	0.327	4.88
8)	T	Naphthalene	1.936	1.963	2.041	2.043	2.122	1.874	1.996	4.47
9)	T	2-Methylnaphth...	1.222	1.286	1.322	1.333	1.393	1.260	1.303	4.62
10)	T	1-Methylnaphth...	1.148	1.190	1.228	1.230	1.274	1.145	1.202	4.24
11)	T	2,6-Dimethylna...	1.092	1.143	1.180	1.200	1.245	1.104	1.161	5.06
12)	T	1,6,7-Trimethy...	1.090	1.135	1.160	1.179	1.214	1.059	1.139	5.06
13)	un	C2-Naphthalenes	1.936	1.963	2.041	2.043	2.122	1.874	1.996	4.47
14)	un	C3-Naphthalenes	1.936	1.963	2.041	2.043	2.122	1.874	1.996	4.47
15)	un	C4-Naphthalenes	1.936	1.963	2.041	2.043	2.122	1.874	1.996	4.47
16)	T	Benzothiophene	1.583	1.662	1.723	1.729	1.806	1.632	1.689	4.72
17)	un	C1-Benzothioph...	1.583	1.662	1.723	1.729	1.806	1.632	1.689	4.72
18)	un	C2-Benzothioph...	1.583	1.662	1.723	1.729	1.806	1.632	1.689	4.72
19)	un	C3-Benzothioph...	1.583	1.662	1.723	1.729	1.806	1.632	1.689	4.72
20)	un	C4-Benzothioph...	1.583	1.662	1.723	1.729	1.806	1.632	1.689	4.72
21)	S	Acenaphthene-d10	0.920	0.968	0.987	1.002	1.032	0.934	0.974	4.33
22)	T	Biphenyl	1.692	1.760	1.819	1.834	1.890	1.483	1.746	8.35
23)	T	Acenaphthylene	1.904	1.979	2.025	2.048	2.108	1.582	1.941	9.74
24)	T	Acenaphthene	1.071	1.139	1.160	1.177	1.212	1.059	1.136	5.32
25)	T	Dibenzofuran	1.863	1.951	1.989	2.017	2.068	1.524	1.902	10.39
26)	T	Fluorene	1.337	1.407	1.431	1.448	1.484	1.236	1.391	6.48
27)	T	1-Methylfluorene	0.773	0.812	0.830	0.852	0.885	0.827	0.830	4.55
28)	un	C1-Fluorenes	1.337	1.407	1.431	1.448	1.484	1.236	1.391	6.48
29)	un	C2-Fluorenes	1.337	1.407	1.431	1.448	1.484	1.236	1.391	6.48
30)	un	C3-Fluorenes	1.337	1.407	1.431	1.448	1.484	1.236	1.391	6.48
31)	I	Pyrene-d10	ISTD							
32)	S	Phenanthrene-d10	0.755	0.793	0.808	0.836	0.865	0.692	0.791	7.77
33)	T	Carbazole	0.772	0.839	0.868	0.907	0.946	0.740	0.845	9.30
34)	T	Dibenzothiophene	0.962	1.039	1.064	1.102	1.129	0.805	1.017	11.68
35)	T	4-Methyldibenz...	0.646	0.698	0.716	0.741	0.772	0.631	0.701	7.77
36)	un	2/3-Methyldibe...	0.646	0.698	0.716	0.741	0.772	0.631	0.701	7.77
37)	un	1-Methyldibenz...	0.646	0.698	0.716	0.741	0.772	0.631	0.701	7.77
38)	un	C2-Dibenzothio...	0.962	1.039	1.064	1.102	1.129	0.805	1.017	11.68
39)	un	C3-Dibenzothio...	0.962	1.039	1.064	1.102	1.129	0.805	1.017	11.68
40)	un	C4-Dibenzothio...	0.962	1.039	1.064	1.102	1.129	0.805	1.017	11.68
41)	T	Phenanthrene	0.926	1.002	1.026	1.067	1.091	0.781	0.982	11.59
42)	T	Anthracene	0.863	0.948	0.975	1.020	1.056	0.772	0.939	11.17
43)	un	3-Methylphenan...	0.731	0.789	0.801	0.835	0.867	0.711	0.789	7.58
44)	un	2-Methylphenan...	0.731	0.789	0.801	0.835	0.867	0.711	0.789	7.58
45)	un	2-Methylanthra...	0.731	0.789	0.801	0.835	0.867	0.711	0.789	7.58
46)	un	4/9-Methylphen...	0.731	0.789	0.801	0.835	0.867	0.711	0.789	7.58
47)	T	1-Methylphenan...	0.731	0.789	0.801	0.835	0.867	0.711	0.789	7.58
48)	T	3,6-Dimethylph...	0.658	0.696	0.705	0.734	0.769	0.622	0.697	7.56
49)	T	Retene	0.354	0.371	0.380	0.393	0.415	0.396	0.385	5.47
50)	un	C2-Phenanthren...	0.926	1.002	1.026	1.067	1.091	0.781	0.982	11.59
51)	un	C3-Phenanthren...	0.926	1.002	1.026	1.067	1.091	0.781	0.982	11.59
52)	un	C4-Phenanthren...	0.926	1.002	1.026	1.067	1.091	0.781	0.982	11.59
53)	T	Naphthobenzoth...	1.157	1.224	1.232	1.250	1.298	0.884	1.174	12.73
54)	un	C1-Naphthobenz...	1.157	1.224	1.232	1.250	1.298	0.884	1.174	12.73
55)	un	C2-Naphthobenz...	1.157	1.224	1.232	1.250	1.298	0.884	1.174	12.73
56)	un	C3-Naphthobenz...	1.157	1.224	1.232	1.250	1.298	0.884	1.174	12.73

Method Path : C:\GCMS7\MS70123\
Method File : AR70123.M
Title : PAH Calibration Table-2013A

57)	un	C4-Naphthobenz...	1.157	1.224	1.232	1.250	1.298	0.884	1.174	12.73
58)	T	Fluoranthene	1.142	1.224	1.250	1.277	1.317	0.879	1.182	13.50
59)	T	Pyrene	1.300	1.342	1.372	1.388	1.422	0.893	1.286	15.30
60)	T	2-Methylfluora...	0.804	0.824	0.837	0.861	0.894	0.695	0.819	8.34
61)	T	Benzo(b)fluorene	0.745	0.769	0.778	0.805	0.847	0.694	0.773	6.73
62)	un	C1-Fluoranthen...	1.142	1.224	1.250	1.277	1.317	0.879	1.182	13.50
63)	un	C2-Fluoranthen...	1.142	1.224	1.250	1.277	1.317	0.879	1.182	13.50
64)	un	C3-Fluoranthen...	1.142	1.224	1.250	1.277	1.317	0.879	1.182	13.50
65)	un	C4-Fluoranthen...	1.142	1.224	1.250	1.277	1.317	0.879	1.182	13.50
66)	S	Chrysene-d12	1.045	1.109	1.138	1.170	1.220	0.819	1.084	13.11
67)	T	Benz(a)anthracene	1.199	1.273	1.286	1.315	1.370	0.948	1.232	12.15
68)	T	Chrysene/Triph...	1.198	1.264	1.301	1.336	1.388	0.892	1.230	14.43
69)	un	C1-Chrysenes	1.198	1.264	1.301	1.336	1.388	0.892	1.230	14.43
70)	un	C2-Chrysenes	1.198	1.264	1.301	1.336	1.388	0.892	1.230	14.43
71)	un	C3-Chrysenes	1.198	1.264	1.301	1.336	1.388	0.892	1.230	14.43
72)	un	C4-Chrysenes	1.198	1.264	1.301	1.336	1.388	0.892	1.230	14.43
73)	I	Benzo(a)pyrene-d12	----------ISTD----------							
74)	un	C29-Hopane	0.561	0.526	0.505	0.506	0.517	0.478	0.515	5.31
75)	un	18a-Oleanane	0.561	0.526	0.505	0.506	0.517	0.478	0.515	5.31
76)	T	C30-Hopane	0.561	0.526	0.505	0.506	0.517	0.478	0.515	5.31
77)	T	Benzo(b)fluora...	1.175	1.223	1.224	1.222	1.281	0.855	1.163	13.29
78)	T	Benzo(k,j)fluo...	1.149	1.188	1.200	1.244	1.276	0.843	1.150	13.65
79)	un	Benzo(a)fluora...	1.149	1.188	1.200	1.244	1.276	0.843	1.150	13.65
80)	T	Benzo(e)pyrene	1.464	1.519	1.504	1.533	1.551	1.012	1.430	14.49
81)	T	Benzo(a)pyrene	1.207	1.278	1.282	1.319	1.358	0.969	1.236	11.31
82)	T	Indeno(1,2,3-c...	1.517	1.654	1.683	1.727	1.803	1.538	1.654	6.66
83)	T	Dibenzo(a,h)an...	1.165	1.292	1.330	1.370	1.450	1.229	1.306	7.76
84)	un	C1-Dibenzo(a,h...	1.165	1.292	1.330	1.370	1.450	1.229	1.306	7.76
85)	un	C2-Dibenzo(a,h...	1.165	1.292	1.330	1.370	1.450	1.229	1.306	7.76
86)	un	C3-Dibenzo(a,h...	1.165	1.292	1.330	1.370	1.450	1.229	1.306	7.76
87)	T	Benzo(g,h,i)pe...	1.399	1.498	1.495	1.515	1.567	1.304	1.463	6.50
88)	S	Perylene-d12	1.086	1.149	1.148	1.177	1.207	0.931	1.116	8.89
89)	T	Perylene	1.456	1.475	1.471	1.506	1.539	1.036	1.414	13.26
90)	S	5(b)H-Cholane	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03
91)	un	C20-TAS	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03
92)	un	C21-TAS	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03
93)	un	C26(20S)-TAS	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03
94)	un	C26(20R)/C27(2...	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03
95)	un	C28(20S)-TAS	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03
96)	un	C27(20R)-TAS	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03
97)	un	C28(20R)-TAS	0.272	0.276	0.265	0.271	0.277	0.264	0.271	2.03

(#) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123B.D
Acq On : 2 Oct 2014 11:34 am
Operator : ECM(YMIAO)
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 03 17:07:46 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 09:26:30 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	328941	251.05			0.00
31) Pyrene-d10	29.410	212	718718	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	804381	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	41825	19.05			0.00
21) Acenaphthene-d10	19.415	164	24115	18.90			0.00
32) Phenanthrene-d10	24.508	188	43313	19.08			0.00
66) Chrysene-d12	33.584	240	59966	19.30			0.00
88) Perylene-d12	38.423	264	69780	19.45			0.00
90) 5(b)H-Cholane	33.990	217	17493	20.10			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.930	138	7818m	26.90			
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	13.629	128	50019	19.12			98
9) 2-Methylnaphthalene	15.876	142	31797	18.63			100
10) 1-Methylnaphthalene	16.200	142	29925	18.99			98
11) 2,6-Dimethylnaphthalene	17.961	156	28590	18.80			83
12) 1,6,7-Trimethylnaphtha...	20.821	170	28608	19.16			99
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	13.797	134	41363	18.69			100
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	17.444	154	44196	19.32			93
23) Acenaphthylene	18.926	152	49833	19.59			97
24) Acenaphthene	19.513	154	28244	18.97			95
25) Dibenzofuran	20.111	168	48725	19.55			100
26) Fluorene	21.283	166	34548	18.96			99
27) 1-Methylfluorene	23.278	180	20397	18.76		#	75
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	25.347	167	44173	18.22			100
34) Dibenzothiophene	24.159	184	54571	18.72			97
35) 4-Methyldibenzothiophene	25.655	198	37289	18.56			100
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	24.592	178	52958	18.80			98
42) Anthracene	24.760	178	49567	18.41			95
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123B.D
Acq On : 2 Oct 2014 11:34 am
Operator : ECM(YMIAO)
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 03 17:07:46 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 09:26:30 2014
Response via : Initial Calibration

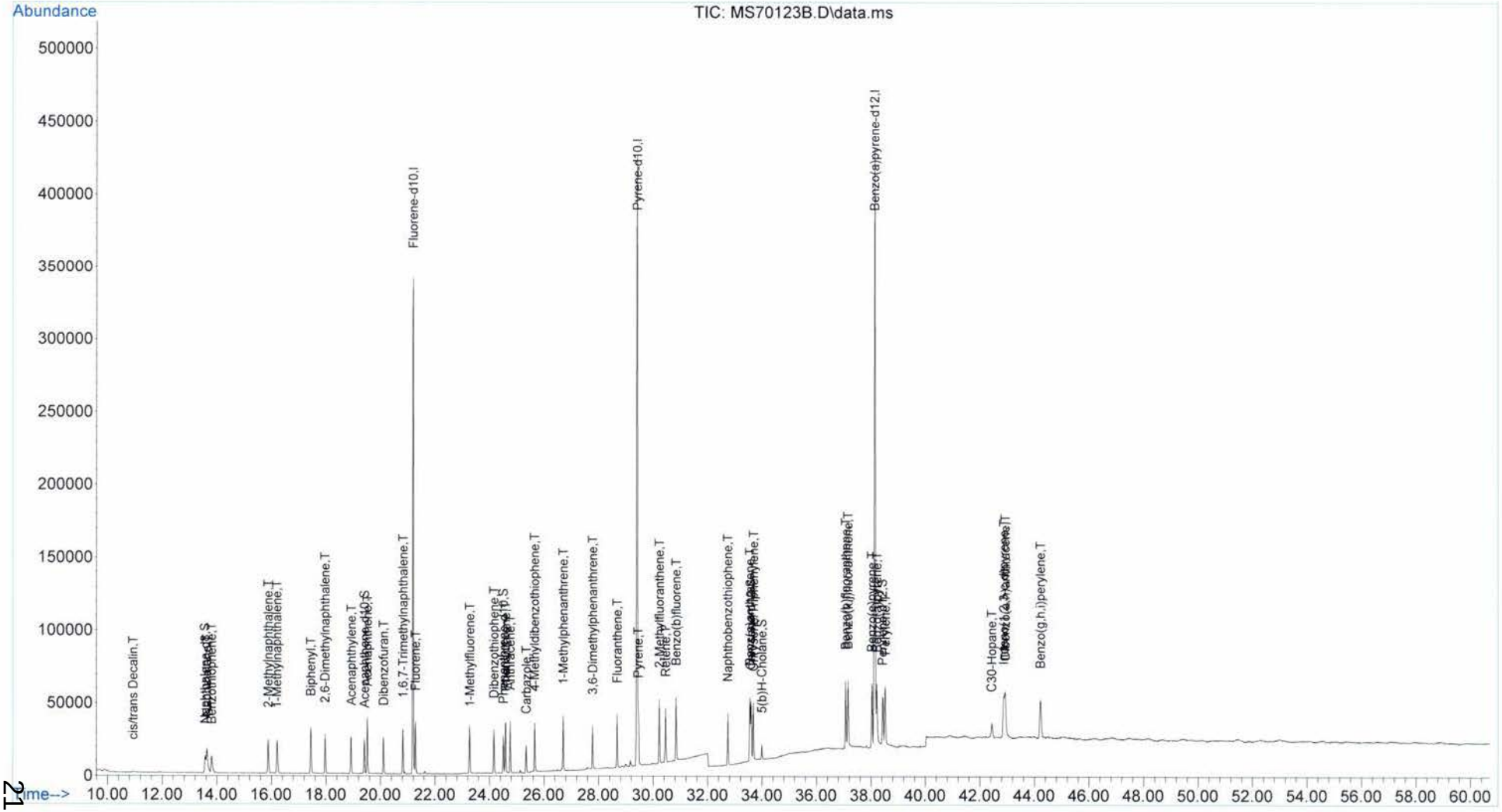
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.703	192	41608	18.39			98
48) 3,6-Dimethylphenanthrene	27.779	206	37809	18.91			95
49) Retene	30.449	234	20338	18.43		#	54
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
53) Naphthobenzothiophene	32.734	234	66730	19.82			100
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	28.676	202	65970m	13381.43			
59) Pyrene	29.451	202	74614	20.23		#	100
60) 2-Methylfluoranthene	30.225	216	46143m	20.13			
61) Benzo(b)fluorene	30.837	216	42925	19.37			99
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	33.545	228	68104	19.28			99
68) Chrysene/Triphenylene	33.680	228	68076	19.30			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	42.436	191	36047	21.76			100
77) Benzo(b)fluoranthene	37.066	252	75219	20.12			100
78) Benzo(k,j)fluoranthene	37.152	252	73987	20.02			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	94361	20.53			98
81) Benzo(a)pyrene	38.217	252	77514	19.52			98
82) Indeno(1,2,3-c,d)pyrene	42.875	276	97462	18.34			99
83) Dibenzo(a,h)anthracene	42.927	278	74289	17.70			91
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	44.219	276	88671	18.86			95
89) Perylene	38.526	252	93542	20.59		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123B.D
Acq On : 2 Oct 2014 11:34 am
Operator : ECM(YMIAO)
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 03 17:07:46 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 09:26:30 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123C.D
Acq On : 2 Oct 2014 12:44 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 03 16:53:19 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 09:53:01 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	328719	251.05			0.00
31) Pyrene-d10	29.410	212	705101	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	789566	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	215384	98.18			0.00
21) Acenaphthene-d10	19.415	164	126863	99.48			0.00
32) Phenanthrene-d10	24.508	188	223296	100.28			0.00
66) Chrysene-d12	33.584	240	312061	102.36			0.00
88) Perylene-d12	38.423	264	362464	102.94			0.00
90) 5(b)H-Cholane	33.989	217	86938	101.79			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.930	138	41081m	141.43			
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	13.629	128	253395	96.94			99
9) 2-Methylnaphthalene	15.876	142	167269	98.06			99
10) 1-Methylnaphthalene	16.200	142	155008	98.46			96
11) 2,6-Dimethylnaphthalene	17.961	156	149536	98.40			88
12) 1,6,7-Trimethylnaphtha...	20.821	170	148897	99.80			95
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	13.797	134	216942	98.08			100
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	17.444	154	229805	100.50			93
23) Acenaphthylene	18.912	152	258822	101.84			96
24) Acenaphthene	19.513	154	150079	100.85			97
25) Dibenzofuran	20.099	168	254987	102.39			100
26) Fluorene	21.283	166	181617	99.75			99
27) 1-Methylfluorene	23.264	180	107097	98.57		#	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	25.333	167	235366	98.96			100
34) Dibenzothiophene	24.159	184	289043	101.05			96
35) 4-Methyldibenzothiophene	25.654	198	197648	100.28			100
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	24.578	178	281155	101.75			98
42) Anthracene	24.760	178	266919	101.04			97
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123C.D
Acq On : 2 Oct 2014 12:44 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 03 16:53:19 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 09:53:01 2014
Response via : Initial Calibration

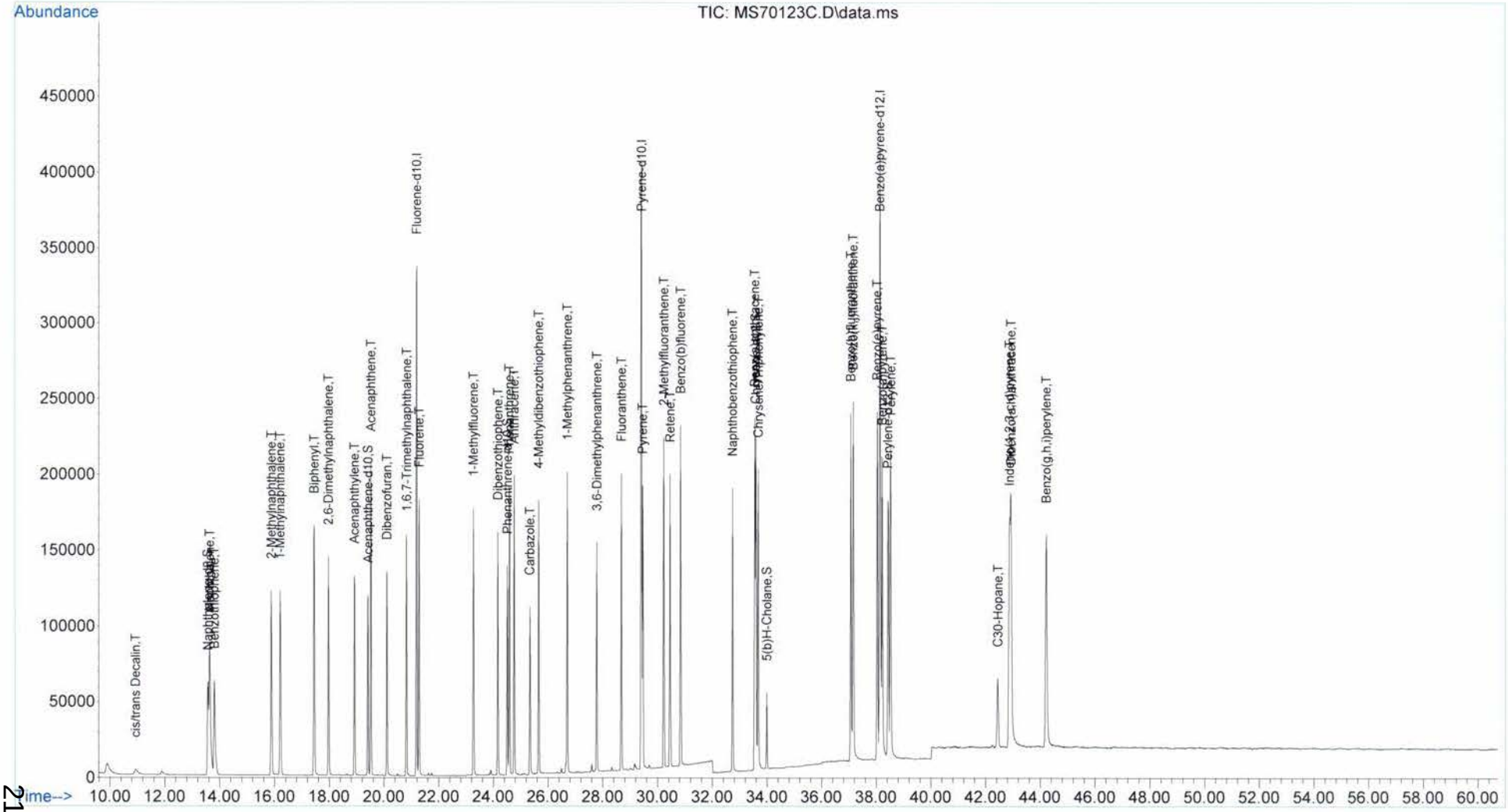
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.703	192	220375	99.29			98
48) 3,6-Dimethylphenanthrene	27.779	206	196123	99.98			95
49) Retene	30.449	234	104601	96.62		#	54
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.734	234	346369	104.85			100
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	28.676	202	346789m	71701.56			
59) Pyrene	29.450	202	377922	104.45		#	100
60) 2-Methylfluoranthene	30.225	216	232172	103.24		#	100
61) Benzo(b)fluorene	30.837	216	217452	100.01			100
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.545	228	354502	102.30			99
68) Chrysene/Triphenylene	33.680	228	352527	101.88			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	42.449	191	165935	102.06			100
77) Benzo(b)fluoranthene	37.066	252	384350	104.74			99
78) Benzo(k,j)fluoranthene	37.152	252	375540	103.53			99
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	480644	106.54			99
81) Benzo(a)pyrene	38.217	252	402547	103.29			99
82) Indeno(1,2,3-c,d)pyrene	42.875	276	521758	100.03			100
83) Dibenzo(a,h)anthracene	42.927	278	404280	98.14			91
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	44.219	276	465816	100.95			96
89) Perylene	38.526	252	465273	104.34		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123C.D
Acq On : 2 Oct 2014 12:44 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 03 16:53:19 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 09:53:01 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123D.D
Acq On : 2 Oct 2014 1:53 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 03 16:58:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 16:48:07 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	326625	251.05			0.00
31) Pyrene-d10	29.410	212	699192	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	800224	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	553238	253.79			0.00
21) Acenaphthene-d10	19.415	164	321324	253.58			0.00
32) Phenanthrene-d10	24.508	188	564047	255.45			0.00
66) Chrysene-d12	33.584	240	794153	262.70			0.00
88) Perylene-d12	38.440	264	917687	257.16			0.02
90) 5(b)H-Cholane	33.989	217	212016	244.92			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.930	138	108016m	347.47			
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	13.629	128	654569	252.01			100
9) 2-Methylnaphthalene	15.876	142	426861	251.84			100
10) 1-Methylnaphthalene	16.200	142	397396	254.03			97
11) 2,6-Dimethylnaphthalene	17.961	156	383357	253.88			88
12) 1,6,7-Trimethylnaphtha...	20.821	170	378192	255.11			97
13) C2-Naphthalenes	0.000		0	N.D.			
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.797	134	558874	254.29			100
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	17.444	154	590022	259.69			92
23) Acenaphthylene	18.912	152	658075	260.60			96
24) Acenaphthene	19.513	154	379444	256.62			97
25) Dibenzofuran	20.099	168	645537	260.88			100
26) Fluorene	21.283	166	458834	253.62			99
27) 1-Methylfluorene	23.264	180	272114	252.05		#	60
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	25.333	167	603430	255.86			100
34) Dibenzothiophene	24.159	184	733690	258.68			96
35) 4-Methyldibenzothiophene	25.654	198	502624	257.17			100
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	24.592	178	713187	260.28			99
42) Anthracene	24.760	178	680797	259.88			96
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123D.D
Acq On : 2 Oct 2014 1:53 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 03 16:58:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 16:48:07 2014
Response via : Initial Calibration

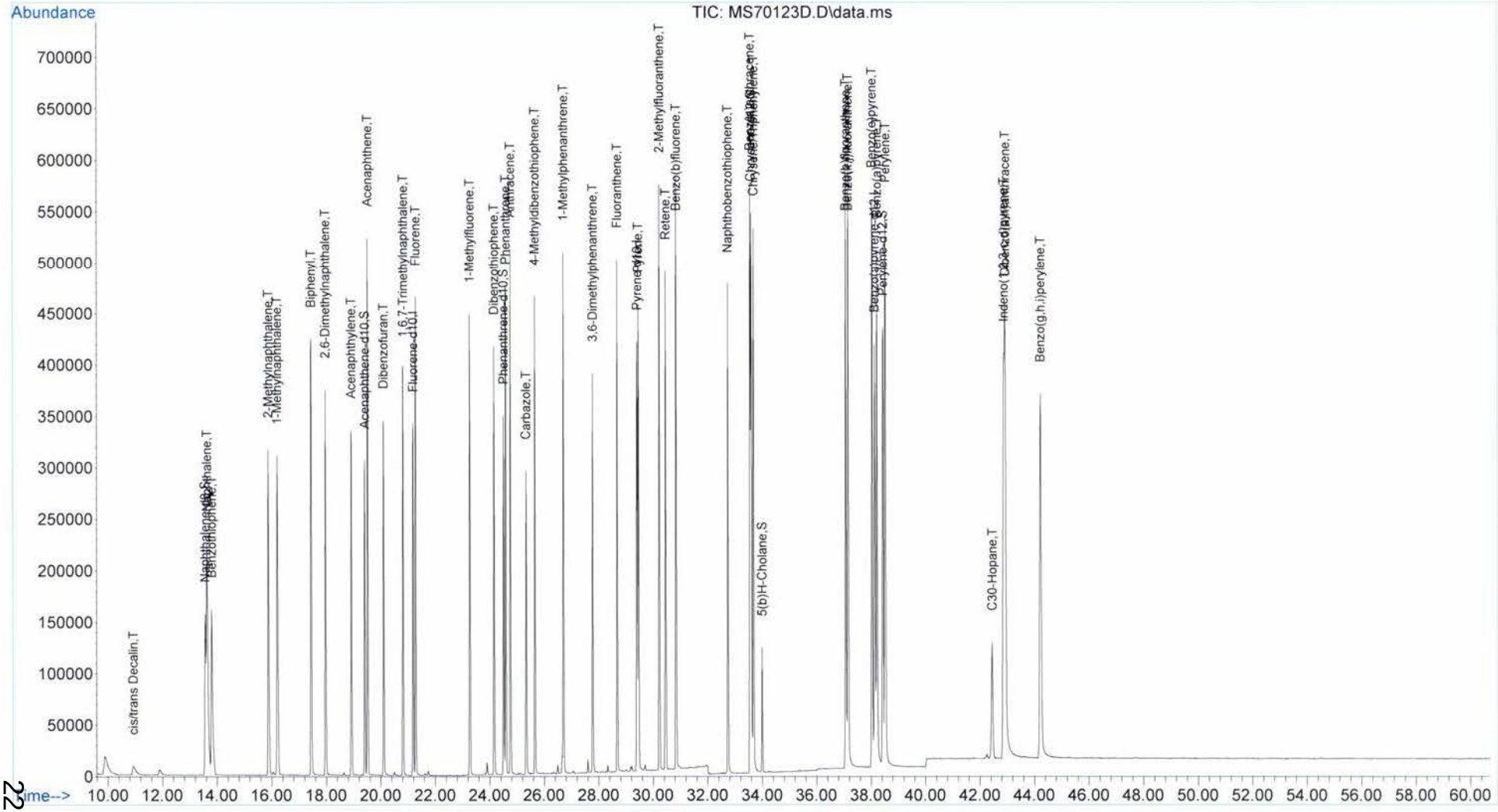
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.703	192	554942	252.15			99
48) 3,6-Dimethylphenanthrene	27.779	206	493038	253.47			97
49) Retene	30.449	234	265099	246.94		#	57
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.734	234	864061	263.77			100
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	28.676	202	877911m	183049.56			
59) Pyrene	29.450	202	957603	266.89		#	100
60) 2-Methylfluoranthene	30.225	216	584359	255.16		#	100
61) Benzo(b)fluorene	30.837	216	544960	252.75			98
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.545	228	887974	258.41			99
68) Chrysene/Triphenylene	33.680	228	899510	262.14			98
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	42.449	191	403612	244.95			100
77) Benzo(b)fluoranthene	37.066	252	974328	261.97			100
78) Benzo(k,j)fluoranthene	37.152	252	960605	261.31			99
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	1205489	263.64			98
81) Benzo(a)pyrene	38.217	252	1023571	259.15			100
82) Indeno(1,2,3-c,d)pyrene	42.875	276	1345321	254.49			100
83) Dibenzo(a,h)anthracene	42.927	278	1054572	252.59			90
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	44.219	276	1178043	251.89			96
89) Perylene	38.526	252	1175945	260.20		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123D.D
Acq On : 2 Oct 2014 1:53 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 03 16:58:45 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 16:48:07 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123E.D
Acq On : 2 Oct 2014 3:03 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 03 17:01:48 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 16:58:55 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	331376	251.05			0.00
31) Pyrene-d10	29.410	212	695626	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	788144	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	1128897	510.44			0.00
21) Acenaphthene-d10	19.415	164	661757	514.76			0.00
32) Phenanthrene-d10	24.508	188	1161430	528.68			0.00
66) Chrysene-d12	33.584	240	1623396	539.77			0.00
88) Perylene-d12	38.440	264	1853385	527.32			0.00
90) 5(b)H-Cholane	33.990	217	426038	499.71			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.930	138	219922m	644.95			
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	13.629	128	1329459	504.51			100
9) 2-Methylnaphthalene	15.876	142	873637	508.03			100
10) 1-Methylnaphthalene	16.200	142	807554	508.82			96
11) 2,6-Dimethylnaphthalene	17.961	156	791327	516.54			92
12) 1,6,7-Trimethylnaphtha...	20.822	170	779744	518.45			94
13) C2-Naphthalenes	0.000		0	N.D.			
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.797	134	1137823	510.29			100
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	17.430	154	1206607	523.46			100
23) Acenaphthylene	18.912	152	1350466	527.12			97
24) Acenaphthene	19.513	154	781583	521.02			98
25) Dibenzofuran	20.099	168	1328617	529.23			100
26) Fluorene	21.283	166	942460	513.48			99
27) 1-Methylfluorene	23.264	180	566770	517.45		#	68
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	25.333	167	1255235	534.96			100
34) Dibenzothiophene	24.159	184	1512913	536.15			95
35) 4-Methyldibenzothiophene	25.655	198	1034453	532.00			100
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	24.578	178	1476104	541.48			97
42) Anthracene	24.760	178	1416721	543.58			96
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123E.D
Acq On : 2 Oct 2014 3:03 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 03 17:01:48 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 16:58:55 2014
Response via : Initial Calibration

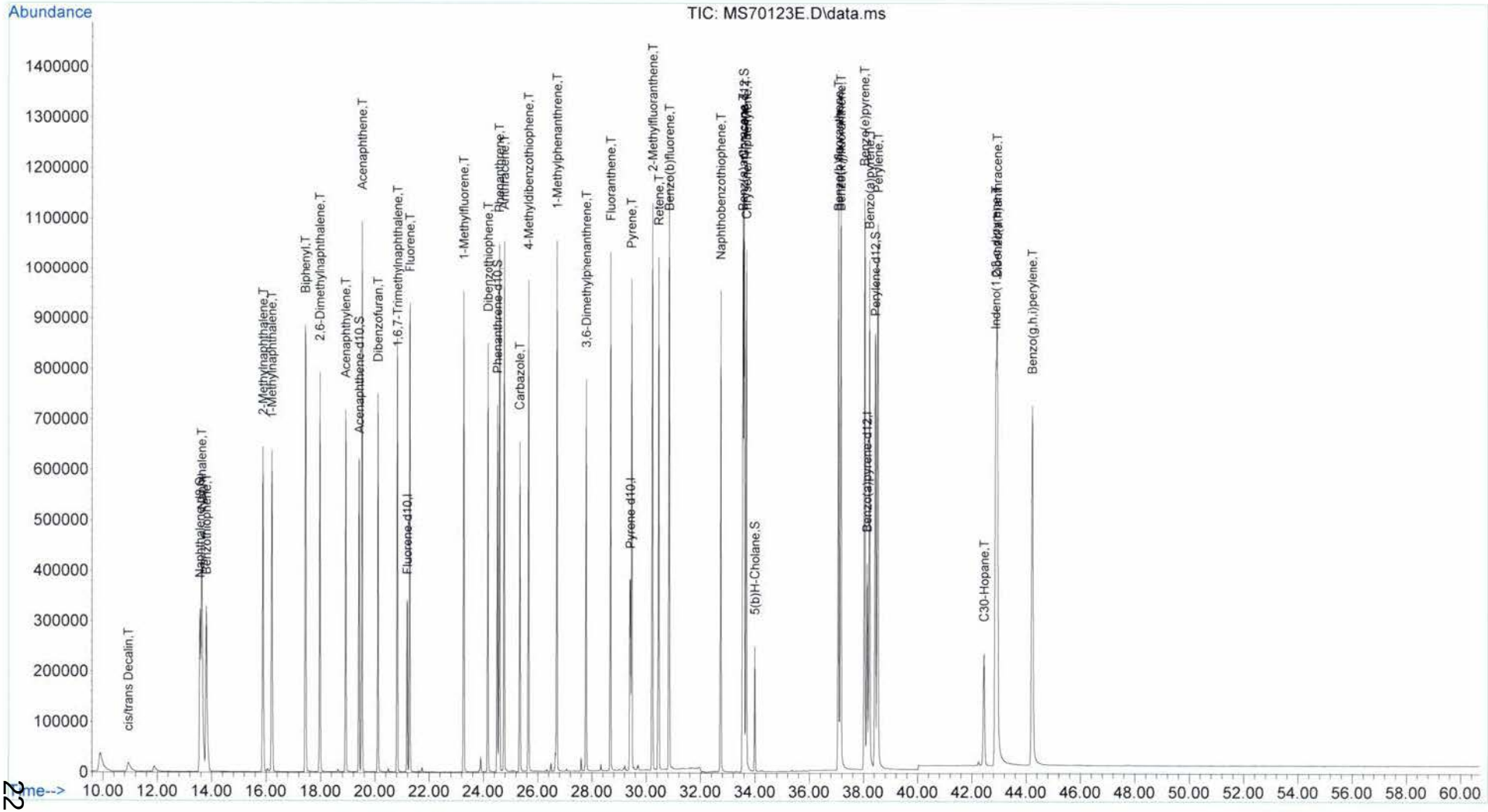
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.703	192	1151206	525.77			99
48)	3,6-Dimethylphenanthrene	27.779	206	1020959	527.57			95
49)	Retene	30.449	234	545360	510.62		#	53
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53)	Naphthobenzothiophene	32.734	234	1743753	535.05			100
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	28.676	202	1784884	1555.16		#	100
59)	Pyrene	29.451	202	1928753	540.32		#	100
60)	2-Methylfluoranthene	30.225	216	1195507	524.68		#	100
61)	Benzo(b)fluorene	30.837	216	1121898	522.99			99
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.545	228	1806344	528.35			98
68)	Chrysene/Triphenylene	33.681	228	1837301	538.18			98
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	42.449	191	795866	490.41			100
77)	Benzo(b)fluoranthene	37.066	252	1915743	522.99			100
78)	Benzo(k,j)fluoranthene	37.152	252	1962059	541.90			99
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.028	252	2420488	537.48			99
81)	Benzo(a)pyrene	38.217	252	2073896	533.13			100
82)	Indeno(1,2,3-c,d)pyrene	42.875	276	2718089	522.05			99
83)	Dibenzo(a,h)anthracene	42.927	278	2139178	520.23			90
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	44.219	276	2351371	510.48			96
89)	Perylene	38.526	252	2370475	532.54		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123E.D
Acq On : 2 Oct 2014 3:03 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 03 17:01:48 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 16:58:55 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123F.D
Acq On : 2 Oct 2014 4:12 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 03 17:03:46 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:02:02 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	312923	251.05			0.00
31) Pyrene-d10	29.410	212	651919	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	752095	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	2226676	1066.19			0.00
21) Acenaphthene-d10	19.415	164	1287357	1060.45			0.00
32) Phenanthrene-d10	24.508	188	2251248	1093.47			0.00
66) Chrysene-d12	33.584	240	3173285	1125.83			0.00
88) Perylene-d12	38.441	264	3626663	1081.31			0.00
90) 5(b)H-Cholane	33.990	217	833388	1024.35			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.931	138	426721m	1233.84			
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	13.629	128	2607906	1048.02			100
9) 2-Methylnaphthalene	15.876	142	1724767	1062.12			100
10) 1-Methylnaphthalene	16.200	142	1580363	1054.47			96
11) 2,6-Dimethylnaphthalene	17.961	156	1549797	1071.30			90
12) 1,6,7-Trimethylnaphtha...	20.822	170	1516258	1067.60			97
13) C2-Naphthalenes	0.000		0	N.D.			
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.797	134	2244634	1066.03			100
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	17.444	154	2348808	1079.07			92
23) Acenaphthylene	18.912	152	2625296	1085.14			97
24) Acenaphthene	19.513	154	1520384	1073.29			98
25) Dibenzofuran	20.099	168	2572130	1084.98			100
26) Fluorene	21.283	166	1823998	1052.37			99
27) 1-Methylfluorene	23.264	180	1110992	1074.13		#	62
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	25.333	167	2453122	1115.56			100
34) Dibenzothiophene	24.159	184	2903256	1097.84			96
35) 4-Methyldibenzothiophene	25.655	198	2020830	1108.95			100
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	24.578	178	2828808	1107.26			96
42) Anthracene	24.760	178	2748293	1125.20			98
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123F.D
Acq On : 2 Oct 2014 4:12 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 03 17:03:46 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:02:02 2014
Response via : Initial Calibration

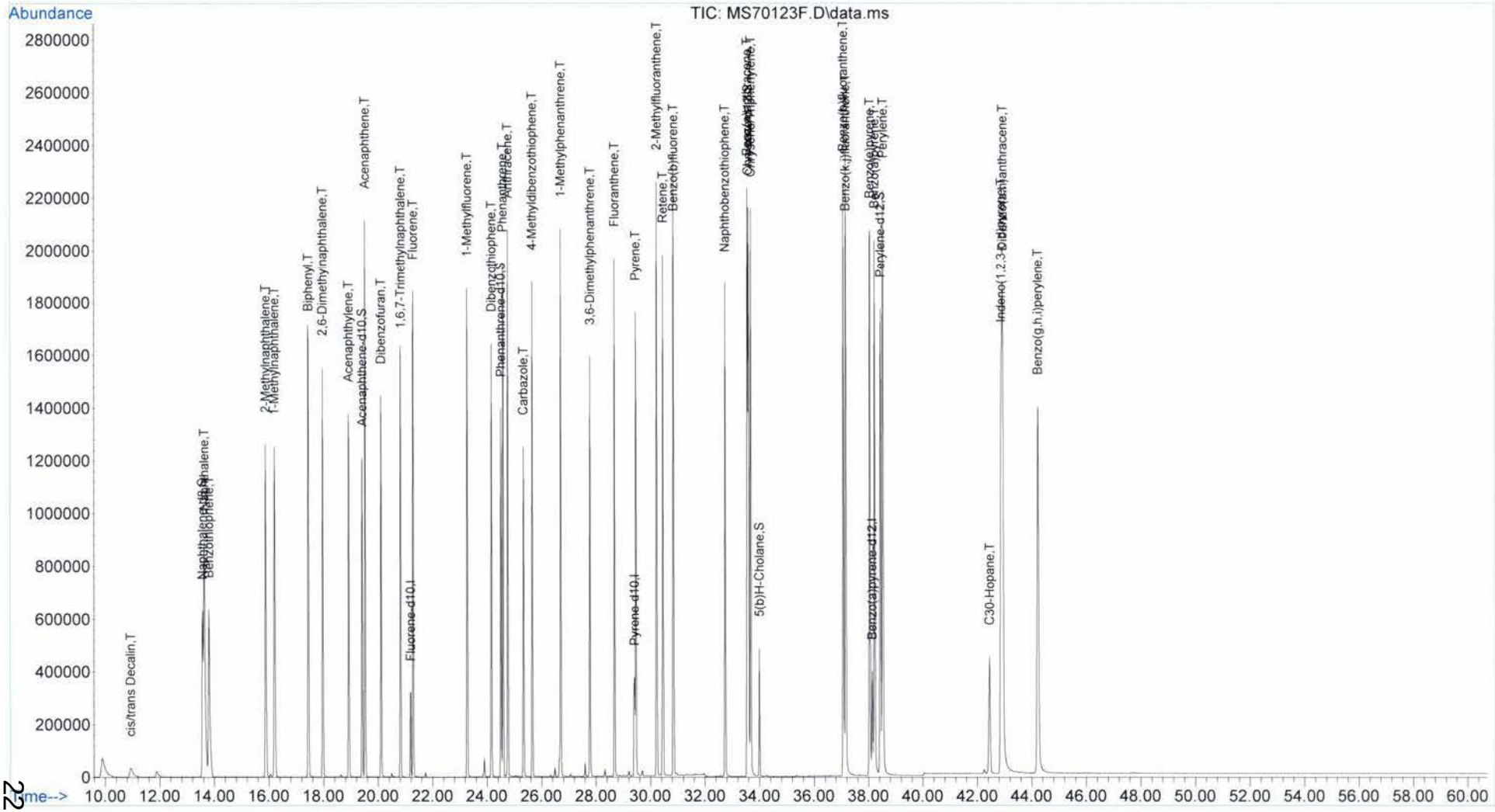
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.703	192	2238176	1090.73			97
48)	3,6-Dimethylphenanthrene	27.779	206	2005014	1105.52			97
49)	Retene	30.450	234	1079708	1078.70		#	54
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53)	Naphthobenzothiophene	32.734	234	3395757	1111.80			100
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	28.676	202	3449414	2117.77		#	100
59)	Pyrene	29.451	202	3701507	1106.45		#	100
60)	2-Methylfluoranthene	30.225	216	2328304	1090.35		#	100
61)	Benzo(b)fluorene	30.837	216	2212245	1100.42			99
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.545	228	3526839	1100.75			96
68)	Chrysene/Triphenylene	33.681	228	3577672	1118.24			99
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	42.449	191	1552123	1002.25			100
77)	Benzo(b)fluoranthene	37.066	252	3832608	1096.44			99
78)	Benzo(k,j)fluoranthene	37.152	252	3842875	1112.24			98
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.045	252	4672466	1087.26			98
81)	Benzo(a)pyrene	38.217	252	4076719	1098.22			99
82)	Indeno(1,2,3-c,d)pyrene	42.876	276	5417293	1090.34			99
83)	Dibenzo(a,h)anthracene	42.927	278	4321545	1101.34			91
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	44.219	276	4642454	1056.19			97
89)	Perylene	38.526	252	4623430	1088.47		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123F.D
Acq On : 2 Oct 2014 4:12 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 03 17:03:46 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:02:02 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123G.D
Acq On : 2 Oct 2014 5:21 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 03 17:17:11 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:04:25 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	338429	251.05			0.00
31) Pyrene-d10	29.410	212	690611	250.63			0.00
73) Benzo(a)pyrene-d12	38.149	264	777085	250.32			0.02
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	10914271	4832.15			0.00
21) Acenaphthene-d10	19.415	164	6301616	4799.68			0.00
32) Phenanthrene-d10	24.508	188	9543064m	4375.56			0.00
66) Chrysene-d12	33.603	240	11289585	3780.97			0.02
88) Perylene-d12	38.458	264	14452825	4170.62			0.02
90) 5(b)H-Cholane	33.990	217	4091466	4867.28			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.931	138	2184517m	5468.71			
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	13.629	128	12453029	4627.25			95
9) 2-Methylnaphthalene	15.876	142	8434727	4802.70			98
10) 1-Methylnaphthalene	16.200	142	7678653	4737.31			95
11) 2,6-Dimethylnaphthalene	17.961	156	7432319	4750.39			76
12) 1,6,7-Trimethylnaphtha...	20.822	170	7149695	4654.71			86
13) C2-Naphthalenes	0.000		0	N.D.			
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.797	134	10965491	4815.29			100
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	17.444	154	9962985	4232.17			91
23) Acenaphthylene	18.926	152	10650402	4070.45		#	85
24) Acenaphthene	19.513	154	7179594	4686.32			98
25) Dibenzofuran	20.111	168	10249306	3997.55			100
26) Fluorene	21.284	166	8215925	4382.97			98
27) 1-Methylfluorene	23.278	180	5615952	5020.42			88
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	25.347	167	10161970	4362.27			100
34) Dibenzothiophene	24.159	184	10963841	3913.59		#	81
35) 4-Methyldibenzothiophene	25.669	198	8744153	4529.60			100
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	24.592	178	10731195	3965.11		#	70
42) Anthracene	24.760	178	10651846	4116.71		#	76
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123G.D
Acq On : 2 Oct 2014 5:21 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 03 17:17:11 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:04:25 2014
Response via : Initial Calibration

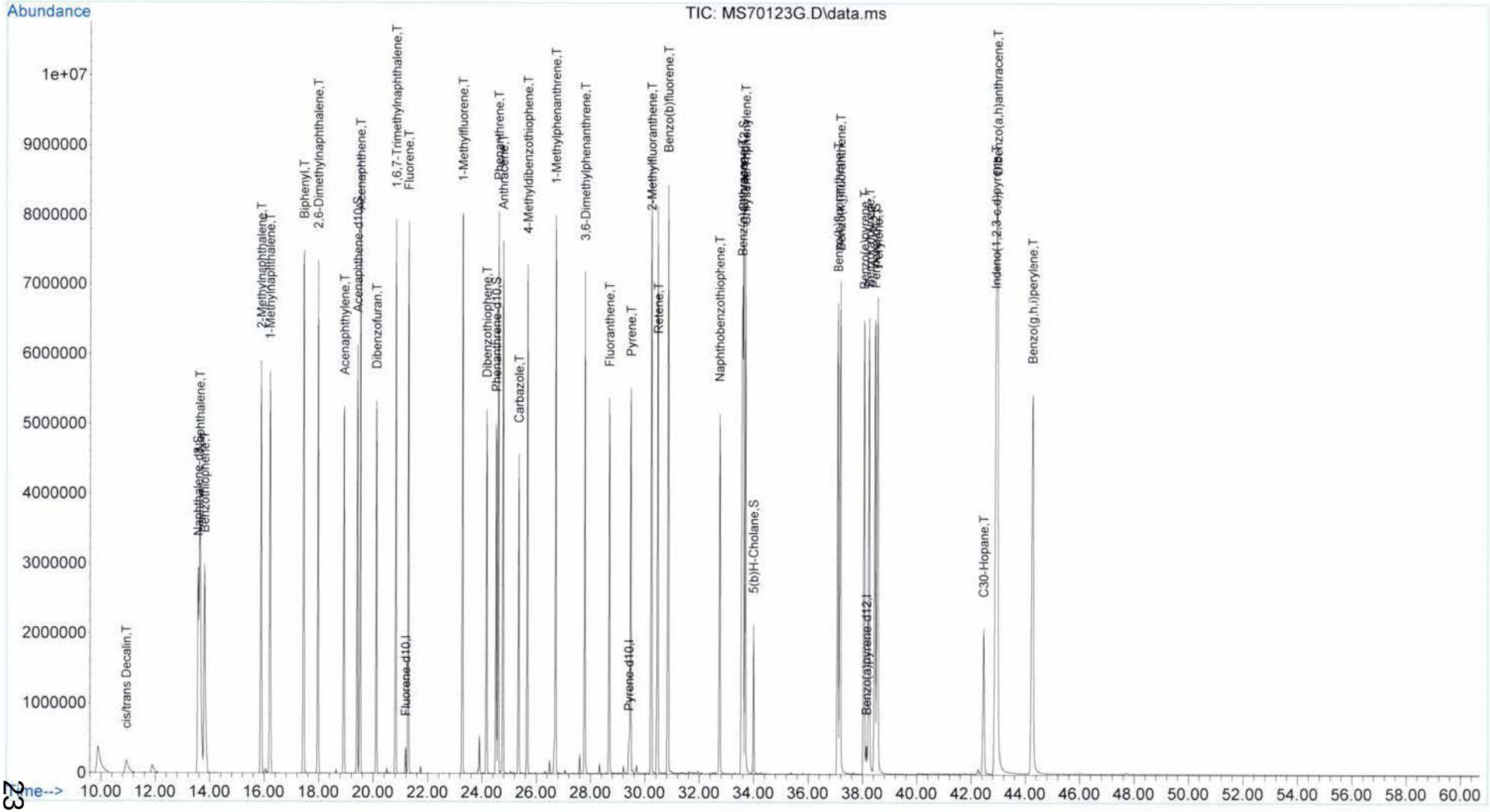
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.703	192	9722996	4472.83			79
48) 3,6-Dimethylphenanthrene	27.779	206	8581974	4466.82		#	73
49) Retene	30.470	234	5460472	5149.73		#	10
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.734	234	12240659	3783.16			100
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	28.676	202	12190554	5232.62		#	100
59) Pyrene	29.471	202	12321470	3476.76		#	100
60) 2-Methylfluoranthene	30.225	216	9585124	4237.26		#	100
61) Benzo(b)fluorene	30.837	216	9602274	4508.79			95
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.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	33.565	228	12930768	3809.68		#	67
68) Chrysene/Triphenylene	33.681	228	12185531	3595.32		#	54
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	42.462	191	7427028	4641.62			100
77) Benzo(b)fluoranthene	37.083	252	13224435	3661.60		#	57
78) Benzo(k,j)fluoranthene	37.169	252	13106674	3671.46		#	48
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.045	252	15748655	3546.79		#	65
81) Benzo(a)pyrene	38.234	252	15030551	3918.83		#	64
82) Indeno(1,2,3-c,d)pyrene	42.901	276	23877346	4651.25		#	81
83) Dibenzo(a,h)anthracene	42.953	278	18920479	4666.77			92
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	44.258	276	19953106	4393.49			89
89) Perylene	38.544	252	16079678	3663.81		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123G.D
Acq On : 2 Oct 2014 5:21 pm
Operator : ECM(YMIAO)
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 03 17:17:11 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:04:25 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123I.D
Acq On : 2 Oct 2014 7:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 05 10:04:43 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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	83	0.00
2	S	Naphthalene-d8	1.676	1.604	4.3	78	0.00
3	T	cis/trans Decalin	0.327	0.301	8.0	74	0.00
4	un	C1-Decalins	0.327	0.000	100.0#	0#	-12.16#
5	un	C2-Decalins	0.327	0.000	100.0#	0#	-14.12#
6	un	C3-Decalins	0.327	0.000	100.0#	0#	-16.80#
7	un	C4-Decalins	0.327	0.000	100.0#	0#	-18.58#
8	T	Naphthalene	1.996	1.819	8.9	74	0.00
9	T	2-Methylnaphthalene	1.303	1.231	5.5	77	0.00
10	T	1-Methylnaphthalene	1.202	1.126	6.3	76	0.00
11	T	2,6-Dimethylnaphthalene	1.161	1.023	11.9	72	0.00
12	T	1,6,7-Trimethylnaphthalene	1.139	1.028	9.7	73	0.00
13	un	C2-Naphthalenes	1.996	0.000	100.0#	0#	-18.24#
14	un	C3-Naphthalenes	1.996	0.000	100.0#	0#	-19.76#
15	un	C4-Naphthalenes	1.996	0.000	100.0#	0#	-22.27#
16	T	Benzothiophene	1.689	1.506	10.8	72	0.00
17	un	C1-Benzothiophenes	1.689	0.000	100.0#	0#	-15.79#
18	un	C2-Benzothiophenes	1.689	0.000	100.0#	0#	-18.11#
19	un	C3-Benzothiophenes	1.689	0.000	100.0#	0#	-20.04#
20	un	C4-Benzothiophenes	1.689	0.000	100.0#	0#	-21.89#
21	S	Acenaphthene-d10	0.974	0.926	4.9	78	0.00
22	T	Biphenyl	1.746	1.554	11.0	71	0.00
23	T	Acenaphthylene	1.941	1.739	10.4	71	0.00
24	T	Acenaphthene	1.136	1.021	10.1	73	0.00
25	T	Dibenzofuran	1.902	1.734	8.8	72	0.00
26	T	Fluorene	1.391	1.271	8.6	74	0.00
27	T	1-Methylfluorene	0.830	0.001	99.9#	0#	0.00
28	un	C1-Fluorenes	1.391	0.000	100.0#	0#	-23.28#
29	un	C2-Fluorenes	1.391	0.000	100.0#	0#	-25.51#
30	un	C3-Fluorenes	1.391	0.000	100.0#	0#	-26.79#
31	I	Pyrene-d10	1.000	1.000	0.0	81	0.00
32	S	Phenanthrene-d10	0.791	0.792	-0.1	79	0.00
33	T	Carbazole	0.845	0.714	15.5	66	-0.01
34	T	Dibenzothiophene	1.017	0.945	7.1	72	0.00
35	T	4-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-25.67#
36	un	2/3-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-25.96#
37	un	1-Methyldibenzothiophene	0.701	0.000	100.0#	0#	-26.28#
38	un	C2-Dibenzothiophenes	1.017	0.000	100.0#	0#	-27.07#
39	un	C3-Dibenzothiophenes	1.017	0.000	100.0#	0#	-29.25#
40	un	C4-Dibenzothiophenes	1.017	0.000	100.0#	0#	-30.04#
41	T	Phenanthrene	0.982	0.944	3.9	74	0.00
42	T	Anthracene	0.939	0.884	5.9	73	0.00
43	un	3-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
44	un	2-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.34#
45	un	2-Methylanthracene	0.789	0.000	100.0#	0#	-26.70#
46	un	4/9-Methylphenanthrene	0.789	0.000	100.0#	0#	-26.70#
47	T	1-Methylphenanthrene	0.789	0.715	9.4	72	0.00
48	T	3,6-Dimethylphenanthrene	0.697	0.000	100.0#	0#	-27.78#
49	T	Retene	0.385	0.000	100.0#	0#	-30.47#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123I.D
Acq On : 2 Oct 2014 7:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 05 10:04:43 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)
50	un	C2-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-28.33#
51	un	C3-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-29.70#
52	un	C4-Phenanthrenes/Anthracene	0.982	0.000	100.0#	0#	-31.29#
53	T	Naphthobenzothiophene	1.174	0.000	100.0#	0#	-32.73#
54	un	C1-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-34.32#
55	un	C2-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.07#
56	un	C3-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-36.89#
57	un	C4-Naphthobenzothiophenes	1.174	0.000	100.0#	0#	-37.79#
58	T	Fluoranthene	1.182	1.120	5.2	72	0.00
59	T	Pyrene	1.286	1.245	3.2	73	-0.02
60	T	2-Methylfluoranthene	0.819	0.000	100.0#	0#	-30.23#
61	T	Benzo(b)fluorene	0.773	0.000	100.0#	0#	-30.84#
62	un	C1-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.61#
63	un	C2-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-31.88#
64	un	C3-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-33.16#
65	un	C4-Fluoranthenes/Pyrenes	1.182	0.000	100.0#	0#	-35.11#
66	S	Chrysene-d12	1.084	1.079	0.5	76	-0.02
67	T	Benz(a)anthracene	1.232	1.128	8.4	71	-0.02
68	T	Chrysene/Triphenylene	1.230	1.181	4.0	73	0.00
69	un	C1-Chrysenes	1.230	0.000	100.0#	0#	-34.96#
70	un	C2-Chrysenes	1.230	0.000	100.0#	0#	-36.52#
71	un	C3-Chrysenes	1.230	0.000	100.0#	0#	-37.51#
72	un	C4-Chrysenes	1.230	0.000	100.0#	0#	-37.75#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	76	-0.02
74	un	C29-Hopane	0.515	0.000	100.0#	0#	-40.55#
75	un	18a-Oleanane	0.515	0.000	100.0#	0#	-41.47#
76	T	C30-Hopane	0.515	0.000	100.0#	0#	-42.46#
77	T	Benzo(b)fluoranthene	1.163	1.191	-2.4	74	-0.02
78	T	Benzo(k,j)fluoranthene	1.150	1.100	4.3	69	-0.02
79	un	Benzo(a)fluoranthene	1.150	0.000	100.0#	0#	-37.07#
80	T	Benzo(e)pyrene	1.430	1.308	8.5	66	-0.02
81	T	Benzo(a)pyrene	1.236	1.209	2.2	71	-0.02
82	T	Indeno(1,2,3-c,d)pyrene	1.654	1.491	9.9	67	-0.03
83	T	Dibenzo(a,h)anthracene	1.306	1.196	8.4	68	-0.03
84	un	C1-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-47.46#
85	un	C2-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-49.13#
86	un	C3-Dibenzo(a,h)anthracenes	1.306	0.000	100.0#	0#	-48.44#
87	T	Benzo(g,h,i)perylene	1.463	1.393	4.8	70	-0.04
88	S	Perylene-d12	1.116	1.113	0.3	73	-0.02
89	T	Perylene	1.414	1.281	9.4	66	-0.02
90	S	5(b)H-Cholane	0.271	0.263	3.0	75	0.00
91	un	C20-TAS	0.271	0.000	100.0#	0#	-33.41#
92	un	C21-TAS	0.271	0.000	100.0#	0#	-33.99#
93	un	C26(20S)-TAS	0.271	0.000	100.0#	0#	-38.42#
94	un	C26(20R)/C27(20S)-TAS	0.271	0.000	100.0#	0#	-39.13#
95	un	C28(20S)-TAS	0.271	0.000	100.0#	0#	-40.38#
96	un	C27(20R)-TAS	0.271	0.000	100.0#	0#	-40.38#
97	un	C28(20R)-TAS	0.271	0.000	100.0#	0#	-41.30#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70123\
Data File : MS70123I.D
Acq On : 2 Oct 2014 7:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 05 10:04:43 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123I.D
Acq On : 2 Oct 2014 7:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 05 10:04:43 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.189	176	270501	251.05			0.00
31) Pyrene-d10	29.410	212	563461	250.63			0.00
73) Benzo(a)pyrene-d12	38.131	264	605156	250.32			-0.02
System Monitoring Compounds							
2) Naphthalene-d8	13.565	136	432243	239.43			0.00
21) Acenaphthene-d10	19.415	164	249715	237.96			0.00
32) Phenanthrene-d10	24.508	188	445370	250.29			0.00
66) Chrysene-d12	33.584	240	606684	249.03			-0.02
88) Perylene-d12	38.441	264	672644	249.25			-0.02
90) 5(b)H-Cholane	33.990	217	159176	243.16			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.931	138	80234m	227.55			
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	13.629	128	483088	224.58			99
9) 2-Methylnaphthalene	15.876	142	329171	234.50			100
10) 1-Methylnaphthalene	16.200	142	301850	232.99			95
11) 2,6-Dimethylnaphthalene	17.961	156	275193	220.06			85
12) 1,6,7-Trimethylnaphtha...	20.822	170	277562	226.08			99
13) C2-Naphthalenes	0.000		0	N.D.			
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.797	134	404432	222.20			100
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	17.444	154	417470	221.87			92
23) Acenaphthylene	18.926	152	468006	223.78			98
24) Acenaphthene	19.513	154	276610	225.89			96
25) Dibenzofuran	20.111	168	466249	227.52			100
26) Fluorene	21.284	166	337468	225.24			99
27) 1-Methylfluorene	23.278	180	168	0.19		#	45
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	25.333	167	400198	210.56			100
34) Dibenzothiophene	24.159	184	525154	229.76			97
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	24.592	178	528770	239.47			98
42) Anthracene	24.760	178	497487	235.65			96
43) 3-Methylphenanthrene	0.000		0	N.D.			
44) 2-Methylphenanthrene	0.000		0	N.D.			
45) 2-Methylanthracene	0.000		0	N.D.	d		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123I.D
Acq On : 2 Oct 2014 7:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 05 10:04:43 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration

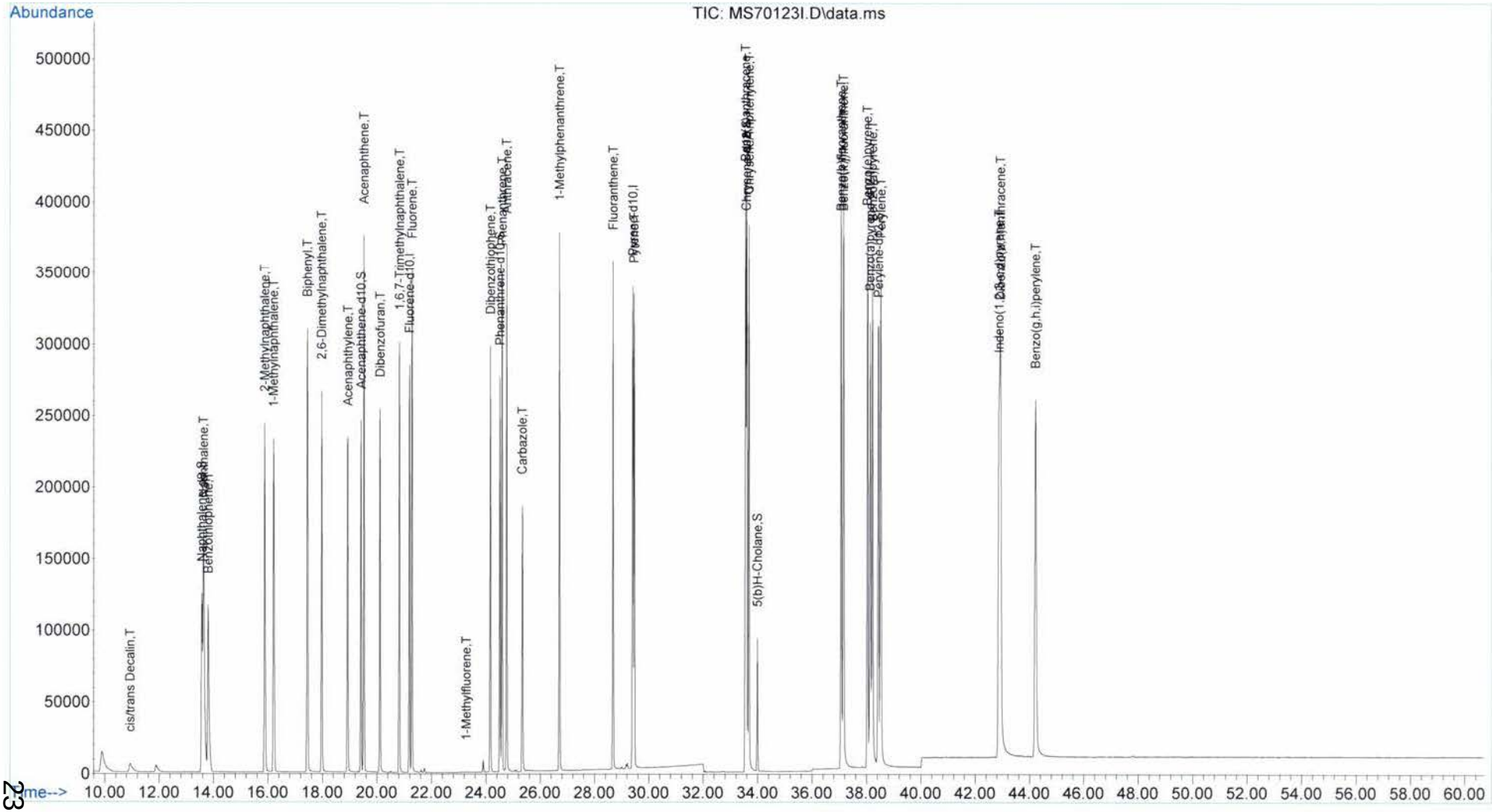
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.703	192	399193	225.08			98
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d		
49) Retene	0.000		0	N.D.	d		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	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	28.676	202	633740	238.58		#	100
59) Pyrene	29.451	202	700291	242.19		#	100
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	33.545	228	627651	226.65			99
68) Chrysene/Triphenylene	33.681	228	657671	237.83			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	0.000		0	N.D.	d		
77) Benzo(b)fluoranthene	37.066	252	716706	254.82			99
78) Benzo(k,j)fluoranthene	37.152	252	666346	239.69			100
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.028	252	792602	229.22			98
81) Benzo(a)pyrene	38.217	252	729963	244.39			100
82) Indeno(1,2,3-c,d)pyrene	42.876	276	901167	225.42			99
83) Dibenzo(a,h)anthracene	42.927	278	717214	227.16			90
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	44.219	276	830018	234.69			96
89) Perylene	38.527	252	774142	226.50		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70123\
Data File : MS70123I.D
Acq On : 2 Oct 2014 7:42 pm
Operator : ECM(YMIAO)
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 05 10:04:43 2014
Quant Method : C:\GCMS7\MS70123\AR70123.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Fri Oct 03 17:17:21 2014
Response via : Initial Calibration



237

PAH Mass Discrimination Ratio

B&B Laboratories
Project J13034
Report 14-3309

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Mass Discrimination Sheet

Client Project #B0086002.1401

File Name	Sample Name	Benzo(g,h,i)perylene Concentration (ng/mL)	Phenanthrene Concentration (ng/mL)	Benzo(g,h,i)perylene/ Phenanthrene ratio	Q
MS70123B.D	PAH-WKC1-020-034	18.9	18.8	1.00	
MS70123C.D	PAH-WKC2-100-034	101	102	0.99	
MS70123D.D	PAH-WKC3-250-034	252	260	0.97	
MS70123E.D	PAH-WKC4-500-034	510	541	0.94	
MS70123F.D	PAH-WKC5-1000-034	1056	1107	0.95	
MS70123G.D	PAH-WKC6-5000-034	4393	3965	1.11	
MS70123I.D	PAH-WKICV-250-008	235	239	0.98	
MS70123J.D	PAH-WKCCV-250-042	250	266	0.94	
MS70123L.D	PAH-WKCCV-250-042	225	253	0.89	
MS70123m.D	PAH-WKCCV-250-042	180	251	0.71	

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 14-3309

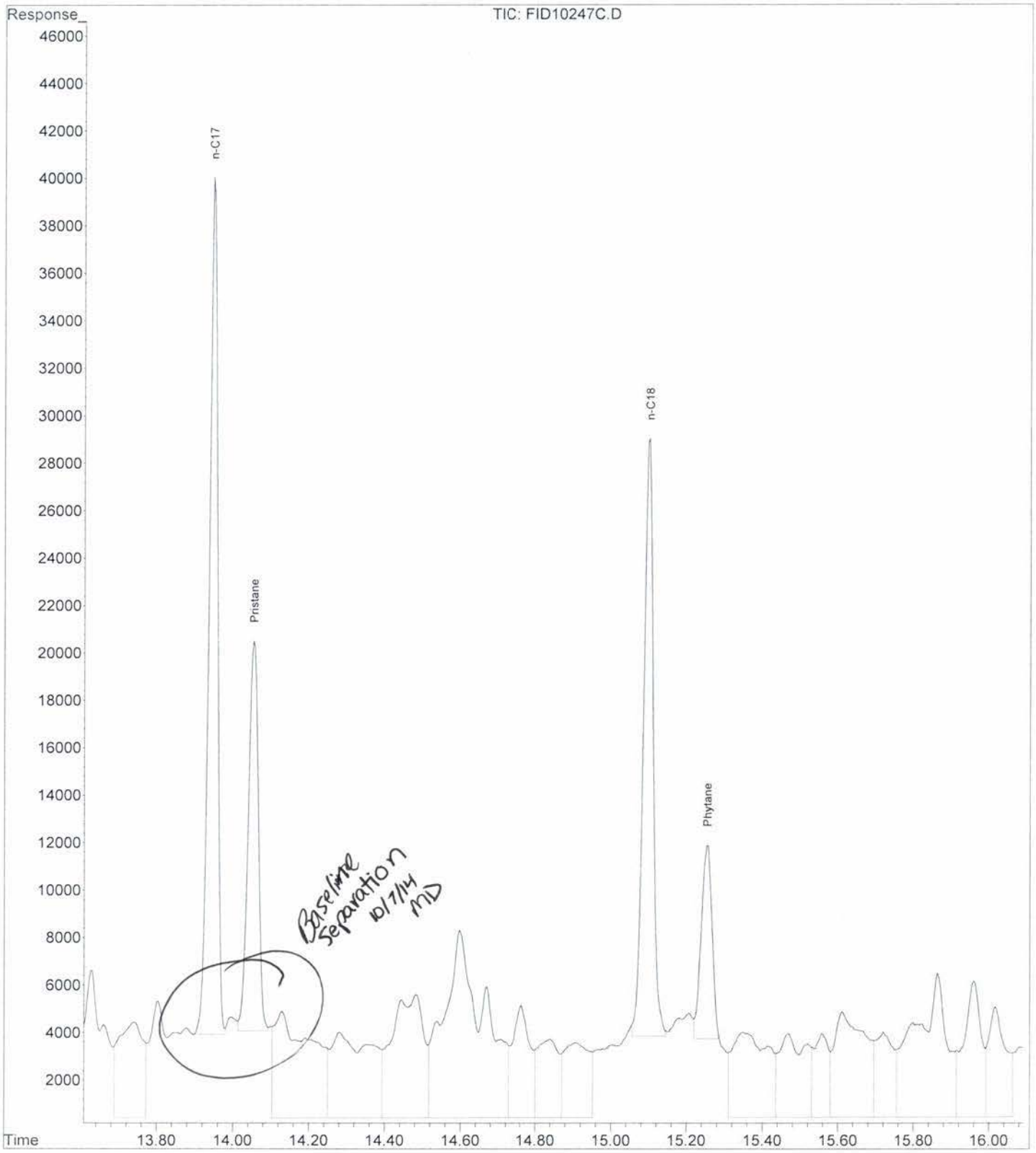
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
The Area of the Internal Standards in the Associated Calibration Standard

Client Project #B0086002.1401

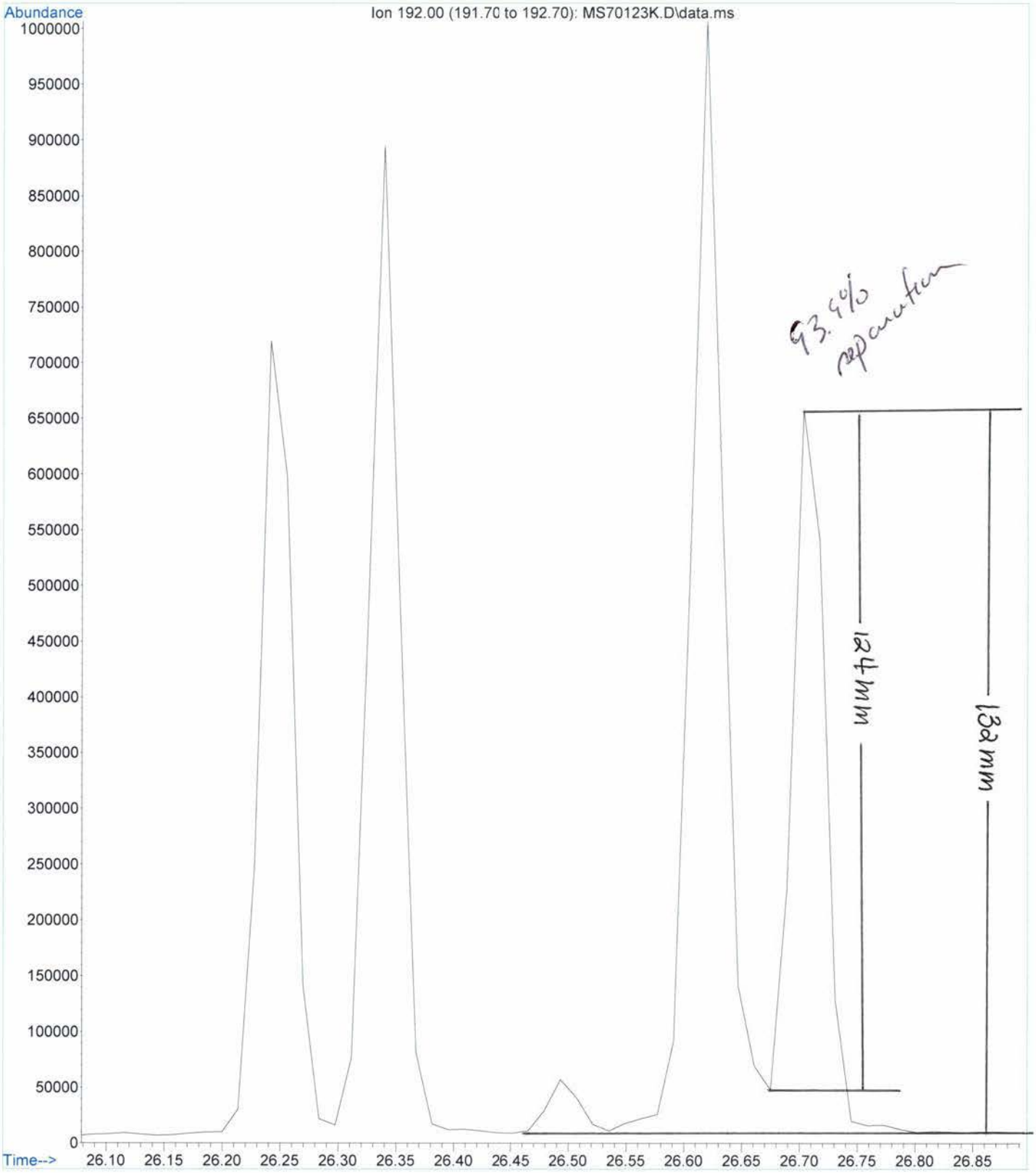
File Name	Sample Name	Internal Standard 1 Fluorene-d10				Internal Standard 2 Pyrene-d10				Internal Standard 3 Benzo(a)pyrene-d12			
		Response (Area)	50% (Area)	200% (Area)	Q	Response (Area)	50% (Area)	200% (Area)	Q	Response (Area)	50% (Area)	200% (Area)	Q
MS70123D.D	**PAH-WKC3-250-034**	**326625**	**163313**	**653250**		**699192**	**349596**	**1398384**		**800224**	**400112**	**1600448**	
MS70123I.D	PAH-WKICV-250-008	270501				563461				605156			
MS70123J.D	**PAH-WKCCV-250-042**	**269675**	**134838**	**539350**		**560861**	**280431**	**1121722**		**609829**	**304915**	**1219658**	
MS70123K.D	PAH-WKSRM2779-4.0-005	288534				622033				712463			
ENV3341A.D	Method Blank	281559				597711				649038			
ENV3341B.D	Blank Spike	264568				558960				618444			
ENV3341C.D	Blank Spike Dupl.	290759				613287				677459			
ARC2055.D	SHN-Cove-006(NB)092514	347095				723900				779823			
ARC2056.D	SHN-Cove-007(NB)092514	291285				635381				716213			
ARC2057.D	SHN-Cove-008(NB)092514	300004				630913				706440			
MS70123L.D	**PAH-WKCCV-250-042**	**264498**	**132249**	**528996**		**577073**	**288537**	**1154146**		**627734**	**313867**	**1255468**	
ARC2058.D	SHN-Cove-009(NB)092914	290809				561097				239695			*
MS70123m.D	**PAH-WKCCV-250-042**	**299795**	**149898**	**599590**		**658512**	**329256**	**1317024**		**590823**	**295412**	**1181646**	

SRM-2779 Reference Oil Aliphatic and PAH Resolution Checks

File :P:\2013\J13034\Aliphatics\ENV 3341\FID10247\FID10247C.D
Operator : Meghan Dailey
Acquired : 06-Oct-2014, 16:18 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: AL-SRM2779-20-003
Misc Info :
Vial Number: 3



```
File        :C:\GCMS7\MS70123\MS70123K.D
Operator    : ECM(YMIAO)
Acquired    :  2 Oct 2014  10:01 pm using AcqMethod PAH-2014.M
Instrument :   GCMS 7
Sample Name: PAH-WKSRM2779-4.0-005
Misc Info  :
Vial Number: 11
```



Supporting Documents

Shipping, Sample Receiving, and Project Initiation Documents

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 09/26/14 SDG#: 14092601

Sender: Arcadis - Mayflower Pipeline Incident - David Drost

1. Number of Shipping Containers: 1

Comments: Medium Blue Cooler

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

Airbill Number: 8061 0460 5661 Comments: Priority Overnight

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: 478504

4. Chain of Custody Records?
No (Yes) Comments N/A

5. General Sample Conditions:
Frozen (Cool) Unrefrigerated
Dry Ice Blue Ice (Ice) Temperature/Comments: 5.6°C (T6

6. List of Broken Containers:

NONE

7. Number of Samples Expected: 3 Number of Samples Received: 3 nets

8. Problems/Discrepancies:

Labels do not match CoC

9. Resolutions:

will email client on how to proceed.

10. Checked in by: Kurt Hebler Date: 09/26/14

custody seal intact
wet ice
To, 5.6°c

Medium
blue cooler

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8061 0660 5661

om
te 9.25.14
nder's me David Drost Phone 408 220-3618
mpany ARCADIS
dress 113 Trellis Ln.
Dept./Floor/Suite/Room
y Ladson State SC ZIP 29456
ur Internal Billing Reference B0086022.1402.00601
cipient's me Amanda Brewster Phone
mpany B&B Laboratories
ldress 14391 B South Dowling Rd
cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room
ldress
y College Station State TX ZIP 77845

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

8061 0660 5661

4 Express Pa
NOTE: Service an
Next Busines
FedEx First Ov
FedEx Priority
FedEx Standar
5 Packaging
FedEx Envelop
6 Special Har
SATURDAY De
No Signature F
Does this shipm
No
7 Payment
Sender
Total Packages 1 2

ORIGIN ID:MPJA (315) 446-7123
ARCADIS
6723 TOWPATH RD
SYRACUSE, NY 13214
UNITED STATES US

SHIP DATE: 25SEP14
ACTWGT: 23.8 LB
CAD: /POS1501
DIMS: 19x13x11 IN
BILL SENDER

TO AMANDA BREWSTER
B AND B LABS
14391 S DOWLING RD
B
COLLEGE STATION TX 77845
(979) 693-3446 REF:
INV:
PO: DEPT:

5061 A 2 819 09.20

TRK# 0200 8061 0660 5661

FRI - 26 SEP 10:30A
PRIORITY OVERNIGHT

XH CLLA

77845
TX-US IAH

8061 0660 5661

Sdg 1409 2601
Cooler 1 of 1

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: XOM
Project ID: Mayflower Pipeline Incident
B&B Contact: Amanda Brewster
Sampler Signature: D. Dent

Analyses

Other Instructions: SDG 140926O1 Cooler 1 of 1

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	PAH (B&B 1006)	Alphatics/TPH (1016)					Comments
SHN-CONE-006(NB) 0925H	9.25.14	1340	T	N/A	250ml	1	X	X					label missing "092514"
SHN-CONE-007(NB)092514	9.25.14	1350	T	N/A	250ml	1	X	X					label missing "092514"
SHN-CONE-008(NB)092514	9.25.14	1400	T	N/A	250ml	1	X	X					label missing "092514"

Total # of Containers: 3

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: DAVID DOST	ACCADIS	9.25.17	1700	Printed Name: Amanda Brewster	B:B Labs	9/26/14	11:45
Signature: D. Dent				Signature: amanda Brewster			
Printed Name:				Printed Name:			
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

Report # 14-3309

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 14092601
Client: Arcadis - Mayflower AR
Initiation Date: 09/26/14

Number of Samples: 3
Matrix: ~~SHEEN~~ QB 9/26/14 net
Due Date: 45 days: 11/10/14
Comments:

Analyses

- [x] PAHs
- [ ] OCs/PCBs
- [x] Aliphatics/TPH
- [x] EOM
- [ ] Dry Wt.
- [ ] %Lipid
- [ ] TOC/TIC
- [ ] ____
- [x] Short Columns
- [ ] Long Columns
- [ ] ____
- [ ] ____

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

- [x] Blank
- [ ] SRM/LCS ____
- [x] Blank Spike
- [ ] Blank Spike Duplicate
- [ ] Matrix Spike ____
- [ ] Matrix Spike Duplicate ____
- [ ] Duplicate ____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ACI Volume(s): 100ml
Spike Standard(s): PAH, ACI Volume(s): 100ml
Internal Standard(s): PAH, ACI Volume(s): 100ml
Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

Sample Custodian Signature: [signature] Date: 09/26/14
Project Administrator Signature: [signature] Date: 09/26/14

Sample Initiation – general Rev 0.doc
Rev 0

cc: COC Book
Extraction Lab

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
66825	J13034	Arcadis - Mayflower AR	ARC2055	SHN-Cove-006(NB)092514	09/25/14	09/26/14	PAH, TPH, ALI	NET	label does not match COC	14092601	Cooler 1	Arcadis: David Drost	8oz clear glass jar	B0086022.1401
66826	J13034	Arcadis - Mayflower AR	ARC2056	SHN-Cove-007(NB)092514	09/25/14	09/26/14	PAH, TPH, ALI	NET	label does not match COC	14092601	Cooler 1	Arcadis: David Drost	8oz clear glass jar	B0086022.1401
66827	J13034	Arcadis - Mayflower AR	ARC2057	SHN-Cove-008(NB)092514	09/25/14	09/26/14	PAH, TPH, ALI	NET	label does not match COC	14092601	Cooler 1	Arcadis: David Drost	8oz clear glass jar	B0086022.1401

Amanda Brewster

From: Parmelee, Rhiannon <Rhiannon.Parmelee@arcadis-us.com>
Sent: Wednesday, September 24, 2014 9:08 AM
To: 'Amanda J. Brewster' (amandabrewster@tdi-bi.com); Juan Ramirez (juanramirez@tdi-bi.com)
Cc: Patil, Sonal; Drost, Dave
Subject: Mayflower - upcoming sheen samples

Amanda-
As a heads up, we will be sending about three sheen samples to you for arrival Friday morning (priority overnight).

Can you also send invoices for Q3 storage and the most recent sheen sample come to us by September 30 so that we can include in our Period 9 invoice to ExxonMobil?

Thanks,
-Rhiannon

Rhiannon Parmelee, P.E. | Senior Environmental Engineer | rhiannon.parmelee@arcadis-us.com

ARCADIS U.S., Inc. | 630 Plaza Drive, Suite 100 | Highlands Ranch, CO 80129
T: 303 471 3904 | M: 206 914 9625
www.arcadis-us.com

ARCADIS, Imagine the result

Professional Registration/PE-WA, AR, MT
Please consider the environment before printing this email.

8061066056 61

Amanda Brewster

From: Amanda Brewster <amandabrewster@tdi-bi.com>
Sent: Friday, September 26, 2014 2:19 PM
To: 'Drost, Dave'
Cc: 'juanramirez@tdi-bi.com'; 'donellfrank@tdi-bi.com'; 'tommcdonald@tdi-bi.com'; 'Parmelee, Rhiannon'; 'Chandler, Jennifer'; 'Patil, Sonal'; 'kurtkibler@tdi-bi.com'
Subject: RE: COC Mayflower Pipeline Incident 9-25-14
Attachments: COC 9-26-14.pdf

Hi Dave/Rhiannon,

We received your samples this morning in good condition.
The internal temperature of the cooler was 5.6ºC.
A PDF of the COC is attached for your records.

Regards,
Amanda

From: Drost, Dave [mailto:Dave.Drost@arcadis-us.com]
Sent: Friday, September 26, 2014 12:24 PM
To: Amanda Brewster
Cc: juanramirez@tdi-bi.com; donellfrank@tdi-bi.com; tommcdonald@tdi-bi.com; Parmelee, Rhiannon; Chandler, Jennifer; Patil, Sonal
Subject: Re: COC Mayflower Pipeline Incident 9-25-14

Per the COC please. There wasn't sufficient room on the label.

Sent from Dave Drost's iPhone

On Sep 26, 2014, at 12:16 PM, Amanda Brewster <amandabrewster@tdi-bi.com> wrote:

> Hi Dave/Rhiannon,
>
> Quick question... the COC for these samples has each id ending in "092514" but the sample labels are missing this information.
> How would you like for these to be logged into our records?
>
> Regards,
> Amanda
>
> ---
>
> **From:** Drost, Dave [mailto:Dave.Drost@arcadis-us.com]
> **Sent:** Thursday, September 25, 2014 5:33 PM
> **To:** Amanda Brewster
> **Cc:** juanramirez@tdi-bi.com; donellfrank@tdi-bi.com; tommcdonald@tdi-bi.com; Parmelee, Rhiannon; Chandler, Jennifer; Patil, Sonal
> **Subject:** Re: COC Mayflower Pipeline Incident 9-25-14

Please see photo for tracking information.

Sent from Dave Drost's iPhone

On Sep 25, 2014, at 5:00 PM, Amanda Brewster <amandabrewster@tdi-bi.com> wrote:

> Hi David,
>
> Could you please send me tracking information for this shipment?
>
> Regards,
> Amanda

From: Drost, Dave [mailto:Dave.Drost@arcadis-us.com]
Sent: Thursday, September 25, 2014 4:52 PM
To: amandabrewster@tdi-bi.com
Cc: juanramirez@tdi-bi.com; donellfrank@tdi-bi.com; tommcdonald@tdi-bi.com; Parmelee, Rhiannon; Chandler, Jennifer; Patil, Sonal
Subject: COC Mayflower Pipeline Incident 9-25-14

Included is the COC Sent from Dave Drost's iPhone

Office. 843.375.5990 | Cell. 408.220.3618 | www.arcadis-us.com

ARCADIS, Imagine the result
Please consider the environment before printing this email.

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 9/30/14 SDG#: 1409 3001

Sender: Arcadis- Mayflower AR

1. Number of Shipping Containers: 1 Arcadis: David Drost

Comments: large blue cooler

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

Airbill Number: 8065 0305 3761

Comments: PON

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

Comments: seal on top of duct tape

4. Chain of Custody Records?
No (Yes)

Comments: N/A

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

Temperature/Comments: 8.8°C / no temp blank CT6

6. List of Broken Containers:

None

7. Number of Samples Expected: 1 net Number of Samples Received: 1 net

8. Problems/Discrepancies:

None

9. Resolutions:

N/A

10. Checked in by: amanda Brewster Date: 9/30/14

large blue cooler

Sdg 14093001
Cooler 1 of 1

custody seal intact
wet ice
T6, 8.8°C

eurofins | Lancaster Laboratories

478501
CUSTODY SEAL
2425 New Holland Pike, Lancaster, PA 17601-5994 (717) 656-2300

DATE: 9.29.14
SIGNATURE:

FedEx Express NEW Package US Airbill

FedEx tracking Number 8065 0305 3761

Form ID No. 0200

1 From
Date 9.29.14
Sender's Name [redacted] Phone 408 220-3618
Company Alcedis
Address 113 Trellis Ln
Dept./Floor/Suite/Room
City Capson State SC ZIP 29456

2 Your Internal Billing Reference B00860221402.00601

3 To
Recipient's Name Amanda Brewster Phone
Company B+B Laboratories
Address 14391 B.S. Dowling Rd
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 College Station State TX ZIP 77845

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
NOTE: Service order has changed. Please select carefully.
Packages up to 150 lbs.

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.
- [x] 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
- [ ] 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
- [ ] FedEx Envelope* [ ] FedEx Pak* [ ] FedEx Box [ ] FedEx Tube [x] Other

6 Special Handling and Delivery Signature Options
- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver
- [x] 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?
One box must be checked.
- [x] 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.
- [x] Sender Acct. No. in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages 1 Total Weight 20.15 lbs.
Credit Card Auth.

*Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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8065 0305 3761

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: XOM
Project ID: Mayflower Pipeline Incident
B&B Contact: Amanda Brewster
Sampler Signature: D. Davis

Analyses

Other Instructions: sdg 14093001 Cooler 1 of 1

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	PAH's (B&B 1006)	Aliphatics/TPH (1016)					Comments
✓ SHN-LOVE-009 (NB) 092914	9.29.14	1400	NET	N/A	G	1	X	X					
					Total # of Containers	1							

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: David Frost	Arcadis	9.29.14	1700	Printed Name: Amanda Brewster	B&B Labs	9/30/14	10:10
Signature:				Signature: amanda Brewster			
Printed Name:				Printed Name:			
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

Report 14-3309

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 14093001
Client: Arcadis - Mayflower AR
Initiation Date: 9/30/14

Number of Samples: 1
Matrix: net
Due Date: 45 days: 11/14/14
Comments:

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): 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:

Sample Custodian Signature: amanda Brewster Date: 9/30/14
Laboratory Manager Signature: _____ Date: 9/30/14

Sample Initiaiton - general Rev 1.doc
Rev 1

cc: COC Book
Extraction Lab

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
66828	J13034	Arcadis - Mayflower AR	ARC2058	SHN-Cove-009(NB)092914	09/29/14	09/30/14	PAH, TPH, ALI	NET		14093001	Cooler 1	Arcadis: David Drost	8oz clear glass jar	B0086022.1401

Amanda Brewster

From: Amanda Brewster <amandabrewster@tdi-bi.com>
Sent: Tuesday, September 30, 2014 11:31 AM
To: 'Drost, Dave'
Cc: 'juanramirez@tdi-bi.com'; 'donellfrank@tdi-bi.com'; 'tommcdonald@tdi-bi.com'; 'Parmelee, Rhiannon'; 'Chandler, Jennifer'; 'Patil, Sonal'; 'kurtkibler@tdi-bi.com'
Subject: RE: COC/Tracking Mayflower Pipeline Incident 9-29-14
Attachments: COC 9-30-14.pdf

Hi Dave/Rhiannon,

We received your sample this morning in good condition.
The internal temperature of the cooler was 8.8ºC.
A PDF of the COC is attached for your records.

Do you know of any additional samples coming for this project in the near future?

Regards,
Amanda

From: Drost, Dave [mailto:Dave.Drost@arcadis-us.com]
Sent: Tuesday, September 30, 2014 7:19 AM
To: Amanda Brewster
Cc: juanramirez@tdi-bi.com; donellfrank@tdi-bi.com; tommcdonald@tdi-bi.com; Parmelee, Rhiannon; Chandler, Jennifer; Patil, Sonal; kurtkibler@tdi-bi.com
Subject: COC/Tracking Mayflower Pipeline Incident 9-29-14

Included is the COC and tracking number for the sample sent 9-29-14, it should be arriving this morning via FedEx priority overnight. If you have any questions please do not hesitate to contact me.

Dave

David E. Drost | Surveyor | ddrost@arcadis-us.com Linkedin

ARCADIS U.S., Inc. | 194 Seven Farms Dr., Ste. F | Charleston, SC 29492
Office. 843.375.5990 | Cell. 408.220.3618 | www.arcadis-us.com

ARCADIS, Imagine the result
Please consider the environment before printing this email.

Laboratory Bench Sheet Logs

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

14093001 +

MATRIX
- [X] OTHER
- [ ] WATER
- [ ] SEDIMENT
- [ ] TISSUE

Nets

Job #: J13034 SDG #: 14092601

Client: Arcadis - Mayflower AR

Analysis: [X] PAH [ ] PESTS [ ] PCB [X] 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: PAH-WKIS-2500-007 Bottle 1 of 3
Pest/PCB: ——— Bottle ___ of ___
Aliphatic: AL-WKIS-200-003 Bottle 3 of 7
Other: ——— Bottle ___ of ___

Spike: 100 µL
PAH: PAH-WKIS-100-030 Bottle 1 of 1
Pest/PCB: ——— Bottle ___ of ___
Aliphatic: AL-WKIS-100-022 Bottle 1 of 1
Other: ——— Bottle ___ of ___

GC Int Std: 100 µL
PAH: PAH-WKIS-2500-007 Bottle 1 of 3
Pest/PCB: ——— Bottle ___ of ___
Aliphatic: AL-WKIS-500-003 Bottle 3 of 7
Other: ——— Bottle ___ of ___

Turbo Vap
Bath T (C):
Pressure (>20psi):
Check Water Level:
Turbo Vap Date:

General Comments:

Report 14-3309

	Added	Witness
Surrogate:	9/30/14 CSS	9/30/14 HA
Spike:	9/30/14 CSS	9/30/14 HA
Internal:	10/1/14 SM	10/1/14 CK

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Extraction Comments
1	ENV3341A	Method Blank	–			150 mL DCM (3 x 50 mL) 9/30/14 CSS
2	ENV3341B	Blank Spike	–			
3	ENV3341C	Blank Spike Duplicate	–			
4	ARC2055	SHN-Cove-006(NB)092514	1 net			
5	ARC2056	SHN-Cove-007 (NB)092514	1 net			
6	ARC2057	SHN-Cove-008 (NB)092514	1 net			
7	ARC2058	SHN-Cove-009 (NB)092914	1 net			
8						
9						
10						
11						
12						

Internal Chain of Custody

Extraction Prep	
Date: 9/30/14	Date: 9/30/14
Initials: CSS	Initials: CSS
Extraction	
Date: 9/30/14	Date: 9/30/14
Initials: CSS	Initials: CSS
Concentration	
Date: 9/30/14	Date: 9/30/14
Initials: CSS	Initials: CSS
Short Columns	
Date: 10-1-14	Date: 10-1-14
Initials: EW	Initials: EW

ENV 3341

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						
17						
18						
19						
20						
21						
22						
23						
24						

Internal Chain of Custody

Concentration Short Columns	
Date: 10-1-14	Date: 10-1-14
Initials:	Initials:
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: 10/1/14	Initials: QC

Dry Weight Page

—

Lipid/EOM Page

EOM 1158

Clean-up/Separation/Other Columns

—

Lot Numbers

DCM: I735754
Hexane: —
Hydromatrix: —
Water: DK943-B
Silica: BCBM8451V
Alumina: VB23LZEMS
Sodium Sulfate: 3143C513
Pentane: —
Copper: —
Hydrochloric Acid: —
SPE Columns: —
Other: —

Sample Storage Box #

#447

HPLC Storage Box #

—

QC Review

Date	Initials
10/1/14	[illegible]

Equipment Used

☐ ASE1 ☐ ASE3 ☐ HPLC1
☐ ASE2 ☐ PLE ☐ HPLC2

Copied to Folders

10/1/14 [illegible]

B&B LABORATORIES EOM LOGBOOK

MATRIX: (OTHER) SEDIMENT WATER

Job #: J13034 SDG #: 14093001 + 14092601

Client: Arcadis - Mayflower AR

General comments:

Lab Manager Date/Int: 10/1/14 ~~BST~~

Transferred by Date/Int: ~~9/~~ 10/1/14 CK From ENV Pg: ENV3341 From DRY Pg: —

Date/Int: 10/1/14 CK Bal. Cal. ✓

Date/Int: 10/1/14 CK

	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
											Scale
1	ENV3341A	Method Blank	1		3	29.755	29.758	0.003	90		10
2	ENV3341B	Blank Spike	1		3	29.728	29.735	0.007	210		10
3	ENV3341C	Blank Spike Duplicate	1		3	29.576	29.587	0.011	330		10
4	~~CK 9/30 ENV~~ ARC2055	SHN-Cove-006 (NB) 092514	1 net		3	29.720	34.537	4.817	144510		10 5x
5	ARC2056	SHN-Cove-007 (NB) 092514	1 net		3	29.516	29.777	0.261	7830		10
6	ARC2057	SHN-Cove-008 (NB) 092514	1 net		3	29.652	29.889	0.237	7110		10
7	ARC2058	SHN-Cove-009 (NB) 092414	1 net		3	29.814	35.215	5.401	162030		10 5x
8											
9											
10											
11											
12											

EOM 1158

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											

$$EOM = \frac{(EOM\ Wt.\ (mg))\ (Final\ Extract\ Vol.\ (ml))}{(Smpl\ Wt/Vol.\ (g/L))\ (0.10\ ml)} \times 1000$$

$$\%RPD = \frac{(EOM_1 - EOM_2)}{(EOM_1 + EOM_2) \times 0.5} \times 100\%$$

	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl Lipid Wt. (mg)
Solvent Blank	29.352	29.352	0.000
EOM Standard: EOM-WKLC-10-005	30.392	40.722	10.330

The Relative Percent Difference (RPD) between duplicates must be ≤ 25%.

Date/Int:	RPD
Sample:	
Duplicate:	

EOM 1158

Last Page

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

Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
October 20, 2014 Collection Date

Determination of:
Aliphatic Hydrocarbons (ALI), Total Petroleum Hydrocarbons (TPH), and Polycyclic Aromatic Hydrocarbons (PAHs) in a Net Sample

(QC Batch ENV 3351)

November 8, 2014

Technical Report 14-3319

Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
October 20, 2014 Collection Date
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B&B Laboratories
November 8, 2014

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Narrative

Technical Report 14-3319
Arcadis
Mayflower AR Project
(Contract # B0086022.1401)
Net Sample
October 20, 2014 Collection Date

November 8, 2014

Introduction

B&B Laboratories received a shipment of one (1) ice chest that was sent by David Drost of Arcadis using FedEx on October 21, 2014 and arrived on October 22, 2014 in College Station, Texas. The cooler arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	0.0°C no temperature blank	One (1) net sample in a 4 oz. glass jar.

The net sample was collected on October 20, 2014 in support of the Mayflower Pipeline Incident, (Arcadis-US Contract # B0086022.1401). The net sample was logged in according to B&B Laboratories standard operating procedure (B&B 1009) and was stored in an access-controlled refrigerator (4.0°C) prior to analysis. The sample receiving discrepancies are noted on the receiving/integrity report pages. The net sample was 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 TPH, ALI, PAH, selected hopane's, and TAS compounds in the net samples are included in this report.

Analytical Methods

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

Table 1. Standard Operating Procedures for each analytical test.

Matrix	Extraction	ALI/TPH	PAH
Net	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 method 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 a "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
Net	µg/net	µg/net	ng/net

Table 3. Data Qualifier Definitions.

Qualifier	Definition
B	Analyte detected in the method blank greater than 3X MDL
D	Diluted Value
E	Analyte concentration exceeds the calibration range of the GC/MS for that specific analysis.
I	Analytical interference
J	Analyte detected below the method detection limit
L	Loss due to matrix effect
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	**Net RLs**
Sample size	1 net, 1ml final extract
Unit of measure	µg/net
n-C9	0.35
n-C10	0.35
n-C11	0.35
n-C12	0.35
n-C13	0.35
i-c15	0.35
n-C14	0.35
i-c16	0.35
n-C15	0.35
n-C16	0.35
i-c18	0.35
n-C17	0.35
Pristane	0.35
n-C18	0.35
Phytane	0.35
n-C19	0.35
n-C20	0.35
n-C21	0.35
n-C22	0.35
n-C23	0.35
n-C24	0.35
n-C25	0.35
n-C26	0.35
n-C27	0.35
n-C28	0.35
n-C29	0.35
n-C30	0.35
n-C31	0.35
n-C32	0.35
n-C33	0.35
n-C34	0.35
n-C35	0.35
n-C36	0.35
n-C37	0.35
n-C38	0.35
n-C39	0.35
n-C40	0.35
Total Petroleum Hydrocarbons	20.0
Total Resolved Hydrocarbons	20.0
Unresolved Complex Mixture	20.0
Extractable Organic Matter	100

Table 4. Continued. Method Detection Limits.

PAH Sample size Unit of measure	Net RLs 1 net, 1ml final extract ng/net
cis/trans Decalin	10.0
C1-Decalins	10.0
C2-Decalins	10.0
C3-Decalins	10.0
C4-Decalins	10.0
Naphthalene	10.0
C1-Naphthalenes	10.0
C2-Naphthalenes	10.0
C3-Naphthalenes	10.0
C4-Naphthalenes	10.0
Benzothiophene	10.0
C1-Benzothiophenes	10.0
C2-Benzothiophenes	10.0
C3-Benzothiophenes	10.0
C4-Benzothiophenes	10.0
Biphenyl	10.0
Acenaphthylene	10.0
Acenaphthene	10.0
Dibenzofuran	10.0
Fluorene	10.0
C1-Fluorenes	10.0
C2-Fluorenes	10.0
C3-Fluorenes	10.0
Carbazole	10.0
Anthracene	10.0
Phenanthrene	10.0
C1-Phenanthrenes/Anthracenes	10.0
C2-Phenanthrenes/Anthracenes	10.0
C3-Phenanthrenes/Anthracenes	10.0
C4-Phenanthrenes/Anthracenes	10.0
Dibenzothiophene	10.0
C1-Dibenzothiophenes	10.0
C2-Dibenzothiophenes	10.0
C3-Dibenzothiophenes	10.0
C4-Dibenzothiophenes	10.0
Fluoranthene	10.0
Pyrene	10.0
C1-Fluoranthenes/Pyrenes	10.0
C2-Fluoranthenes/Pyrenes	10.0
C3-Fluoranthenes/Pyrenes	10.0
C4-Fluoranthenes/Pyrenes	10.0
Naphthobenzothiophene	10.0
C1-Naphthobenzothiophenes	10.0
C2-Naphthobenzothiophenes	10.0
C3-Naphthobenzothiophenes	10.0
C4-Naphthobenzothiophenes	10.0
Benz(a)anthracene	10.0
Chrysene/Triphenylene	10.0
C1-Chrysenes	10.0

PAH (continued) Sample size Unit of measure	**Net RLs** 1 net, 1ml final extract ng/net
C2-Chrysenes	10.0
C3-Chrysenes	10.0
C4-Chrysenes	10.0
Benzo(b)fluoranthene	10.0
Benzo(k,j)fluoranthene	10.0
Benzo(a)fluoranthene	10.0
Benzo(e)pyrene	10.0
Benzo(a)pyrene	10.0
Perylene	10.0
Indeno(1,2,3-c,d)pyrene	10.0
Dibenzo(a,h)anthracene	10.0
Benzo(g,h,i)perylene	10.0
Individual Alkyl Isomers,TAS, and Hopanes	
2-Methylnaphthalene	10.0
1-Methylnaphthalene	10.0
2,6-Dimethylnaphthalene	10.0
1,6,7-Trimethylnaphthalene	10.0
1-Methylfluorene	10.0
4-Methyldibenzothiophene	10.0
2/3-Methyldibenzothiophene	10.0
1-Methyldibenzothiophene	10.0
3-Methylphenanthrene	10.0
2/4-Methylphenanthrene	10.0
2-Methylanthracene	10.0
9-Methylphenanthrene	10.0
1-Methylphenanthrene	10.0
3,6-Dimethylphenanthrene	10.0
Retene	10.0
2-Methylfluoranthene	10.0
Benzo(b)fluorene	10.0
C29-Hopane	10.0
18a-Oleanane	10.0
C30-Hopane	10.0
C20-TAS	10.0
C21-TAS	10.0
C26(20S)-TAS	10.0
C26(20R)/C27(20S)-TAS	10.0
C28(20S)-TAS	10.0
C27(20R)-TAS	10.0
C28(20R)-TAS	10.0

Quality Assurance/Quality Control – Net

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

The quality assurance/quality control procedure for this program included the analyses of a method 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. Method 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 QA criterion for RPDs for valid laboratory 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 method blank and a blank spike/blank spike duplicate of no more than 20 samples. A standard reference oil (NIST 2779) was analyzed with this data set. Method 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 – Net

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.

Method 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.

Method 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

- The concentrations reported for the C1-Naphthalenes, C1-Dibenzothiophenes, and the C1-Phenanthrene/Anthracenes are calculated using the RRF of the parent compound (Naphthalene, Dibenzothiophene, and Phenanthrene). The concentration of these individual isomers is based on their RRF or an individual isomer from the same family.

- 150mL of solvent was used to extract the organic material from the submitted net samples. The same amount of solvent was used for the method blank, the blank spike and blank spike duplicate. The internal QC samples are reported as either amount (µg) for the aliphatic and TPH analytes or amount (ng) for the PAH analytes. The net samples are reported as µg/net for the aliphatic and TPH analytes or ng/net for the PAH analytes.

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.
Method 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 to 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 RSD ≤ 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.
Method 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 14-3319

Arcadis - Mayflower AR
Sample Inventory

Client Project #B0086002.1401

#	File Number	Client Identification	Collection Date	Received Date	Analysis	Matrix	Comments	B&B SDG	Client Project #
1	ARC2059	SHN-Cove-010(NB)102014	10/20/14	10/22/14	PAH, TPH, ALI	Net		14102201	B0086022.1401

Other (Net) Samples

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

Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC2059.D
Client Name	SHN-Cove-010(NB)102014
Matrix	Net
Collection Date	10/20/14
Received Date	10/22/14
Extraction Date	10/23/14
Extraction Batch	ENV 3351
Date Acquired	24-Oct-2014, 06:06:55
Method	ALIFRONT.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/net)	Q
n-C9	<0.35	U
n-C10	<0.35	U
n-C11	<0.35	U
n-C12	<0.35	U
n-C13	<0.35	U
i-C15	<0.35	U
n-C14	<0.35	U
i-C16	<0.35	U
n-C15	<0.35	U
n-C16	<0.35	U
i-C18	<0.35	U
n-C17	0.091	J
Pristane	<0.35	U
n-C18	0.091	J
Phytane	<0.35	U
n-C19	0.080	J
n-C20	0.055	J
n-C21	0.102	J
n-C22	0.027	J
n-C23	0.048	J
n-C24	0.119	J
n-C25	0.077	J
n-C26	0.130	J
n-C27	0.283	J
n-C28	0.820	
n-C29	0.474	
n-C30	0.436	
n-C31	0.684	
n-C32	0.487	
n-C33	0.482	
n-C34	0.307	J
n-C35	0.186	J
n-C36	0.133	J
n-C37	0.133	J
n-C38	0.098	J
n-C39	0.098	J
n-C40	0.102	J
Total Alkanes	5.5	
Total Petroleum Hydrocarbons	40	
Total Resolved Hydrocarbons	19	J
Unresolved Complex Mixture	22	
EOM (µg/net)	810	

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	71
n-eicosane-d42	99
n-triacontane-d62	100

Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Method Blank Report

Sample Name	ENV3351A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	10/23/14
Extraction Batch	ENV 3351
Date Acquired	24-Oct-2014, 02:35:21
Method	ALIFRONT.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/Net)	Q	Q	3X MDL	Actual MDL
n-C9	<0.35	U		1.050	0.350
n-C10	<0.35	U		1.050	0.350
n-C11	<0.35	U		1.050	0.350
n-C12	<0.35	U		1.050	0.350
n-C13	<0.35	U		1.050	0.350
i-C15	<0.35	U		1.050	0.350
n-C14	<0.35	U		1.050	0.350
i-C16	<0.35	U		1.050	0.350
n-C15	<0.35	U		1.050	0.350
n-C16	<0.35	U		1.050	0.350
i-C18	<0.35	U		1.050	0.350
n-C17	<0.35	U		1.050	0.350
Pristane	<0.35	U		1.050	0.350
n-C18	<0.35	U		1.050	0.350
Phytane	<0.35	U		1.050	0.350
n-C19	<0.35	U		1.050	0.350
n-C20	<0.35	U		1.050	0.350
n-C21	<0.35	U		1.050	0.350
n-C22	<0.35	U		1.050	0.350
n-C23	<0.35	U		1.050	0.350
n-C24	<0.35	U		1.050	0.350
n-C25	<0.35	U		1.050	0.350
n-C26	<0.35	U		1.050	0.350
n-C27	<0.35	U		1.050	0.350
n-C28	<0.35	U		1.050	0.350
n-C29	<0.35	U		1.050	0.350
n-C30	<0.35	U		1.050	0.350
n-C31	<0.35	U		1.050	0.350
n-C32	<0.35	U		1.050	0.350
n-C33	<0.35	U		1.050	0.350
n-C34	<0.35	U		1.050	0.350
n-C35	<0.35	U		1.050	0.350
n-C36	<0.35	U		1.050	0.350
n-C37	<0.35	U		1.050	0.350
n-C38	<0.35	U		1.050	0.350
n-C39	<0.35	U		1.050	0.350
n-C40	<0.35	U		1.050	0.350
Total Alkanes		U			
Total Petroleum Hydrocarbons	<20	U		60.0	20.0
Total Resolved Hydrocarbons	<20	U		60.0	20.0
Unresolved Complex Mixture	<20	U		60.0	20.0
EOM (µg/net)	<100			300	100

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	93
n-eicosane-d42	98
n-triacontane-d62	99

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

Sample Name	ENV3351B.D	ENV3351C.D
Client Name	Blank Spike	Blank Spike Dup
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	10/23/14	10/23/14
Extraction Batch	ENV 3351	ENV 3351
Date Acquired	24-Oct-2014, 03:45:58	24-Oct-2014, 04:56:24
Method	ALIFRONT.M	ALIFRONT.M
Sample	1.00	1.00
Dilution	1X	1X

Target Compounds	Su. Corrected Amount (µg)	Recovery (%)	Q	Su. Corrected Amount (µg)	Recovery (%)	Q	RPD (%)	Q	Spike Amount (µg)
n-C9	8.65	86		8.53	85		1		10.0
n-C10	9.34	93		9.32	93		0		10.0
n-C11	9.65	96		9.66	96		0		10.0
n-C12	9.76	98		9.77	98		0		10.0
n-C13	9.87	98		9.90	99		0		10.0
n-C14	9.88	99		9.91	99		0		10.0
n-C15	9.95	99		10.1	101		2		10.0
n-C16	9.97	100		10.1	101		1		10.0
n-C17	10.1	101		10.2	101		1		10.1
Pristane	10.1	100		10.1	101		1		10.0
n-C18	10.1	101		10.2	101		1		10.1
Phytane	10.5	101		10.5	102		1		10.3
n-C19	10.6	102		10.7	103		1		10.4
n-C20	10.2	101		10.2	102		1		10.0
n-C21	10.2	101		10.2	102		0		10.0
n-C22	10.1	101		10.2	102		1		10.0
n-C23	10.1	101		10.2	101		1		10.0
n-C24	10.5	105		10.5	105		0		10.0
n-C25	10.1	101		10.1	101		0		10.0
n-C26	10.0	100		10.1	101		0		10.0
n-C27	10.1	101		10.2	101		0		10.0
n-C28	10.2	102		10.3	103		0		10.0
n-C29	10.0	100		10.1	101		0		10.0
n-C30	10.0	100		10.0	100		0		10.0
n-C31	10.4	101		10.5	102		1		10.3
n-C32	10.1	100		10.1	101		1		10.0
n-C33	10.1	101		10.0	100		0		10.0
n-C34	10.1	101		10.1	101		1		10.0
n-C35	10.1	101		10.1	101		0		10.0
n-C36	10.1	101		10.2	102		0		10.0
n-C37	10.5	102		10.5	102		0		10.3
n-C38	10.2	102		10.3	103		1		10.0
n-C39	10.4	103		10.4	103		0		10.0
n-C40	10.3	103		10.3	103		0		10.0
Average %Recovery		100			101				

Surrogate (Su)	Su Recovery (%)	Su Recovery (%)
n-dodecane-d26	96	95
n-eicosane-d42	99	99
n-triacontane-d62	100	99

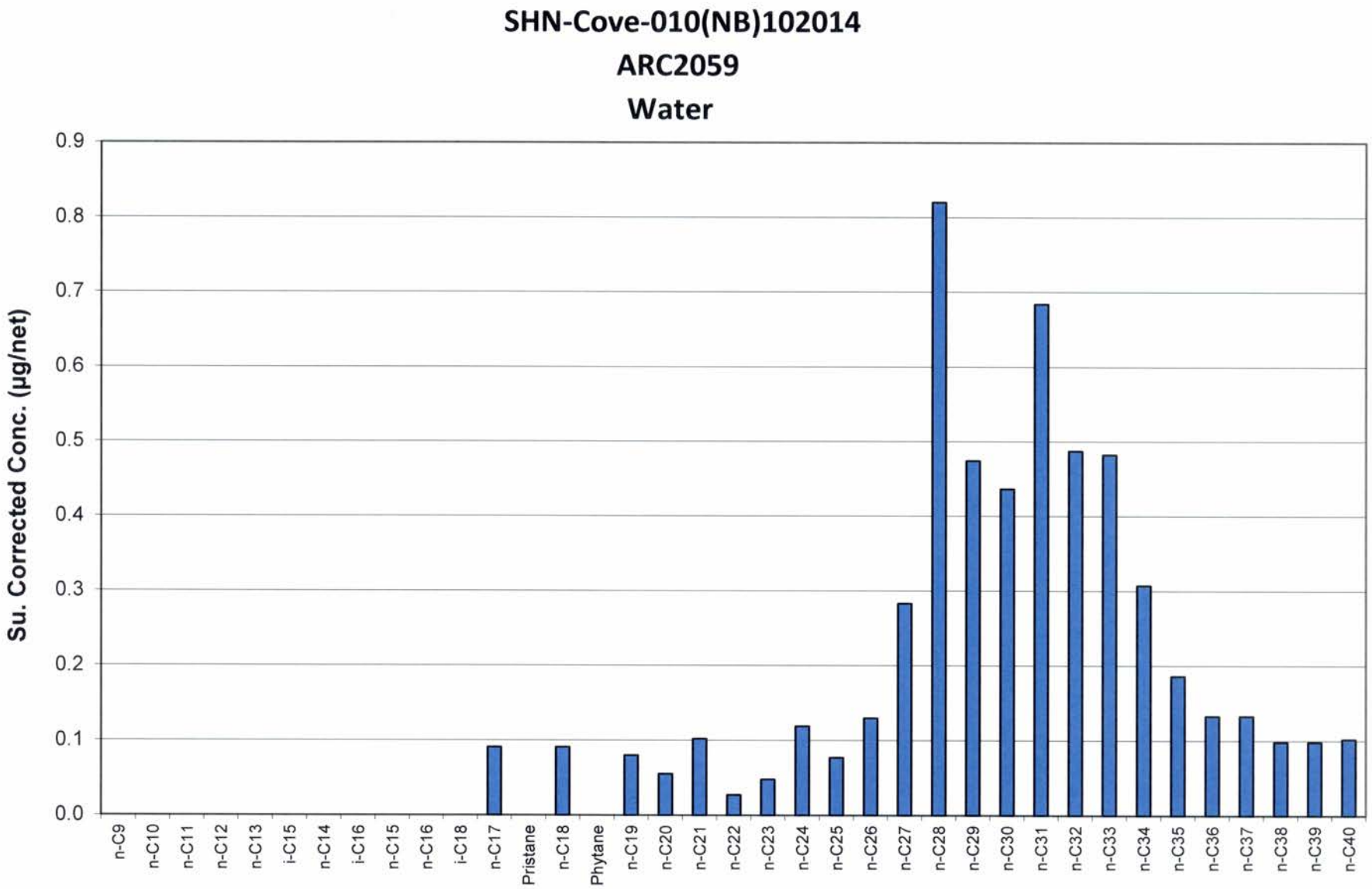
Arcadis Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Standard Reference Material Report

Sample Name	FID10256C.D
Client Name	AL-SRM2779-20-003
Matrix	Reference Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3351
Date Acquired	23-Oct-2014, 21:53:12
Method	ALIFRONT.M
Sample Weight (mg)	20.0
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	12.8			4	13.3	10.6	16.0
n-C10	11.3			5	11.8	9.47	14.2
n-C11	10.1			6	10.7	8.57	12.9
n-C12	8.98			4	9.36	7.49	11.2
n-C13	7.93			5	8.32	6.65	10.0
i-C15	1.77			6	1.88	1.50	2.25
n-C14	6.82			8	7.36	5.89	8.83
i-C16	2.85			1	2.83	2.27	3.40
n-C15	6.75			4	7.03	5.62	8.44
n-C16	6.04			2	5.90	4.72	7.07
i-C18	1.48			5	1.56	1.25	1.87
n-C17	4.32			8	4.68	3.74	5.61
Pristane	2.40			4	2.50	2.00	3.00
n-C18	3.75			2	3.84	3.07	4.61
Phytane	1.70			8	1.56	1.25	1.87
n-C19	3.13			12	3.54	2.83	4.25
n-C20	2.82			3	2.90	2.32	3.48
n-C21	2.29			6	2.44	1.95	2.93
n-C22	2.06			3	2.11	1.69	2.53
n-C23	1.84			4	1.91	1.53	2.29
n-C24	1.63			5	1.71	1.37	2.05
n-C25	1.41			1	1.42	1.13	1.70
n-C26	1.15			2	1.18	0.942	1.41
n-C27	0.901			4	0.939	0.751	1.13
n-C28	0.708			11	0.786	0.629	0.944
n-C29	0.703			7	0.755	0.604	0.906
n-C30	0.683			1	0.674	0.539	0.808
n-C31	0.592			6	0.559	0.447	0.671
n-C32	0.448			4	0.465	0.372	0.559
n-C33	0.481			0	0.479	0.383	0.575
n-C34	0.457			8	0.422	0.338	0.506
n-C35	0.332	J		2	0.339	0.271	0.406
n-C36	0.221	J		2	0.217	0.174	0.261
n-C37	0.215	J		2	0.211	0.169	0.254
n-C38	0.180	J		1	0.179	0.143	0.214
n-C39	0.174	J		2	0.170	0.136	0.204
n-C40	0.190	J		8	0.175	0.140	0.210
Total Petroleum Hydrocarbons	615			2	605	484	726

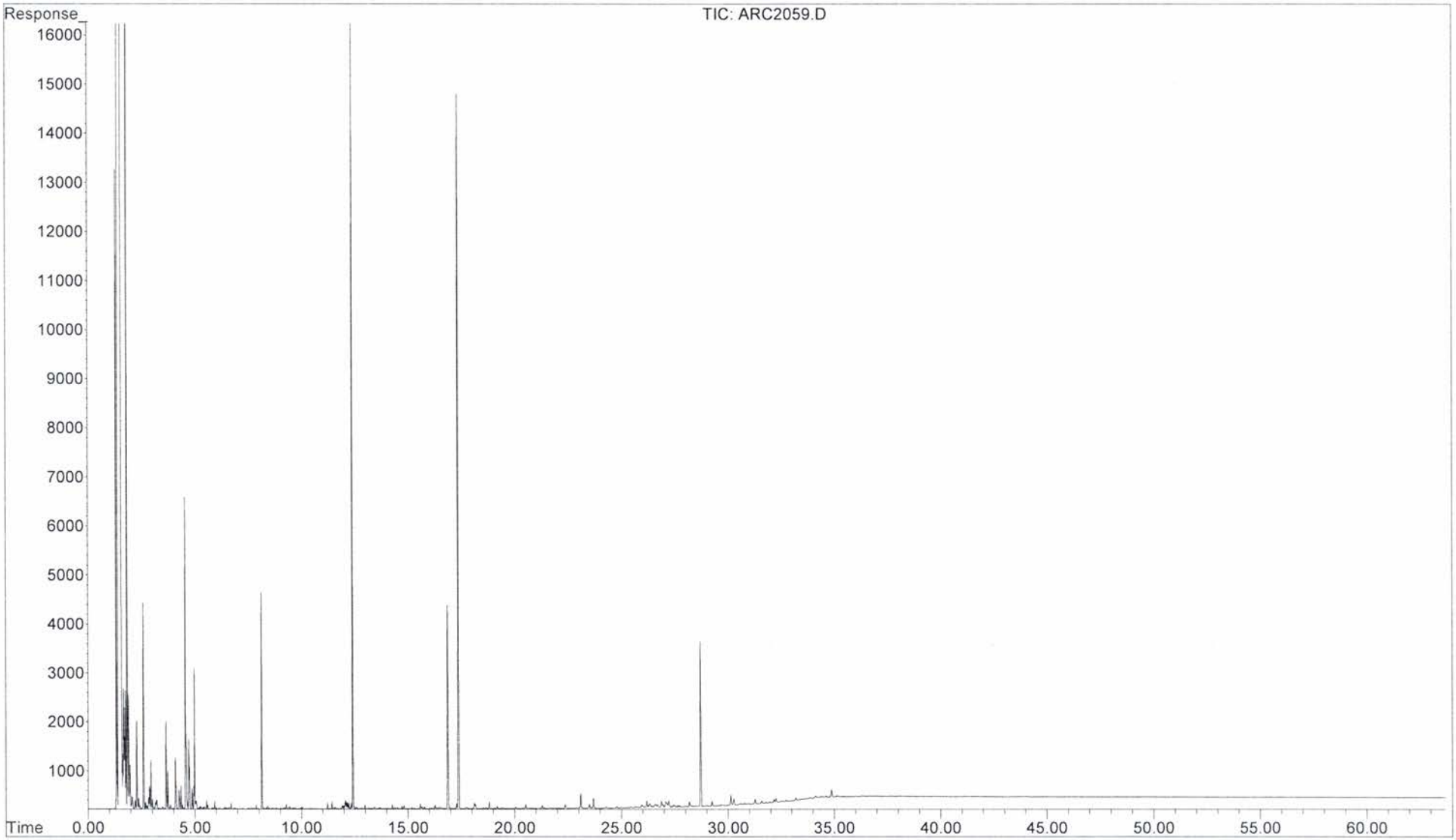
Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	100
n-eicosane-d42	97
n-triacontane-d62	87

Aliphatic Hydrocarbon Histograms


SHN-Cove-010(NB)102014
ARC2059
Water
Su. Corrected Conc. (µg/net)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
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 3351\FID10256\ARC2059.D
Operator : Meghan Dailey
Acquired : 24-Oct-2014, 06:06:55 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SHN-Cove-010(NB)102014
Misc Info :
Vial Number: 9



Polycyclic Aromatic Hydrocarbon Concentration

Sample Name	ARC2059.D
Client Name	SHN-Cove-010(NB)102014
Matrix	Net
Collection Date	10/20/14
Received Date	10/22/14
Extraction Date	10/23/14
Extraction Batch	ENV 3351
Date Acquired	11/5/14 3:46
Method	PAH2014A.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q
cis/trans Decalin	<10	U
C1-Decalins	<10	U
C2-Decalins	<10	U
C3-Decalins	<10	U
C4-Decalins	<10	U
Naphthalene	4.25	J
C1-Naphthalenes	2.85	J
C2-Naphthalenes	5.80	J
C3-Naphthalenes	<10	U
C4-Naphthalenes	<10	U
Benzothiophene	<10	U
C1-Benzothiophenes	<10	U
C2-Benzothiophenes	<10	U
C3-Benzothiophenes	<10	U
C4-Benzothiophenes	<10	U
Biphenyl	1.10	J
Acenaphthylene	0.244	J
Acenaphthene	<10	U
Dibenzofuran	3.82	J
Fluorene	4.07	J
C1-Fluorenes	2.22	J
C2-Fluorenes	<10	U
C3-Fluorenes	<10	U
Carbazole	<10	U
Anthracene	1.04	J
Phenanthrene	22.1	
C1-Phenanthrenes/Anthracenes	<10	U
C2-Phenanthrenes/Anthracenes	<10	U
C3-Phenanthrenes/Anthracenes	<10	U
C4-Phenanthrenes/Anthracenes	<10	U
Dibenzothiophene	1.41	J
C1-Dibenzothiophenes	1.36	J
C2-Dibenzothiophenes	3.45	J
C3-Dibenzothiophenes	5.31	J
C4-Dibenzothiophenes	5.75	J
Fluoranthene	3.92	J
Pyrene	2.33	J
C1-Fluoranthenes/Pyrenes	2.87	J
C2-Fluoranthenes/Pyrenes	4.80	J
C3-Fluoranthenes/Pyrenes	4.57	J
C4-Fluoranthenes/Pyrenes	4.96	J
Naphthobenzothiophene	<10	U
C1-Naphthobenzothiophenes	<10	U
C2-Naphthobenzothiophenes	<10	U
C3-Naphthobenzothiophenes	<10	U
C4-Naphthobenzothiophenes	<10	U
Benz(a)anthracene	1.65	J
Chrysene/Triphenylene	2.41	J
C1-Chrysenes	4.37	J
C2-Chrysenes	<10	U
C3-Chrysenes	<10	U
C4-Chrysenes	<10	U
Benzo(b)fluoranthene	2.06	J
Benzo(k,j)fluoranthene	0.523	J
Benzo(a)fluoranthene	<10	U
Benzo(e)pyrene	0.481	J
Benzo(a)pyrene	<10	U
Perylene	0.554	J
Indeno(1,2,3-c,d)pyrene	0.940	J
Dibenzo(a,h)anthracene	<10	U
Benzo(g,h,i)perylene	1.47	J
Total PAHs	103	

Sample Name	ARC2059.D
Client Name	SHN-Cove-010(NB)102014
Matrix	Net
Collection Date	10/20/14
Received Date	10/22/14
Extraction Date	10/23/14
Extraction Batch	ENV 3351
Date Acquired	11/5/14 3:46
Method	PAH2014A.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q
Individual Alkyl Isomers and Hopanes		
2-Methylnaphthalene	2.39	J
1-Methylnaphthalene	1.58	J
2,6-Dimethylnaphthalene	2.24	J
1,6,7-Trimethylnaphthalene	<10	U
1-Methylfluorene	1.19	J
4-Methyldibenzothiophene	0.983	J
2/3-Methyldibenzothiophene	0.692	J
1-Methyldibenzothiophene	0.326	J
3-Methylphenanthrene	<10	U
2-Methylphenanthrene	<10	U
2-Methylanthracene	<10	U
4/9-Methylphenanthrene	<10	U
1-Methylphenanthrene	<10	U
3,6-Dimethylphenanthrene	<10	U
Retene	<10	U
2-Methylfluoranthene	0.367	J
Benzo(b)fluorene	0.388	J
C29-Hopane	12.1	
18a-Oleanane	<10	U
C30-Hopane	16.3	
C20-TAS	<10	U
C21-TAS	<10	U
C26(20S)-TAS	<10	U
C26(20R)/C27(20S)-TAS	<10	U
C28(20S)-TAS	<10	U
C27(20R)-TAS	<10	U
C28(20R)-TAS	<10	U

Surrogate Recovery	
Naphthalene-d8	63
Acenaphthene-d10	80
Phenanthrene-d10	80
Chrysene-d12	81
Perylene-d12	85

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Method Blank Report

Sample Name	ENV3351A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	10/23/14
Extraction Batch	ENV 3351
Date Acquired	11/5/14 0:17
Method	PAH2014A.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	3X MDL	Actual MDL
cis/trans Decalin	<10	U	30.0	10.0
C1-Decalins	<10	U	30.0	10.0
C2-Decalins	<10	U	30.0	10.0
C3-Decalins	<10	U	30.0	10.0
C4-Decalins	<10	U	30.0	10.0
Naphthalene	<10	U	30.0	10.0
C1-Naphthalenes	<10	U	30.0	10.0
C2-Naphthalenes	<10	U	30.0	10.0
C3-Naphthalenes	<10	U	30.0	10.0
C4-Naphthalenes	<10	U	30.0	10.0
Benzothiophene	<10	U	30.0	10.0
C1-Benzothiophenes	<10	U	30.0	10.0
C2-Benzothiophenes	<10	U	30.0	10.0
C3-Benzothiophenes	<10	U	30.0	10.0
C4-Benzothiophenes	<10	U	30.0	10.0
Biphenyl	<10	U	30.0	10.0
Acenaphthylene	<10	U	30.0	10.0
Acenaphthene	<10	U	30.0	10.0
Dibenzofuran	<10	U	30.0	10.0
Fluorene	<10	U	30.0	10.0
C1-Fluorenes	<10	U	30.0	10.0
C2-Fluorenes	<10	U	30.0	10.0
C3-Fluorenes	<10	U	30.0	10.0
Carbazole	<10	U	30.0	10.0
Anthracene	<10	U	30.0	10.0
Phenanthrene	0.605	J	30.0	10.0
C1-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C2-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C3-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
C4-Phenanthrenes/Anthracenes	<10	U	30.0	10.0
Dibenzothiophene	<10	U	30.0	10.0
C1-Dibenzothiophenes	<10	U	30.0	10.0
C2-Dibenzothiophenes	<10	U	30.0	10.0
C3-Dibenzothiophenes	<10	U	30.0	10.0
C4-Dibenzothiophenes	<10	U	30.0	10.0
Fluoranthene	<10	U	30.0	10.0
Pyrene	<10	U	30.0	10.0
C1-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C2-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C3-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
C4-Fluoranthenes/Pyrenes	<10	U	30.0	10.0
Naphthobenzothiophene	<10	U	30.0	10.0
C1-Naphthobenzothiophenes	<10	U	30.0	10.0
C2-Naphthobenzothiophenes	<10	U	30.0	10.0
C3-Naphthobenzothiophenes	<10	U	30.0	10.0
C4-Naphthobenzothiophenes	<10	U	30.0	10.0
Benz(a)anthracene	<10	U	30.0	10.0
Chrysene/Triphenylene	<10	U	30.0	10.0
C1-Chrysenes	<10	U	30.0	10.0
C2-Chrysenes	<10	U	30.0	10.0
C3-Chrysenes	<10	U	30.0	10.0
C4-Chrysenes	<10	U	30.0	10.0
Benzo(b)fluoranthene	<10	U	30.0	10.0
Benzo(k,j)fluoranthene	<10	U	30.0	10.0
Benzo(a)fluoranthene	<10	U	30.0	10.0
Benzo(e)pyrene	<10	U	30.0	10.0
Benzo(a)pyrene	<10	U	30.0	10.0
Perylene	<10	U	30.0	10.0
Indeno(1,2,3-c,d)pyrene	<10	U	30.0	10.0
Dibenzo(a,h)anthracene	<10	U	30.0	10.0
Benzo(g,h,i)perylene	<10	U	30.0	10.0
Total PAHs	0.605			

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Method Blank Report

Sample Name	ENV3351A.D
Client Name	Method Blank
Matrix	Net
Collection Date	NA
Received Date	NA
Extraction Date	10/23/14
Extraction Batch	ENV 3351
Date Acquired	11/5/14 0:17
Method	PAH2014A.M
Sample	1.00
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/Net)	Q	3.0 MDL	Actual MDL
Individual Alkyl Isomers and Hopanes				
2-Methylnaphthalene	<10	U	30.0	10.0
1-Methylnaphthalene	<10	U	30.0	10.0
2,6-Dimethylnaphthalene	<10	U	30.0	10.0
1,6,7-Trimethylnaphthalene	<10	U	30.0	10.0
1-Methylfluorene	<10	U	30.0	10.0
4-Methyldibenzothiophene	<10	U	30.0	10.0
2/3-Methyldibenzothiophene	<10	U	30.0	10.0
1-Methyldibenzothiophene	<10	U	30.0	10.0
3-Methylphenanthrene	<10	U	30.0	10.0
2-Methylphenanthrene	<10	U	30.0	10.0
2-Methylanthracene	<10	U	30.0	10.0
4/9-Methylphenanthrene	<10	U	30.0	10.0
1-Methylphenanthrene	<10	U	30.0	10.0
3,6-Dimethylphenanthrene	<10	U	30.0	10.0
Retene	<10	U	30.0	10.0
2-Methylfluoranthene	<10	U	30.0	10.0
Benzo(b)fluorene	<10	U	30.0	10.0
C29-Hopane	<10	U	30.0	10.0
18a-Oleanane	<10	U	30.0	10.0
C30-Hopane	<10	U	30.0	10.0
C20-TAS	<10	U	30.0	10.0
C21-TAS	<10	U	30.0	10.0
C26(20S)-TAS	<10	U	30.0	10.0
C26(20R)/C27(20S)-TAS	<10	U	30.0	10.0
C28(20S)-TAS	<10	U	30.0	10.0
C27(20R)-TAS	<10	U	30.0	10.0
C28(20R)-TAS	<10	U	30.0	10.0

Surrogate Recovery	
Naphthalene-d8	83
Acenaphthene-d10	82
Phenanthrene-d10	80
Chrysene-d12	79
Perylene-d12	84

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3351B.D	ENV3351C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	10/23/14	10/23/14
Extraction Batch	ENV 3351	ENV 3351
Date Acquired	11/5/14 1:27	11/5/14 2:36
Method	PAH2014A.M	PAH2014A.M
Sample	1.00	1.00
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	91.4		92		89.5		90		2		99.0
C1-Decalins	NA				NA						
C2-Decalins	NA				NA						
C3-Decalins	NA				NA						
C4-Decalins	NA				NA						
Naphthalene	91.7		93		89.7		91		2		98.6
C1-Naphthalenes	NA				NA						
C2-Naphthalenes	NA				NA						
C3-Naphthalenes	NA				NA						
C4-Naphthalenes	NA				NA						
Benzothiophene	91.5		92		90.2		90		1		99.7
C1-Benzothiophenes	NA				NA						
C2-Benzothiophenes	NA				NA						
C3-Benzothiophenes	NA				NA						
C4-Benzothiophenes	NA				NA						
Biphenyl	87.4		88		87.9		88		1		99.7
Acenaphthylene	89.1		89		87.7		88		2		99.9
Acenaphthene	92.7		92		91.5		91		1		101
Dibenzofuran	93.6		94		91.8		92		2		99.8
Fluorene	90.8		92		88.9		90		2		98.6
C1-Fluorenes	NA				NA						
C2-Fluorenes	NA				NA						
C3-Fluorenes	NA				NA						
Carbazole	79.8		80		79.1		79		1		99.7
Anthracene	88.3		88		88.1		88		0		100
Phenanthrene	91.2		91		90.5		91		1		99.7
C1-Phenanthrenes/Anthracenes	NA				NA						
C2-Phenanthrenes/Anthracenes	NA				NA						
C3-Phenanthrenes/Anthracenes	NA				NA						
C4-Phenanthrenes/Anthracenes	NA				NA						
Dibenzothiophene	118		119		117		118		1		98.9
C1-Dibenzothiophenes	NA				NA						
C2-Dibenzothiophenes	NA				NA						
C3-Dibenzothiophenes	NA				NA						
C4-Dibenzothiophenes	NA				NA						
Fluoranthene	94.3		94		93.7		93		1		101
Pyrene	92.8		93		91.7		92		1		100
C1-Fluoranthenes/Pyrenes	NA				NA						
C2-Fluoranthenes/Pyrenes	NA				NA						
C3-Fluoranthenes/Pyrenes	NA				NA						
C4-Fluoranthenes/Pyrenes	NA				NA						
Naphthobenzothiophene	94.6		94		98.7		98		4		101
C1-Naphthobenzothiophenes	NA				NA						
C2-Naphthobenzothiophenes	NA				NA						
C3-Naphthobenzothiophenes	NA				NA						
C4-Naphthobenzothiophenes	NA				NA						
Benz(a)anthracene	92.4		93		92		93		0		99.0
Chrysene/Triphenylene	91.3		92		89.9		91		2		99.1
C1-Chrysenes	NA				NA						
C2-Chrysenes	NA				NA						
C3-Chrysenes	NA				NA						
C4-Chrysenes	NA				NA						
Benzo(b)fluoranthene	90.6		91		89.2		90		2		100
Benzo(k,j)fluoranthene	92.3		92		91.2		91		1		100
Benzo(a)fluoranthene	NA				NA						
Benzo(e)pyrene	94.0		94		93.2		93		1		100
Benzo(a)pyrene	89.3		89		87.4		88		2		99.9
Perylene	91.3		91		90.3		90		1		100
Indeno(1,2,3-c,d)pyrene	91.8		92		90.8		91		1		100
Dibenzo(a,h)anthracene	90.7		91		90.1		91		1		99.2
Benzo(g,h,i)perylene	88.1		89		87.0		88		1		98.6
Average % Recovery			93				92				

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3351B.D	ENV3351C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Net	Net
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	10/23/14	10/23/14
Extraction Batch	ENV 3351	ENV 3351
Date Acquired	11/5/14 1:27	11/5/14 2:36
Method	PAH2014A.M	PAH2014A.M
Sample	1.00	1.00
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	92.9		94		91.7		92		1		99.3
1-Methylnaphthalene	90.3		91		89.2		90		1		99.5
2,6-Dimethylnaphthalene	90.4		90		89.1		89		1		100
1,6,7-Trimethylnaphthalene	93.5		93		92.0		92		2		100
1-Methylfluorene	97.6		97		95.0		94		3		101
4-Methyldibenzothiophene	98.6		98		98.1		97		1		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	95.3		96		94.8		95		1		99.3
3,6-Dimethylphenanthrene	94.7		94		94.5		94		0		100
Retene	94.6		95		93.3		93		1		100
2-Methylfluoranthene	94.9		95		94.5		94		0		100
Benzo(b)fluorene	101		100		100		100		0		100
C29-Hopane	NA				NA						
18a-Oleanane	NA				NA						
C30-Hopane	101		101		98.6		99		2		100
C20-TAS	NA				NA						
C21-TAS	NA				NA						
C26(20S)-TAS	NA				NA						
C26(20R)/C27(20S)-TAS	NA				NA						
C28(20S)-TAS	NA				NA						
C27(20R)-TAS	NA				NA						
C28(20R)-TAS	NA				NA						

Surrogate Recovery		
Naphthalene-d8	83	84
Acenaphthene-d10	84	85
Phenanthrene-d10	84	86
Chrysene-d12	84	87
Perylene-d12	88	89

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

Sample Name	MS60210K.D
Client Name	PAH-WKSRM2779-4.0-005
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3351
Date Acquired	11/4/14 23:07
Method	PAH2014A.M
Sample Weight (mg)	4.2

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	766						
C1-Decalins	1184						
C2-Decalins	1225						
C3-Decalins	1126						
C4-Decalins	860						
Naphthalene	801			7	855 ± 46	647	1081
C1-Naphthalenes	1838						
C2-Naphthalenes	2331						
C3-Naphthalenes	1758						
C4-Naphthalenes	911						
Benzothiophene	9.79	J					
C1-Benzothiophenes	44.6						
C2-Benzothiophenes	24.6						
C3-Benzothiophenes	37.5						
C4-Benzothiophenes	34.6						
Biphenyl	182						
Acenaphthylene	7.82	J					
Acenaphthene	8.93	J					
Dibenzofuran	29.9						
Fluorene	135						
C1-Fluorenes	312						
C2-Fluorenes	356						
C3-Fluorenes	309						
Carbazole	3.8	J					
Anthracene	2.8	J		21	3.42 ± 0.59	2.26	4.81
Phenanthrene	269			4	258 ± 27	185	342
C1-Phenanthrenes/Anthracenes	653						
C2-Phenanthrenes/Anthracenes	747						
C3-Phenanthrenes/Anthracenes	450						
C4-Phenanthrenes/Anthracenes	275						
Dibenzothiophene	47.9			8	51.8 ± 2.1	39.8	64.7
C1-Dibenzothiophenes	134						
C2-Dibenzothiophenes	209						
C3-Dibenzothiophenes	124						
C4-Dibenzothiophenes	67.3						
Fluoranthene	3.88	J		12	4.36 ± 0.40	3.17	5.71
Pyrene	12.1			20	14.81 ± 0.39	11.5	18.2
C1-Fluoranthenes/Pyrenes	81.4						
C2-Fluoranthenes/Pyrenes	138						
C3-Fluoranthenes/Pyrenes	164						
C4-Fluoranthenes/Pyrenes	110						
Naphthobenzothiophene	31.3						
C1-Naphthobenzothiophenes	69.3						
C2-Naphthobenzothiophenes	96.3						
C3-Naphthobenzothiophenes	66.5						
C4-Naphthobenzothiophenes	20.6						
Benz(a)anthracene	7.18	J		2	7.03 ± 0.85	4.94	9.46
Chrysene/Triphenylene	50.9			7	47.4 ± 1.7	36.6	58.9
C1-Chrysenes	126						
C2-Chrysenes	137						
C3-Chrysenes	117						
C4-Chrysenes	86.5						
Benzo(b)fluoranthene	5.60	J		0	5.62 ± 0.34	4.22	7.15
Benzo(k,j)fluoranthene	1.02	J					
Benzo(a)fluoranthene	<10	U					
Benzo(e)pyrene	9.87	J		9	10.78 ± 0.60	8.14	13.7
Benzo(a)pyrene	1.69	J					
Perylene	0.496	J					
Indeno(1,2,3-c,d)pyrene	0.431	J					
Dibenzo(a,h)anthracene	0.547	J		5	0.574 ± 0.091	0.386	0.798
Benzo(g,h,i)perylene	1.66	J		24	2.11 ± 0.26	1.48	2.84
Total PAHs	18613						

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

Sample Name	MS60210K.D
Client Name	PAH-WKSRM2779-4.0-005
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3351
Date Acquired	11/4/14 23:07
Method	PAH2014A.M
Sample Weight (mg)	4.2

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	1460		11	1630 ± 50	1264	2016
1-Methylnaphthalene	1107		3	1140 ± 20	896	1392
2,6-Dimethylnaphthalene	522					
1,6,7-Trimethylnaphthalene	213					
1-Methylfluorene	273					
4-Methyldibenzothiophene	112					
2/3-Methyldibenzothiophene	51.6					
1-Methyldibenzothiophene	34.3					
3-Methylphenanthrene	191		8	206 ± 32	139	286
2-Methylphenanthrene	211		8	230 ± 14	173	293
2-Methylanthracene	13.5					
4/9-Methylphenanthrene	254		9	232 ± 19	170	301
1-Methylphenanthrene	166		2	169 ± 10	127	215
3,6-Dimethylphenanthrene	55.1					
Retene	7.35	J				
2-Methylfluoranthene	7.25	J				
Benzo(b)fluorene	16.9					
C29-Hopane	25.0					
18a-Oleanane	<10	U				
C30-Hopane	54.8					
C20-TAS	49.8					
C21-TAS	54.7					
C26(20S)-TAS	29.0					
C26(20R)/C27(20S)-TAS	93.1					
C28(20S)-TAS	79.9					
C27(20R)-TAS	54.7					
C28(20R)-TAS	58.8					

Surrogate Recovery	
Naphthalene-d8	95
Acenaphthene-d10	93
Phenanthrene-d10	91
Chrysene-d12	91
Perylene-d12	91

Peak Resolution	
4/9-Methylphenanthrene from 1-Methylyphenanthrene (m/z 192)	94%

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

Sample Name	MS60210J.D
Client Name	PAH-WKCCV-250-042
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3351
Date Acquired	11/4/14 21:57
Method	PAH2014A.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	252		1.9	248	210	285
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	246		0.2	247	210	283
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	250		0.3	249	212	287
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	247		1.1	249	212	287
Acenaphthylene	229		8.9	250	212	287
Acenaphthene	244		3.0	252	214	289
Dibenzofuran	245		2.0	250	212	287
Fluorene	238		3.6	247	210	283
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	235		6.1	249	212	287
Anthracene	237		5.4	250	213	288
Phenanthrene	251		0.5	249	212	287
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	244		1.1	247	210	284
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	240		4.9	252	214	290
Pyrene	242		3.4	250	213	288
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
C4-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	237		6.0	251	214	289
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
C4-Naphthobenzothiophenes	NA					
Benz(a)anthracene	215		14.0	248	210	285
Chrysene/Triphenylene	234		5.7	248	211	285
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	249		0.1	249	212	286
Benzo(k,j)fluoranthene	248		1.1	251	213	288
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	253		0.8	251	213	288
Benzo(a)pyrene	244		2.2	250	212	287
Perylene	248		0.7	250	213	288
Indeno(1,2,3-c,d)pyrene	241		3.5	250	213	288
Dibenzo(a,h)anthracene	241		3.0	248	211	285
Benzo(g,h,i)perylene	244		1.1	247	210	283

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

Sample Name	MS60210J.D
Client Name	PAH-WKCCV-250-042
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3351
Date Acquired	11/4/14 21:57
Method	PAH2014A.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	244		1.7	248	211	285
1-Methylnaphthalene	245		1.5	249	211	286
2,6-Dimethylnaphthalene	242		3.1	250	212	287
1,6,7-Trimethylnaphthalene	240		4.5	251	213	288
1-Methylfluorene	234		7.1	252	214	290
4-Methyldibenzothiophene	248		1.4	252	214	289
2/3-Methyldibenzothiophene	NA					
1-Methyldibenzothiophene	NA					
3-Methylphenanthrene	NA					
2-Methylphenanthrene	NA					
2-Methylanthracene	NA					
4/9-Methylphenanthrene	NA					
1-Methylphenanthrene	240		3.4	248	211	285
3,6-Dimethylphenanthrene	236		5.9	251	213	288
Retene	233		7.0	250	213	288
2-Methylfluoranthene	234		6.6	250	213	288
Benzo(b)fluorene	225		11.0	251	213	289
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	246		1.8	250	213	288
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	100
Acenaphthene-d10	98
Phenanthrene-d10	100
Chrysene-d12	96
Perylene-d12	98

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

Sample Name	MS60210I.D
Client Name	PAH-WKICV-250-008
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3351
Date Acquired	11/4/14 20:47
Method	PAH2014A.M
Sample Volume (mL)	1.0

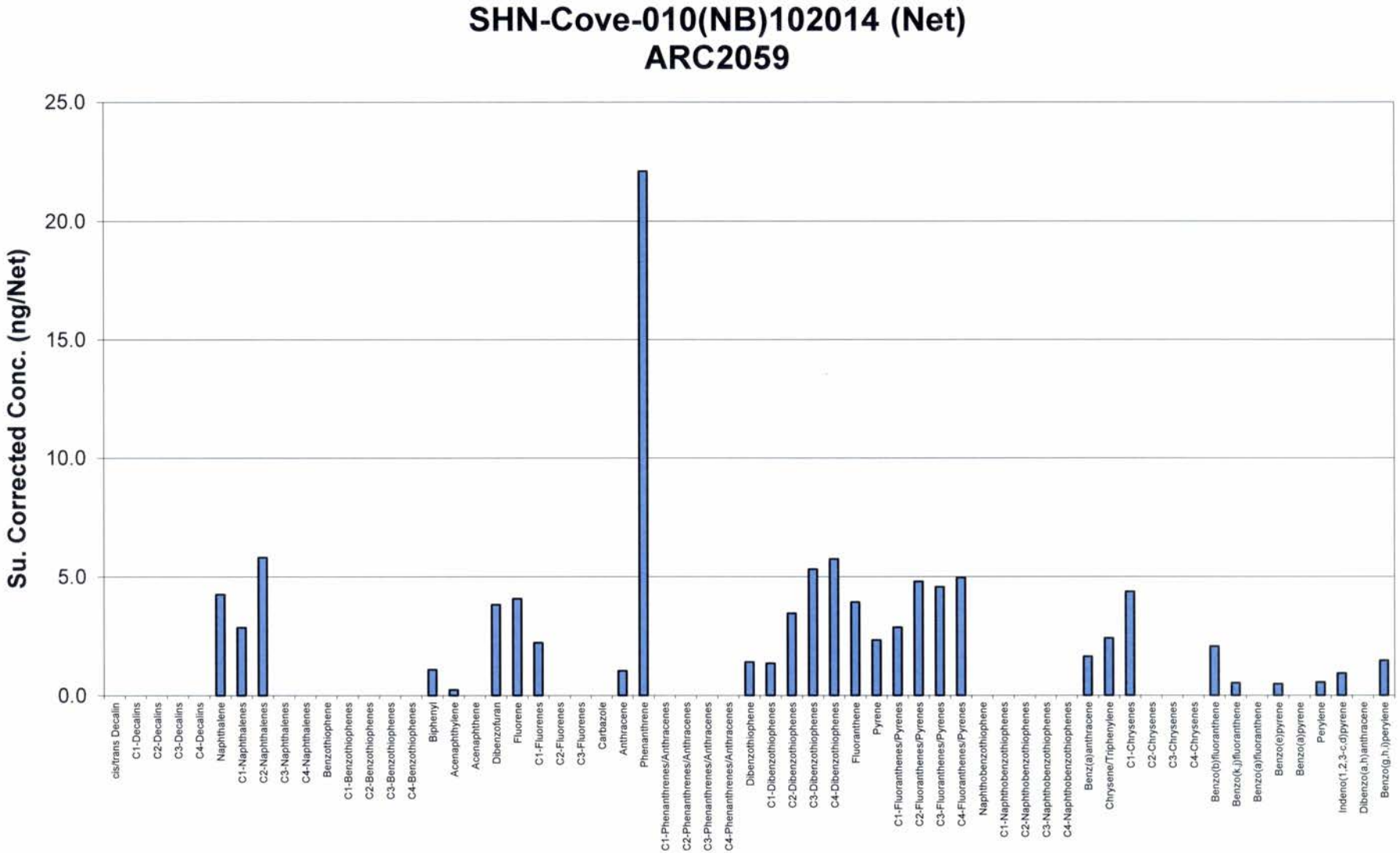
Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
cis/trans Decalin	233		7.1	250	200	300
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	229		8.7	250	200	300
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	228		9.5	250	200	300
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	218		13.9	251	201	301
Acenaphthylene	212		16.6	250	200	300
Acenaphthene	229		9.0	250	200	300
Dibenzofuran	218		13.6	250	200	300
Fluorene	222		12.0	250	200	300
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	200		22.1	250	200	300
Anthracene	230		8.2	250	200	300
Phenanthrene	241		3.7	250	200	300
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	229		8.8	250	200	300
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	232		7.4	250	200	300
Pyrene	237		5.3	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	214		15.6	250	200	300
Chrysene/Triphenylene	228		9.5	250	200	300
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	240		4.3	250	200	300
Benzo(k,j)fluoranthene	232		7.4	250	200	300
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	214		15.6	250	200	300
Benzo(a)pyrene	226		10.1	250	200	300
Perylene	209		18.0	251	200	301
Indeno(1,2,3-c,d)pyrene	218		13.9	250	200	300
Dibenzo(a,h)anthracene	217		14.3	250	200	300
Benzo(g,h,i)perylene	229		9.0	250	200	300

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

Sample Name	MS60210I.D
Client Name	PAH-WKICV-250-008
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3351
Date Acquired	11/4/14 20:47
Method	PAH2014A.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	237		5.4	250	200	301
1-Methylnaphthalene	234		6.9	251	200	301
2,6-Dimethylnaphthalene	218		13.6	250	200	300
1,6,7-Trimethylnaphthalene	223		11.4	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	230		8.5	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	247		1.4	250	200	300
Acenaphthene-d10	241		3.7	250	200	300
Phenanthrene-d10	255		2.0	250	200	300
Chrysene-d12	244		2.4	250	200	300
Perylene-d12	235		6.3	250	200	300

Polycyclic Aromatic Hydrocarbon Histograms


SHN-Cove-010(NB)102014 (Net)
ARC2059
Su. Corrected Conc. (ng/Net)
25.0
20.0
15.0
10.0
5.0
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-Dibenzothiophenes
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:\GCMS6\MS60210\ARC2059.D
Operator    : YM
Acquired    :  5 Nov 2014    3:46      using AcqMethod PAH2014A.M
Instrument  :   GCMS6
Sample Name: SHN-Cove-010(NB)102014
Misc Info   :
Vial Number: 15
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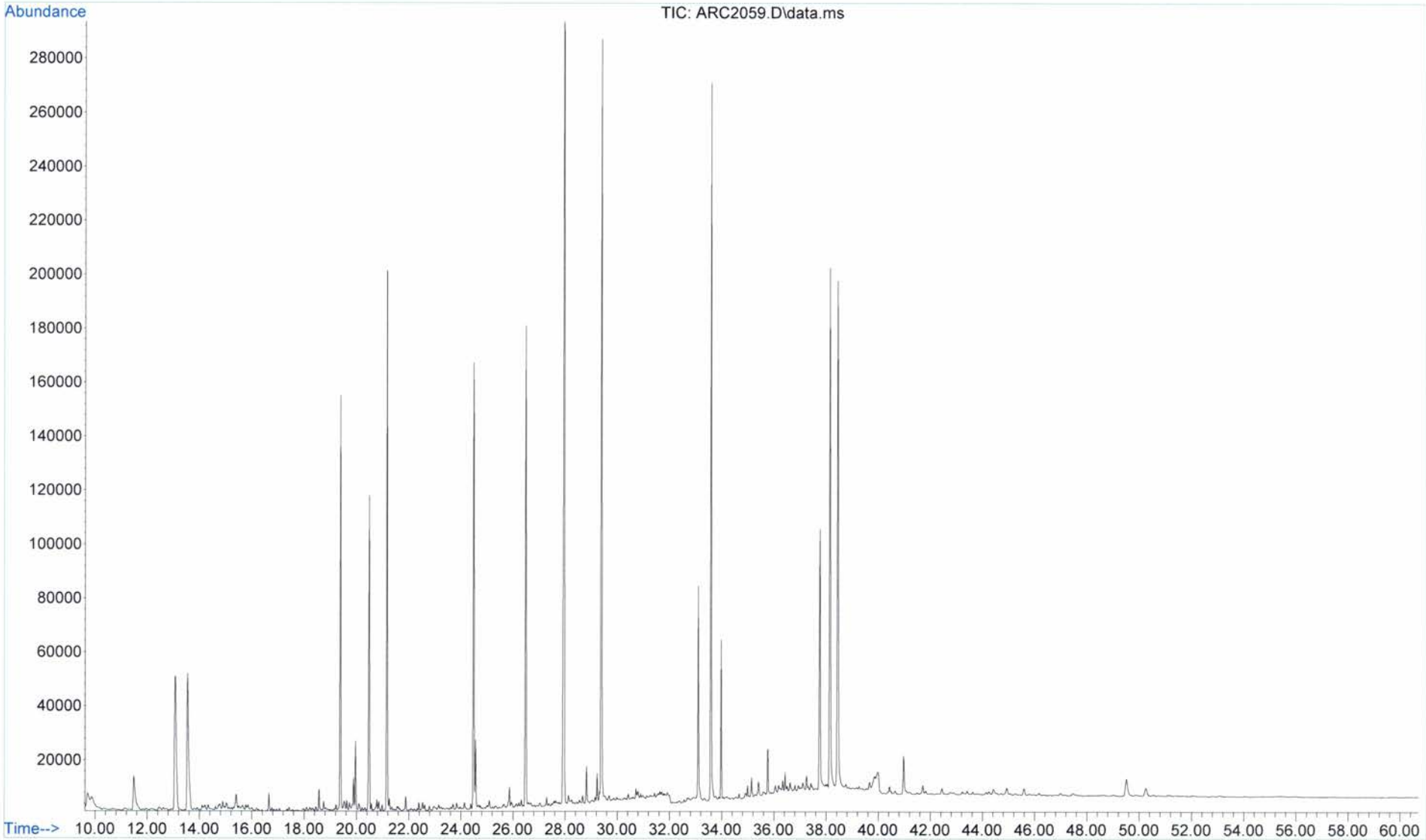


Total Petroleum Hydrocarbons/ Aliphatic Hydrocarbons Raw Data

B&B LABORATORIES ALIPHATICS/TEH QA FORM

Extraction Page: ENV 3351	Analyst: M. Dailey
Client: Arcadis Mayflower	Date: October 24, 2014
Job: #: J13034	Project Quality Manager: [signature]
SDG #: 14102201	Date: 11/16/14

Initial Calibration: No Failures	ICV 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	
MC-252 Reference Oil No Failures	
Mass Discrimination Check (n-C36/n-C20 >0.7) No Failures	

FID Sequence Summary Report

B&B Laboratories, Inc.

Sequence name: FID10256 2014-10-23

Acquisition date: 10/23/2014 3:58:02 PM

Acquired by: Meghan Dailey

Data Directory C:\CHEM32\3\DATA\FID10256 2014-10-23

Line	Location	Sample Name	Datafile	Method	Injection Date
4	Vial 1	Solvent Blank	FID10256A.D	ALIFRONT.M	10/23/2014 19:32:08
5	Vial 2	AL-WKCC-25-030	FID10256B.D	ALIFRONT.M	10/23/2014 20:42:47
6	Vial 3	AL-SRM2779-20-003	FID10256C.D	ALIFRONT.M	10/23/2014 21:53:12
7	Vial 1	Solvent Blank	FID10256D.D	ALIFRONT.M	10/23/2014 23:03:48
8	Vial 4	AL-RetWin-003	FID10256E.D	ALIFRONT.M	10/24/2014 00:14:19
9	Vial 5	AI-WKPEM-003	FID10256F.D	ALIFRONT.M	10/24/2014 01:24:46
10	Vial 6		ENV3351A.D	ALIFRONT.M	10/24/2014 02:35:21
11	Vial 7		ENV3351B.D	ALIFRONT.M	10/24/2014 03:45:58
12	Vial 8		ENV3351C.D	ALIFRONT.M	10/24/2014 04:56:24
13	Vial 9		ARC2059.D	ALIFRONT.M	10/24/2014 06:06:55
14	Vial 10	AL-WKCC-25-030	FID10256G.D	ALIFRONT.M	10/24/2014 07:17:29

Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256B.D
Signal(s) : FID1A.CH
Acq On : 23-Oct-2014, 20:42:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:17:09 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	97	0.00
2		n-C8	0.995	0.975	2.0	98	0.00
3		n-C9	1.033	1.027	0.6	99	0.00
4		n-C10	1.074	1.081	-0.7	100	0.00
5		n-C11	1.100	1.114	-1.3	100	0.00
6	S	n-dodecane-d26	0.973	0.973	0.0	100	0.00
7		n-C12	1.147	1.162	-1.3	100	0.00
10		n-C13	1.165	1.177	-1.0	99	0.00
12		n-C14	1.184	1.192	-0.7	98	0.00
14		n-C15	1.206	1.207	-0.1	98	0.00
15		n-C16	1.215	1.214	0.1	97	0.00
16	I	5a-androstane	1.000	1.000	0.0	96	0.00
18		n-C17	0.975	0.979	-0.4	97	0.00
19		Pristane	0.973	0.974	-0.1	97	0.00
20		n-C18	0.967	0.971	-0.4	97	0.00
21		Phytane	0.837	0.839	-0.2	97	0.00
22		n-C19	0.962	0.964	-0.2	97	0.00
23	S	n-eicosane-d42	0.828	0.819	1.1	97	0.00
24		n-C20	0.973	0.976	-0.3	97	0.00
25		n-C21	0.996	0.999	-0.3	97	0.00
26		n-C22	0.985	0.983	0.2	97	0.00
27		n-C23	0.978	0.975	0.3	96	0.00
28		n-C24	0.971	0.968	0.3	96	0.00
29		n-C25	0.967	0.959	0.8	96	0.00
30		n-C26	0.978	0.967	1.1	96	0.00
31		n-C27	0.963	0.951	1.2	95	0.00
32		n-C28	0.955	0.942	1.4	95	0.00
33		n-C29	0.943	0.929	1.5	95	0.00
34	S	n-triacontane-d62	0.739	0.718	2.8	95	0.00
35		n-C30	0.940	0.923	1.8	95	0.00
36		n-C31	0.908	0.893	1.7	95	0.00
37		n-C32	0.916	0.905	1.2	95	0.00
38		n-C33	0.866	0.855	1.3	95	0.00
39		n-C34	0.882	0.876	0.7	96	0.00
40		n-C35	0.873	0.868	0.6	96	0.00
41		n-C36	0.898	0.898	0.0	96	0.00
42		n-C37	0.845	0.850	-0.6	97	0.00
43		n-C38	0.848	0.856	-0.9	97	0.01

44	n-C39	0.835	0.839	-0.5	96	0.00
45	n-C40	0.828	0.843	-1.8	97	0.02

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0#	-8.54#
9	i-14	0.019	0.000	100.0#	0#	-9.24#
11	i-15	0.019	0.000	100.0#	0#	-10.40#
13	i-16	0.019	0.000	100.0#	0#	-11.32#
17	i-18	0.019	0.000	100.0#	0#	-13.18#
46	TPH	0.018	0.000	100.0#	0#	-27.84#
47	TRH1	0.018	0.000	100.0#	0#	-7.42#
48	TRH2	0.018	0.000	100.0#	0#	-15.26#
49	TRH3	0.018	0.000	100.0#	0#	-22.40#
50	TRH4	0.018	0.000	100.0#	0#	-27.21#
51	TRH5	0.018	0.000	100.0#	0#	-31.98#
52	TRH6	0.018	0.000	100.0#	0#	-42.97#
53	GRO	0.018	0.000	100.0#	0#	-5.05#
54	DRO	0.018	0.000	100.0#	0#	-13.71#
55	RRO	0.018	0.000	100.0#	0#	-31.63#

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

FID1C08FRONT101514.M Fri Oct 24 14:17:21 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256B.D
Signal(s) : FID1A.CH
Acq On : 23-Oct-2014, 20:42:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:17:09 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.410	257467	50.000	ug/mlm
16)	I 5a-androstane	17.390	323679	50.040	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.142	125255	25.004	ug/mlm
23)	S n-eicosane-d42	16.885	131652	24.571	ug/mlm
34)	S n-triacontane-d62	28.721	117816	24.638	ug/mlm
	Target Compounds				
2)	n-C8	3.026	125829	24.560	ug/mlm
3)	n-C9	4.312	132752	24.958	ug/mlm
4)	n-C10	5.723	139207	25.172	ug/mlm
5)	n-C11	7.082	143691	25.357	ug/mlm
7)	n-C12	8.348	149534	25.325	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	9.524	152214	25.382	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.622	153434	25.164	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.656	155796	25.096	ug/mlm
15)	n-C16	12.650	156416	25.010	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.700	159087	25.223	ug/mlm
19)	Pristane	13.812	157877	25.080	ug/mlm
20)	n-C18	14.828	157824	25.228	ug/mlm
21)	Phytane	14.983	140143	25.872	ug/mlm
22)	n-C19	16.026	161601	25.964	ug/mlm
24)	n-C20	17.274	158280	25.148	ug/mlm
25)	n-C21	18.551	162289	25.187	ug/mlm
26)	n-C22	19.837	159226	24.988	ug/mlm
27)	n-C23	21.115	158026	24.979	ug/mlm
28)	n-C24	22.373	156997	24.990	ug/mlm
29)	n-C25	23.602	155545	24.873	ug/mlm
30)	n-C26	24.802	156666	24.756	ug/mlm
31)	n-C27	25.965	153965	24.730	ug/mlm
32)	n-C28	27.095	152400	24.662	ug/mlm
33)	n-C29	28.193	150442	24.651	ug/mlm
35)	n-C30	29.255	149505	24.582	ug/mlm
36)	n-C31	30.289	148438	25.271	ug/mlm
37)	n-C32	31.288	146939	24.790	ug/mlm
38)	n-C33	32.261	138287	24.693	ug/mlm
39)	n-C34	33.204	141957	24.886	ug/mlm
40)	n-C35	34.131	140375	24.849	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256B.D
Signal(s) : FID1A.CH
Acq On : 23-Oct-2014, 20:42:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:17:09 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.151	145288	25.007	ug/mlm
42)	n-C37	36.319	141770	25.931	ug/mlm
43)	n-C38	37.676	139037	25.362	ug/mlm
44)	n-C39	39.256	136312	25.237	ug/mlm
45)	n-C40	41.125	136430	25.477	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

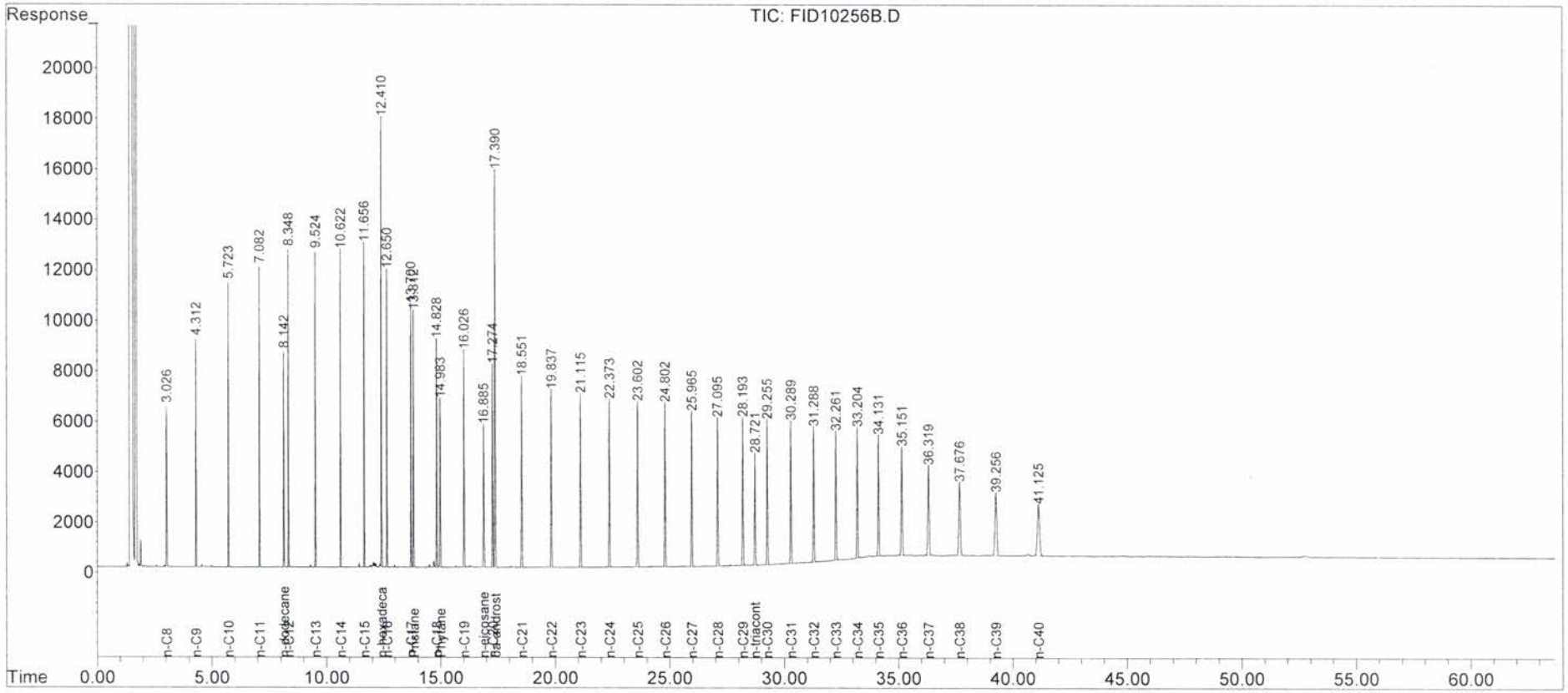
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256B.D
Signal(s) : FID1A.CH
Acq On : 23-Oct-2014, 20:42:47
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:17:09 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256G.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 07:17:29
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:22:26 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	98	0.00
2		n-C8	0.995	0.967	2.8	97	0.00
3		n-C9	1.033	1.014	1.8	98	0.00
4		n-C10	1.074	1.065	0.8	99	0.00
5		n-C11	1.100	1.097	0.3	99	0.00
6	S	n-dodecane-d26	0.973	0.960	1.3	99	0.00
7		n-C12	1.147	1.146	0.1	99	0.00
10		n-C13	1.165	1.167	-0.2	98	0.00
12		n-C14	1.184	1.185	-0.1	98	0.00
14		n-C15	1.206	1.203	0.2	98	0.00
15		n-C16	1.215	1.211	0.3	97	0.00
16	I	5a-androstane	1.000	1.000	0.0	97	0.00
18		n-C17	0.975	0.976	-0.1	97	0.00
19		Pristane	0.973	0.973	0.0	97	0.00
20		n-C18	0.967	0.969	-0.2	97	0.00
21		Phytane	0.837	0.840	-0.4	97	0.00
22		n-C19	0.962	0.962	0.0	97	0.00
23	S	n-eicosane-d42	0.828	0.817	1.3	97	0.00
24		n-C20	0.973	0.975	-0.2	97	0.00
25		n-C21	0.996	0.999	-0.3	97	0.00
26		n-C22	0.985	0.982	0.3	97	0.00
27		n-C23	0.978	0.977	0.1	97	0.00
28		n-C24	0.971	0.970	0.1	97	0.00
29		n-C25	0.967	0.963	0.4	97	0.00
30		n-C26	0.978	0.972	0.6	96	0.00
31		n-C27	0.963	0.956	0.7	96	0.00
32		n-C28	0.955	0.947	0.8	96	0.00
33		n-C29	0.943	0.932	1.2	96	0.00
34	S	n-triacontane-d62	0.739	0.722	2.3	96	0.00
35		n-C30	0.940	0.931	1.0	96	0.00
36		n-C31	0.908	0.902	0.7	96	0.00
37		n-C32	0.916	0.912	0.4	96	0.00
38		n-C33	0.866	0.864	0.2	97	0.00
39		n-C34	0.882	0.884	-0.2	97	0.00
40		n-C35	0.873	0.877	-0.5	97	0.00
41		n-C36	0.898	0.906	-0.9	97	0.00
42		n-C37	0.845	0.856	-1.3	98	0.00
43		n-C38	0.848	0.863	-1.8	98	0.00

44	n-C39	0.835	0.857	-2.6	99	0.00
45	n-C40	0.828	0.850	-2.7	98	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0#	-8.54#
9	i-14	0.019	0.000	100.0#	0#	-9.24#
11	i-15	0.019	0.000	100.0#	0#	-10.40#
13	i-16	0.019	0.000	100.0#	0#	-11.32#
17	i-18	0.019	0.000	100.0#	0#	-13.18#
46	TPH	0.018	0.000	100.0#	0#	-27.84#
47	TRH1	0.018	0.000	100.0#	0#	-7.42#
48	TRH2	0.018	0.000	100.0#	0#	-15.26#
49	TRH3	0.018	0.000	100.0#	0#	-22.40#
50	TRH4	0.018	0.000	100.0#	0#	-27.21#
51	TRH5	0.018	0.000	100.0#	0#	-31.98#
52	TRH6	0.018	0.000	100.0#	0#	-42.97#
53	GRO	0.018	0.000	100.0#	0#	-5.05#
54	DRO	0.018	0.000	100.0#	0#	-13.71#
55	RRO	0.018	0.000	100.0#	0#	-31.63#

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

FID1C08FRONT101514.M Fri Oct 24 14:22:45 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256G.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 07:17:29
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:22:26 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.409	258023	50.000	ug/mlm
16) I	5a-androstane	17.386	323959	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.140	123897	24.679	ug/mlm
23) S	n-eicosane-d42	16.882	131469	24.516	ug/mlm
34) S	n-triacontane-d62	28.714	118567	24.774	ug/mlm
Target Compounds					
2)	n-C8	3.023	125093	24.364	ug/mlm
3)	n-C9	4.309	131380	24.647	ug/mlm
4)	n-C10	5.721	137354	24.783	ug/mlm
5)	n-C11	7.080	141780	24.966	ug/mlm
7)	n-C12	8.346	147898	24.994	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	9.523	151252	25.167	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.621	152865	25.017	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.654	155620	25.014	ug/mlm
15)	n-C16	12.647	156398	24.954	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.698	158827	25.160	ug/mlm
19)	Pristane	13.809	157860	25.056	ug/mlm
20)	n-C18	14.825	157651	25.179	ug/mlm
21)	Phytane	14.981	140358	25.889	ug/mlm
22)	n-C19	16.023	161440	25.916	ug/mlm
24)	n-C20	17.271	158380	25.142	ug/mlm
25)	n-C21	18.547	162406	25.184	ug/mlm
26)	n-C22	19.834	159263	24.972	ug/mlm
27)	n-C23	21.111	158452	25.025	ug/mlm
28)	n-C24	22.368	157421	25.036	ug/mlm
29)	n-C25	23.598	156370	24.983	ug/mlm
30)	n-C26	24.798	157636	24.888	ug/mlm
31)	n-C27	25.961	154919	24.862	ug/mlm
32)	n-C28	27.089	153421	24.806	ug/mlm
33)	n-C29	28.189	151019	24.725	ug/mlm
35)	n-C30	29.251	150826	24.778	ug/mlm
36)	n-C31	30.280	149994	25.514	ug/mlm
37)	n-C32	31.283	148273	24.993	ug/mlm
38)	n-C33	32.254	139862	24.953	ug/mlm
39)	n-C34	33.198	143332	25.105	ug/mlm
40)	n-C35	34.126	142072	25.128	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256G.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 07:17:29
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:22:26 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.145	146651	25.220	ug/mlm
42)	n-C37	36.311	142784	26.094	ug/mlm
43)	n-C38	37.669	140161	25.545	ug/mlm
44)	n-C39	39.246	139332	25.773	ug/mlm
45)	n-C40	41.107	137762	25.703	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

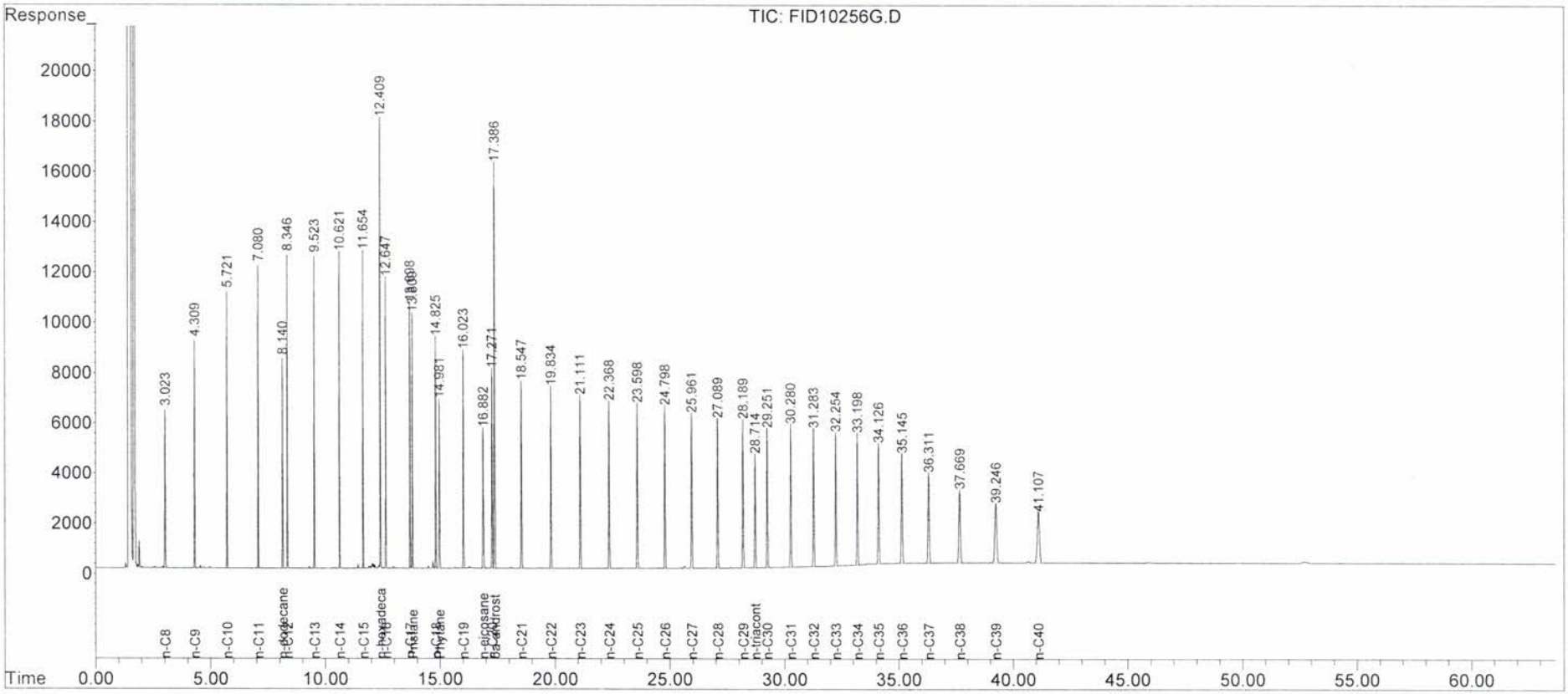
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3351\FID10256\
Data File : FID10256G.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 07:17:29
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:22:26 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID10256C.D**		FID10256C.D
Sample Name	**AL-SRM2779-20-003**		AL-SRM2779-20-003
Misc Info	**0**		23-Oct-2014, 21:53:12
Data File Path	**C:\msdchem\2\data\FID10256**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**23-Oct-2014, 21:53:12**		0.05
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	3
Vial Number	**3**	IS Area 1	245953
Sample Multiplier	**0.05**	IS Area 2	359372

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.02	1470150	15.02	15.019
3)	n-C9	4.32	1256680	12.37	12.366
4)	n-C10	5.73	1150190	10.89	10.886
5)	n-C11	7.09	1054910	9.74	9.744
7)	n-C12	8.36	977221	8.66	8.662
8)	i-13	8.54	220048	1.92	1.921
9)	i-14	9.25	213567	1.83	1.833
10)	n-C13	9.53	876920	7.65	7.654
11)	i-15	10.40	202590	1.71	1.708
12)	n-C14	10.63	766638	6.58	6.581
13)	i-16	11.30	328962	2.75	2.753
14)	n-C15	11.67	771944	6.51	6.509
15)	n-C16	12.66	696542	5.83	5.829
17)	i-18	13.19	197931	1.42	1.425
18)	n-C17	13.71	583970	4.17	4.170
19)	Pristane	13.81	323996	2.32	2.318
20)	n-C18	14.84	502425	3.62	3.617
21)	Phytane	14.99	197079	1.64	1.638
22)	n-C19	16.04	417797	3.02	3.023
24)	n-C20	17.29	379690	2.72	2.717
25)	n-C21	18.56	316018	2.21	2.209
26)	n-C22	19.85	280543	1.98	1.983
27)	n-C23	21.12	249425	1.78	1.776
28)	n-C24	22.38	219071	1.57	1.570
29)	n-C25	23.61	188638	1.36	1.358
30)	n-C26	24.81	155796	1.11	1.109
31)	n-C27	25.97	120087	0.87	0.869
32)	n-C28	27.10	93671.3	0.68	0.683
33)	n-C29	28.20	91945.2	0.68	0.678
35)	n-C30	29.26	88936.3	0.66	0.659
36)	n-C31	30.29	74533.7	0.57	0.571
37)	n-C32	31.29	56893.7	0.43	0.432
38)	n-C33	32.26	57701.4	0.46	0.464
39)	n-C34	33.20	55902.2	0.44	0.441
40)	n-C35	34.13	40149	0.32	0.320
41)	n-C36	35.15	27414.5	0.21	0.213
42)	n-C37	36.32	25146.7	0.21	0.207
43)	n-C38	37.68	21242.2	0.17	0.174
44)	n-C39	39.26	20101.5	0.17	0.168
45)	n-C40	41.12	21808.5	0.18	0.183
46)	TPH	5.73	85009400	642.33	642.325
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	8.14	95236.1	1.00	99.5
23)	n-eicosane-d42	16.89	114549	0.96	96.5
34)	n-triacontane-d62	28.73	92561	0.87	87.2
1)	n-hexadecane-d34	12.41	245953	2.50	245953.000
16)	5a-androstane	17.40	359372	50.04	359372.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : FID10256C.D
Signal(s) : FID1A.CH
Acq On : 23-Oct-2014, 21:53:12
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Oct 24 13:42:45 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.415	245953	50.000 ug/mlm
16) I	5a-androstane	17.400	359372	50.040 ug/mlm
System Monitoring Compounds				
6) S	n-dodecane-d26	8.144	95236	0.995 ug/mlm
23) S	n-eicosane-d42	16.890	114549	0.963 ug/mlm
34) S	n-triacontane-d62	28.728	92561	0.872 ug/mlm
Target Compounds				
2)	n-C8	3.023	1470148	15.019 ug/mlm
3)	n-C9	4.316	1256683	12.366 ug/mlm
4)	n-C10	5.730	1150189	10.886 ug/mlm
5)	n-C11	7.091	1054913	9.744 ug/mlm
7)	n-C12	8.358	977221	8.662 ug/mlm
8)	i-13	8.540	220048	1.921 ug/mlm
9)	i-14	9.247	213567	1.833 ug/mlm
10)	n-C13	9.534	876920	7.654 ug/mlm
11)	i-15	10.403	202590	1.708 ug/mlm
12)	n-C14	10.633	766638	6.581 ug/mlm
13)	i-16	11.301	328962	2.753 ug/mlm
14)	n-C15	11.666	771944	6.509 ug/mlm
15)	n-C16	12.660	696542	5.829 ug/mlm
17)	i-18	13.191	197931	1.425 ug/mlm
18)	n-C17	13.711	583970	4.170 ug/mlm
19)	Pristane	13.814	323996	2.318 ug/mlm
20)	n-C18	14.839	502425	3.617 ug/mlm
21)	Phytane	14.990	197079	1.638 ug/mlm
22)	n-C19	16.038	417797	3.023 ug/mlm
24)	n-C20	17.285	379690	2.717 ug/mlm
25)	n-C21	18.562	316018	2.209 ug/mlm
26)	n-C22	19.847	280543	1.983 ug/mlm
27)	n-C23	21.124	249425	1.776 ug/mlm
28)	n-C24	22.382	219071	1.570 ug/mlm
29)	n-C25	23.611	188638	1.358 ug/mlm
30)	n-C26	24.810	155796	1.109 ug/mlm
31)	n-C27	25.971	120087	0.869 ug/mlm
32)	n-C28	27.101	93671	0.683 ug/mlm
33)	n-C29	28.199	91945	0.678 ug/mlm
35)	n-C30	29.261	88936	0.659 ug/mlm
36)	n-C31	30.291	74534	0.571 ug/mlm
37)	n-C32	31.291	56894	0.432 ug/mlm
38)	n-C33	32.263	57701	0.464 ug/mlm
39)	n-C34	33.203	55902	0.441 ug/mlm
40)	n-C35	34.134	40149	0.320 ug/mlm

Data Path : C:\msdchem\2\data\FID10256\
Data File : FID10256C.D
Signal(s) : FID1A.CH
Acq On : 23-Oct-2014, 21:53:12
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Oct 24 13:42:45 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.153	27414	0.213	ug/mlm
42)	n-C37	36.323	25147	0.207	ug/mlm
43)	n-C38	37.680	21242	0.174	ug/mlm
44)	n-C39	39.263	20102	0.168	ug/mlm
45)	n-C40	41.116	21809	0.183	ug/mlm
46)	TPH	5.730f	85009428	642.326	ug/mlm
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

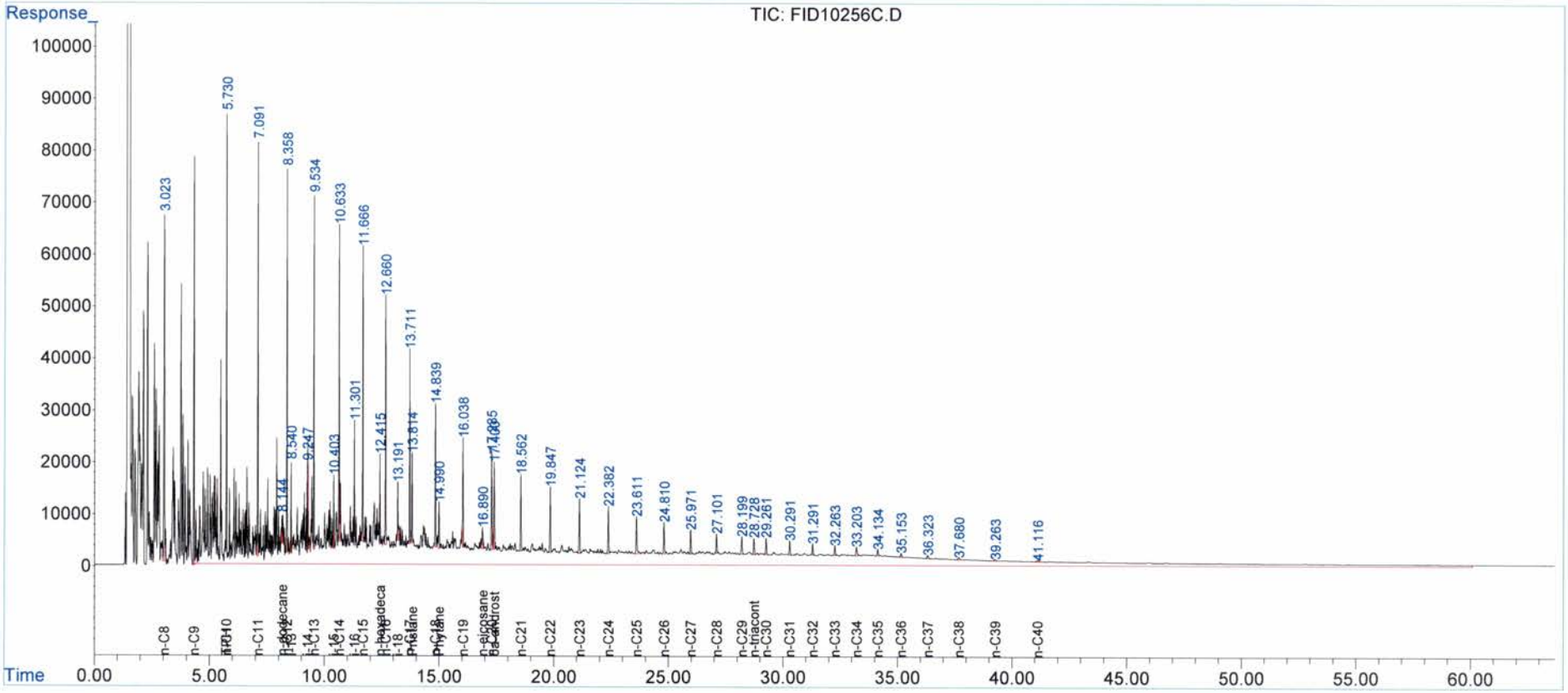
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : FID10256C.D
Signal(s) : FID1A.CH
Acq On : 23-Oct-2014, 21:53:12
Operator : Meghan Dailey
Sample : AL-SRM2779-20-003
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Oct 24 13:42:45 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID10256F.D**		FID10256F.D
Sample Name	**AI-WKPEM-003**		AI-WKPEM-003
Misc Info	**0**		24-Oct-2014, 01:24:46
Data File Path	**C:\msdchem\2\data\FID10256**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**24-Oct-2014, 01:24:46**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	5
Vial Number	**5**	IS Area 1	262071
Sample Multiplier	**1**	IS Area 2	328159

#	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	12.41	5929590	981.30	981.304
47)	TRH1	8.14	110797	18.34	18.336
48)	TRH2	12.41	747606	123.72	123.723
49)	TRH3	26.57	9033.49	1.49	1.495
50)	TRH4	28.72	112069	18.55	18.547
51)	TRH5	34.76	13669.3	2.26	2.262
52)	TRH6	37.77	15337.4	2.54	2.538
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	8.14	102057	20.02	100.1
23)	n-eicosane-d42	16.88	108318	19.94	99.9
34)	n-triacontane-d62	28.72	99643.7	20.55	102.8
1)	n-hexadecane-d34	12.41	262071	50.00	262071.000
16)	5a-androstane	17.39	328159	50.04	328159.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : FID10256F.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 01:24:46
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:06:13 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.410	262071	50.000	ug/mlm
16) I	5a-androstane	17.388	328159	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.140	102057	20.015	ug/mlm
23) S	n-eicosane-d42	16.882	108318	19.940	ug/mlm
34) S	n-triacontane-d62	28.717	99644	20.554	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

Data Path : C:\msdchem\2\data\FID10256\
Data File : FID10256F.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 01:24:46
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:06:13 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.410f	5929593	981.304	ug/mlm
47)	TRH1	8.140	110797	18.336	ug/mlm
48)	TRH2	12.410f	747606	123.723	ug/mlm
49)	TRH3	26.573f	9033	1.495	ug/mlm
50)	TRH4	28.717f	112069	18.547	ug/mlm
51)	TRH5	34.763f	13669	2.262	ug/mlm
52)	TRH6	37.771f	15337	2.538	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

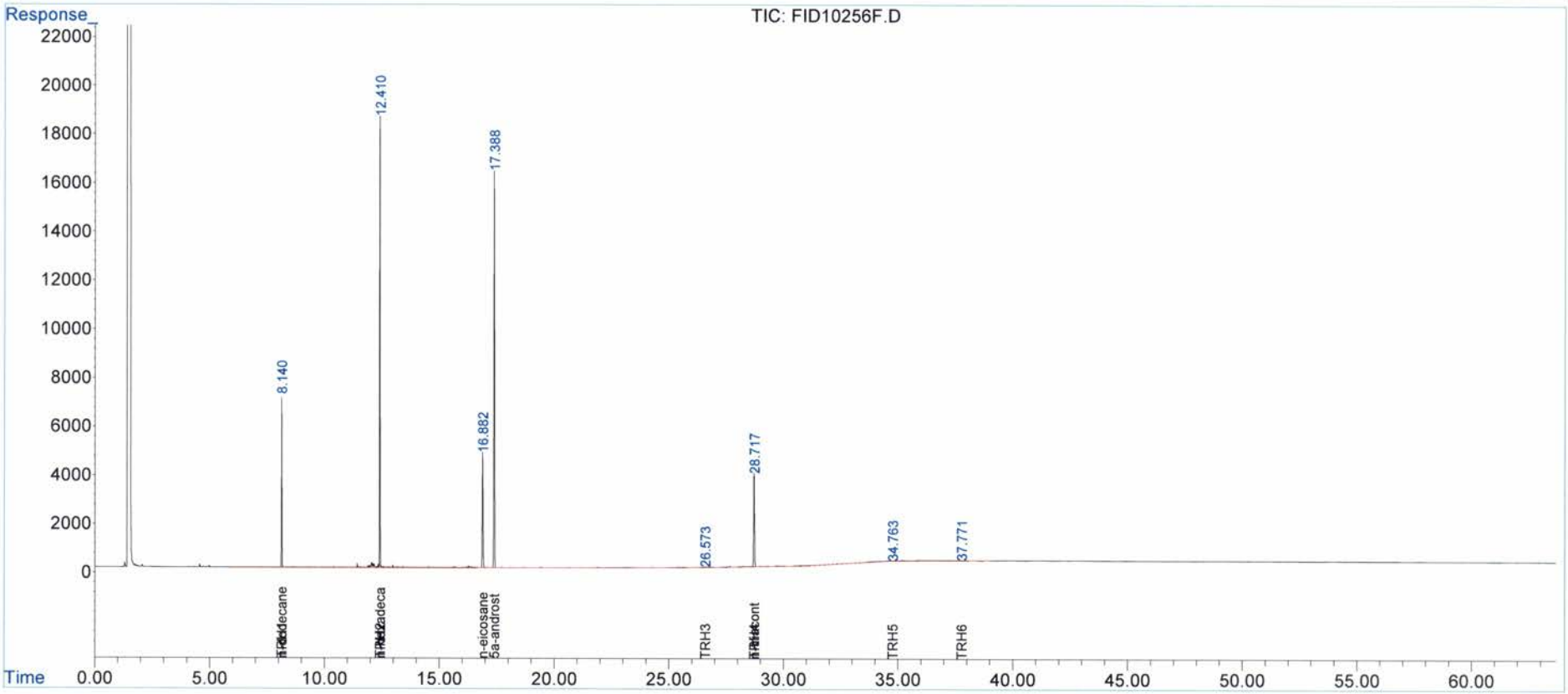
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : FID10256F.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 01:24:46
Operator : Meghan Dailey
Sample : Al-WKPEM-003
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:06:13 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3351A.D**		ENV3351A.D
Sample Name	**Method Blank**		Method Blank
Misc Info	**0**		24-Oct-2014, 02:35:21
Data File Path	**C:\msdchem\2\data\FID10256**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**24-Oct-2014, 02:35:21**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	6
Vial Number	**6**	IS Area 1	239334
Sample Multiplier	**1**	IS Area 2	300721

#	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	12.41	5414070	977.74	977.739
47)	TRH1	12.41	366707	66.22	66.224
48)	TRH2	17.39	417633	75.42	75.421
49)	TRH3	26.32	8635.74	1.56	1.560
50)	TRH4	28.71	98069.8	17.71	17.711
51)	TRH5	34.87	22470.5	4.06	4.058
52)	TRH6	36.97	5435.48	0.98	0.982
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	8.14	86645.6	18.61	93.0
23)	n-eicosane-d42	16.88	97158.9	19.52	97.8
34)	n-triacontane-d62	28.71	87925.7	19.79	99.0
1)	n-hexadecane-d34	12.41	239334	50.00	239334.000
16)	5a-androstane	17.39	300721	50.04	300721.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351A.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 02:35:21
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:05:22 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.408	239334	50.000	ug/mlm
16) I	5a-androstane	17.386	300721	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.140	86646	18.607	ug/mlm
23) S	n-eicosane-d42	16.883	97159	19.518	ug/mlm
34) S	n-triacontane-d62	28.714	87926	19.791	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

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351A.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 02:35:21
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:05:22 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.408f	5414071	977.739	ug/mlm
47)	TRH1	12.408f	366707	66.224	ug/mlm
48)	TRH2	17.386	417633	75.421	ug/mlm
49)	TRH3	26.319f	8636	1.560	ug/mlm
50)	TRH4	28.714f	98070	17.711	ug/mlm
51)	TRH5	34.873f	22471	4.058	ug/mlm
52)	TRH6	36.967f	5435	0.982	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

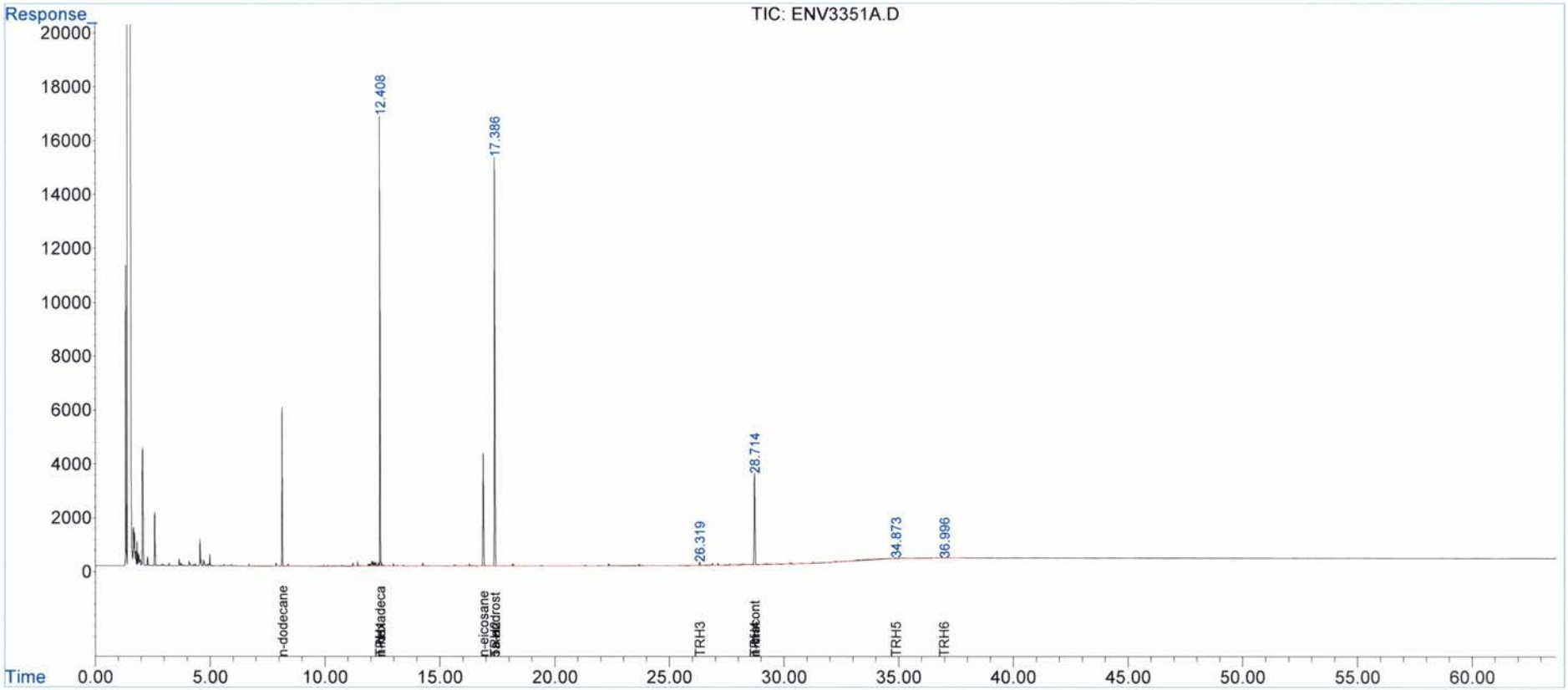
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351A.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 02:35:21
Operator : Meghan Dailey
Sample : Method Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:05:22 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3351B.D**		ENV3351B.D
Sample Name	**Blank Spike**		Blank Spike
Misc Info	**0**		24-Oct-2014, 03:45:58
Data File Path	**C:\msdchem\2\data\FID10256**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**24-Oct-2014, 03:45:58**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	7
Vial Number	**7**	IS Area 1	221566
Sample Multiplier	**1**	IS Area 2	278301

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.02	28305.6	6.42	6.420
3)	n-C9	4.31	39366.4	8.60	8.600
4)	n-C10	5.72	44177.3	9.28	9.283
5)	n-C11	7.08	46786.2	9.59	9.594
7)	n-C12	8.34	49304.7	9.70	9.703
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.52	50654.7	9.82	9.815
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.62	51503.4	9.82	9.816
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.65	52857.4	9.89	9.894
15)	n-C16	12.65	53335.5	9.91	9.910
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.70	54500.5	10.05	10.050
19)	Pristane	13.81	54206.8	10.02	10.015
20)	n-C18	14.82	54174.8	10.07	10.072
21)	Phytane	14.98	48479.5	10.41	10.409
22)	n-C19	16.02	56398.7	10.54	10.539
24)	n-C20	17.27	54659.8	10.10	10.101
25)	n-C21	18.55	56090.2	10.12	10.125
26)	n-C22	19.83	55059.7	10.05	10.050
27)	n-C23	21.11	54646.9	10.05	10.046
28)	n-C24	22.36	56400.5	10.44	10.441
29)	n-C25	23.59	53983.1	10.04	10.040
30)	n-C26	24.79	54306.3	9.98	9.981
31)	n-C27	25.96	53930.6	10.07	10.075
32)	n-C28	27.09	54124.9	10.19	10.187
33)	n-C29	28.19	52393.2	9.98	9.985
35)	n-C30	29.25	52091.1	9.96	9.962
36)	n-C31	30.28	52252.6	10.35	10.346
37)	n-C32	31.28	51058.6	10.02	10.019
38)	n-C33	32.25	48134.7	10.00	9.997
39)	n-C34	33.20	49148	10.02	10.021
40)	n-C35	34.12	48943.5	10.08	10.077
41)	n-C36	35.14	50367.7	10.08	10.083
42)	n-C37	36.30	49057.2	10.44	10.436
43)	n-C38	37.65	47929.3	10.17	10.168
44)	n-C39	39.24	47786.1	10.29	10.290
45)	n-C40	41.10	47306.3	10.27	10.274
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	8.14	82863.2	19.22	96.1
23)	n-eicosane-d42	16.88	91441.2	19.85	99.4
34)	n-triacontane-d62	28.72	82350.8	20.03	100.2
1)	n-hexadecane-d34	12.41	221566	50.00	221566.000
16)	5a-androstane	17.39	278301	50.04	278301.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351B.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 03:45:58
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 13:48:19 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.409	221566	50.000	ug/mlm
16) I	5a-androstane	17.385	278301	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.140	82863	19.222	ug/mlm
23) S	n-eicosane-d42	16.882	91441	19.849	ug/mlm
34) S	n-triacontane-d62	28.716	82351	20.030	ug/mlm
	Target Compounds				
2)	n-C8	3.024	28306	6.420	ug/mlm
3)	n-C9	4.309	39366	8.600	ug/mlm
4)	n-C10	5.720	44177	9.283	ug/mlm
5)	n-C11	7.079	46786	9.594	ug/mlm
7)	n-C12	8.345	49305	9.703	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	9.521	50655	9.815	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.620	51503	9.816	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.652	52857	9.894	ug/mlm
15)	n-C16	12.646	53336	9.910	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.696	54501	10.050	ug/mlm
19)	Pristane	13.808	54207	10.015	ug/mlm
20)	n-C18	14.823	54175	10.072	ug/mlm
21)	Phytane	14.978	48479	10.409	ug/mlm
22)	n-C19	16.021	56399	10.539	ug/mlm
24)	n-C20	17.268	54660	10.100	ug/mlm
25)	n-C21	18.545	56090	10.125	ug/mlm
26)	n-C22	19.831	55060	10.050	ug/mlm
27)	n-C23	21.109	54647	10.046	ug/mlm
28)	n-C24	22.365	56401	10.441	ug/mlm
29)	n-C25	23.595	53983	10.040	ug/mlm
30)	n-C26	24.794	54306	9.981	ug/mlm
31)	n-C27	25.959	53931	10.075	ug/mlm
32)	n-C28	27.088	54125	10.187	ug/mlm
33)	n-C29	28.188	52393	9.985	ug/mlm
35)	n-C30	29.247	52091	9.961	ug/mlm
36)	n-C31	30.277	52253	10.346	ug/mlm
37)	n-C32	31.279	51059	10.019	ug/mlm
38)	n-C33	32.248	48135	9.997	ug/mlm
39)	n-C34	33.196	49148	10.021	ug/mlm
40)	n-C35	34.124	48943	10.077	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351B.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 03:45:58
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 13:48:19 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.140	50368	10.083	ug/mlm
42)	n-C37	36.304	49057	10.436	ug/mlm
43)	n-C38	37.654	47929	10.168	ug/mlm
44)	n-C39	39.243	47786	10.290	ug/mlm
45)	n-C40	41.098	47306	10.274	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

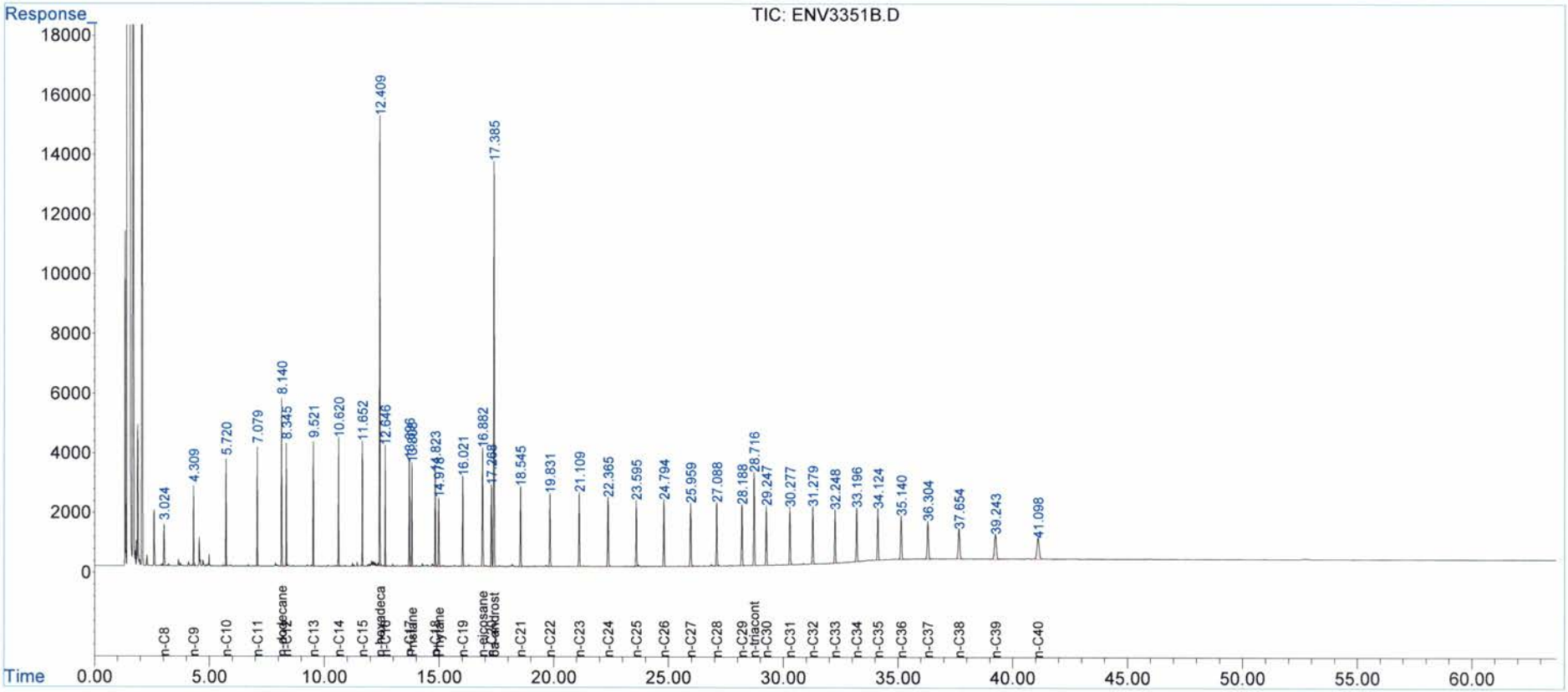
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351B.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 03:45:58
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 13:48:19 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3351C.D**		ENV3351C.D
Sample Name	**Blank Spike Dup**		Blank Spike Dup
Misc Info	**0**		24-Oct-2014, 04:56:24
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3351\FID10256**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**24-Oct-2014, 04:56:24**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	8
Vial Number	**8**	IS Area 1	236344
Sample Multiplier	**1**	IS Area 2	297010

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.02	29376.4	6.25	6.246
3)	n-C9	4.31	41187.6	8.44	8.435
4)	n-C10	5.72	46807.3	9.22	9.220
5)	n-C11	7.08	49695.3	9.55	9.553
7)	n-C12	8.34	52394	9.67	9.666
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.52	53892.7	9.79	9.790
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.62	54843.1	9.80	9.798
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.65	57158.2	10.03	10.030
15)	n-C16	12.65	57136.3	9.95	9.952
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.70	58296.7	10.07	10.073
19)	Pristane	13.81	57936.9	10.03	10.030
20)	n-C18	14.82	57918.7	10.09	10.090
21)	Phytane	14.98	51810.3	10.42	10.424
22)	n-C19	16.02	60370.6	10.57	10.571
24)	n-C20	17.27	58493.1	10.13	10.128
25)	n-C21	18.55	59845.6	10.12	10.122
26)	n-C22	19.83	58912.3	10.08	10.076
27)	n-C23	21.11	58364.2	10.05	10.054
28)	n-C24	22.36	60088.3	10.42	10.423
29)	n-C25	23.60	57402.4	10.00	10.003
30)	n-C26	24.79	57911.1	9.97	9.973
31)	n-C27	25.96	57439.5	10.05	10.054
32)	n-C28	27.09	57735	10.18	10.182
33)	n-C29	28.19	55757.1	9.96	9.957
35)	n-C30	29.25	55243.8	9.90	9.899
36)	n-C31	30.28	55794.2	10.35	10.352
37)	n-C32	31.28	54518.8	10.02	10.024
38)	n-C33	32.25	51055.6	9.94	9.935
39)	n-C34	33.19	52499	10.03	10.030
40)	n-C35	34.12	51973.6	10.03	10.027
41)	n-C36	35.14	53702.5	10.07	10.073
42)	n-C37	36.30	52083	10.38	10.382
43)	n-C38	37.66	51222.9	10.18	10.183
44)	n-C39	39.24	50759.1	10.24	10.241
45)	n-C40	41.10	50257.1	10.23	10.228
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	8.14	87129.5	18.95	94.7
23)	n-eicosane-d42	16.88	97005.1	19.73	98.9
34)	n-triacontane-d62	28.71	87021.9	19.83	99.2
1)	n-hexadecane-d34	12.41	236344	50.00	236344.000
16)	5a-androstane	17.39	297010	50.04	297010.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351C.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 04:56:24
Operator : Meghan Dailey
Sample : Blank Spike Dup
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 13:52:54 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.408	236344	50.000	ug/mlm
16) I	5a-androstane	17.386	297010	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.139	87129	18.947	ug/mlm
23) S	n-eicosane-d42	16.882	97005	19.731	ug/mlm
34) S	n-triacontane-d62	28.715	87022	19.833	ug/mlm
	Target Compounds				
2)	n-C8	3.021	29376	6.246	ug/mlm
3)	n-C9	4.308	41188	8.435	ug/mlm
4)	n-C10	5.719	46807	9.220	ug/mlm
5)	n-C11	7.078	49695	9.553	ug/mlm
7)	n-C12	8.344	52394	9.666	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	9.521	53893	9.790	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.619	54843	9.798	ug/mlm
13)	i-16	0.000	0	N.D.	ug/ml
14)	n-C15	11.652	57158	10.030	ug/mlm
15)	n-C16	12.645	57136	9.952	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.696	58297	10.073	ug/mlm
19)	Pristane	13.808	57937	10.030	ug/mlm
20)	n-C18	14.823	57919	10.090	ug/mlm
21)	Phytane	14.979	51810	10.424	ug/mlm
22)	n-C19	16.020	60371	10.571	ug/mlm
24)	n-C20	17.267	58493	10.128	ug/mlm
25)	n-C21	18.546	59846	10.122	ug/mlm
26)	n-C22	19.831	58912	10.076	ug/mlm
27)	n-C23	21.108	58364	10.054	ug/mlm
28)	n-C24	22.364	60088	10.423	ug/mlm
29)	n-C25	23.595	57402	10.003	ug/mlm
30)	n-C26	24.794	57911	9.973	ug/mlm
31)	n-C27	25.958	57439	10.054	ug/mlm
32)	n-C28	27.087	57735	10.182	ug/mlm
33)	n-C29	28.185	55757	9.957	ug/mlm
35)	n-C30	29.248	55244	9.899	ug/mlm
36)	n-C31	30.278	55794	10.352	ug/mlm
37)	n-C32	31.278	54519	10.024	ug/mlm
38)	n-C33	32.252	51056	9.935	ug/mlm
39)	n-C34	33.194	52499	10.030	ug/mlm
40)	n-C35	34.121	51974	10.027	ug/mlm

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351C.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 04:56:24
Operator : Meghan Dailey
Sample : Blank Spike Dup
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 13:52:54 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.137	53702	10.073	ug/mlm
42)	n-C37	36.304	52083	10.382	ug/mlm
43)	n-C38	37.656	51223	10.183	ug/mlm
44)	n-C39	39.241	50759	10.241	ug/mlm
45)	n-C40	41.100	50257	10.228	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

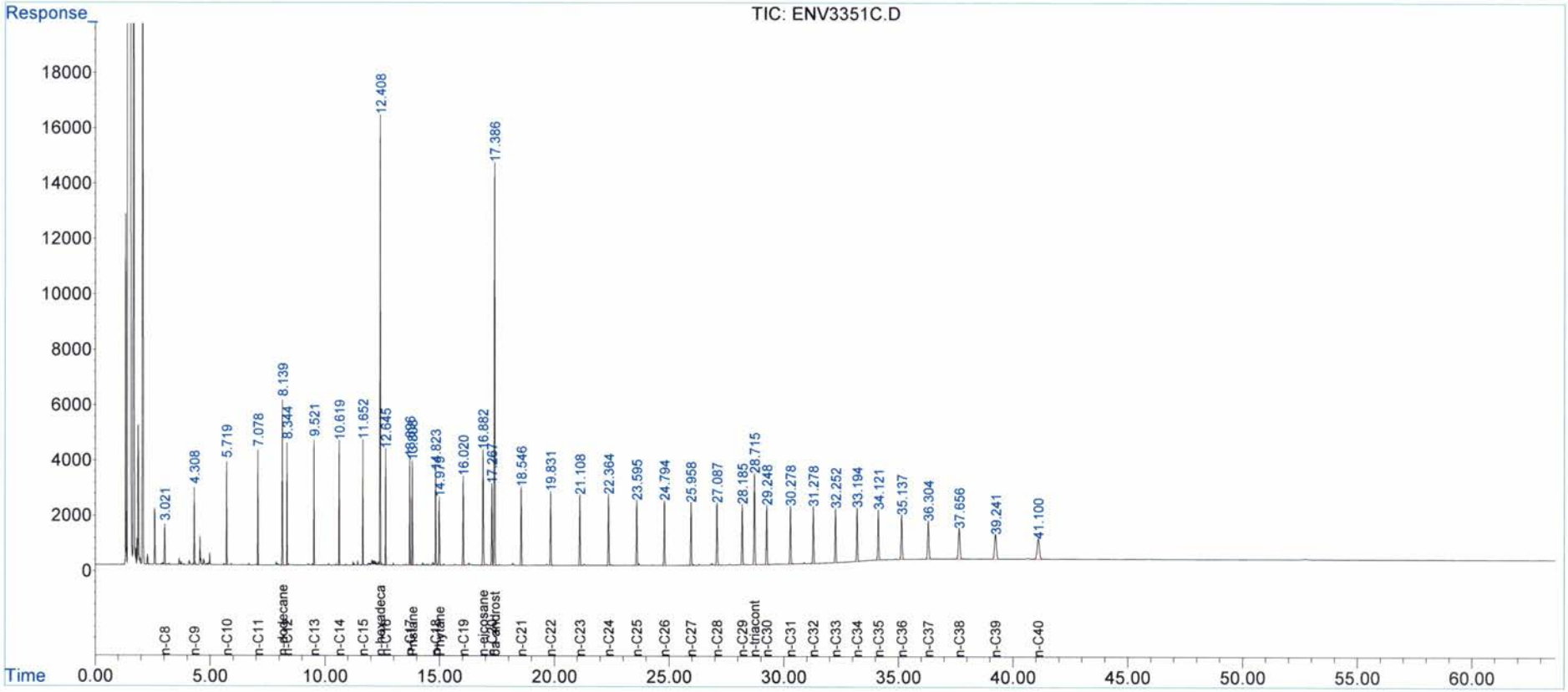
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ENV3351C.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 04:56:24
Operator : Meghan Dailey
Sample : Blank Spike Dup
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 13:52:54 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC2059.D**		ARC2059.D
Sample Name	**SHN-Cove-010(NB)102014**		SHN-Cove-010(NB)10201
Misc Info	**0**		24-Oct-2014, 06:06:55
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3351\FID10256**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**24-Oct-2014, 06:06:55**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	9
Vial Number	**9**	IS Area 1	236752
Sample Multiplier	**1**	IS Area 2	298700

#	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	13.70	520.948	0.09	0.090
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	14.81	520.237	0.09	0.090
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	16.03	456.464	0.08	0.079
24)	n-C20	17.28	311.954	0.05	0.054
25)	n-C21	18.54	603.138	0.10	0.101
26)	n-C22	19.83	160.298	0.03	0.027
27)	n-C23	21.11	275.689	0.05	0.047
28)	n-C24	22.37	677.27	0.12	0.117
29)	n-C25	23.59	437.667	0.08	0.076
30)	n-C26	24.78	745.74	0.13	0.128
31)	n-C27	25.95	1601.27	0.28	0.279
32)	n-C28	27.09	4613.04	0.81	0.809
33)	n-C29	28.19	2630.46	0.47	0.467
35)	n-C30	29.25	2412.53	0.43	0.430
36)	n-C31	30.28	3652.07	0.67	0.674
37)	n-C32	31.28	2625.55	0.48	0.480
38)	n-C33	32.25	2455.2	0.48	0.475
39)	n-C34	33.19	1592.88	0.30	0.303
40)	n-C35	34.12	955.141	0.18	0.183
41)	n-C36	35.13	699.834	0.13	0.131
42)	n-C37	36.31	661.103	0.13	0.131
43)	n-C38	37.64	489.042	0.10	0.097
44)	n-C39	39.24	484.797	0.10	0.097
45)	n-C40	41.08	500.84	0.10	0.101
46)	TPH	12.41	5615700	1021.01	1021.010
47)	TRH1	12.41	784046	142.55	142.551
48)	TRH2	23.09	68065.6	12.38	12.375
49)	TRH3	28.71	118607	21.56	21.564
50)	TRH4	30.13	25511.7	4.64	4.638
51)	TRH5	34.12	8953.48	1.63	1.628
52)	TRH6	34.87	14281.5	2.60	2.597
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	8.14	65290.3	14.17	70.9
23)	n-eicosane-d42	16.88	97296.2	19.68	98.6
34)	n-triacontane-d62	28.71	88453.7	20.04	100.3
1)	n-hexadecane-d34	12.41	236752	50.00	236752.000
16)	5a-androstane	17.38	298700	50.04	298700.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ARC2059.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 06:06:55
Operator : Meghan Dailey
Sample : SHN-Cove-010(NB)102014
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:04:14 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.409	236752	50.000	ug/mlm
16) I	5a-androstane	17.384	298700	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.139	65290	14.174	ug/mlm
23) S	n-eicosane-d42	16.881	97296	19.678	ug/mlm
34) S	n-triacontane-d62	28.714	88454	20.045	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/ml
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/ml
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.696	521	0.090	ug/mlm
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	14.812	520	0.090	ug/mlm
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	16.027	456	0.079	ug/mlm
24)	n-C20	17.277	312	0.054	ug/mlm
25)	n-C21	18.541	603	0.101	ug/mlm
26)	n-C22	19.834	160	0.027	ug/mlm
27)	n-C23	21.106	276	0.047	ug/mlm
28)	n-C24	22.365	677	0.117	ug/mlm
29)	n-C25	23.588	438	0.076	ug/mlm
30)	n-C26	24.784	746	0.128	ug/mlm
31)	n-C27	25.953	1601	0.279	ug/mlm
32)	n-C28	27.085	4613	0.809	ug/mlm
33)	n-C29	28.185	2630	0.467	ug/mlm
35)	n-C30	29.247	2413	0.430	ug/mlm
36)	n-C31	30.276	3652	0.674	ug/mlm
37)	n-C32	31.279	2626	0.480	ug/mlm
38)	n-C33	32.248	2455	0.475	ug/mlm
39)	n-C34	33.193	1593	0.303	ug/mlm
40)	n-C35	34.118	955	0.183	ug/mlm

Data Path : C:\msdchem\2\data\FID10256\
Data File : ARC2059.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 06:06:55
Operator : Meghan Dailey
Sample : SHN-Cove-010(NB)102014
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:04:14 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.134	700	0.131	ug/mlm
42)	n-C37	36.307	661	0.131	ug/mlm
43)	n-C38	37.637	489	0.097	ug/mlm
44)	n-C39	39.235	485	0.097	ug/mlm
45)	n-C40	41.083	501	0.101	ug/mlm
46)	TPH	12.409f	5615704	1021.014	ug/mlm
47)	TRH1	12.409f	784046	142.551	ug/mlm
48)	TRH2	23.093f	68066	12.375	ug/mlm
49)	TRH3	28.714f	118607	21.564	ug/mlm
50)	TRH4	30.131f	25512	4.638	ug/mlm
51)	TRH5	34.118f	8953	1.628	ug/mlm
52)	TRH6	34.872f	14282	2.597	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

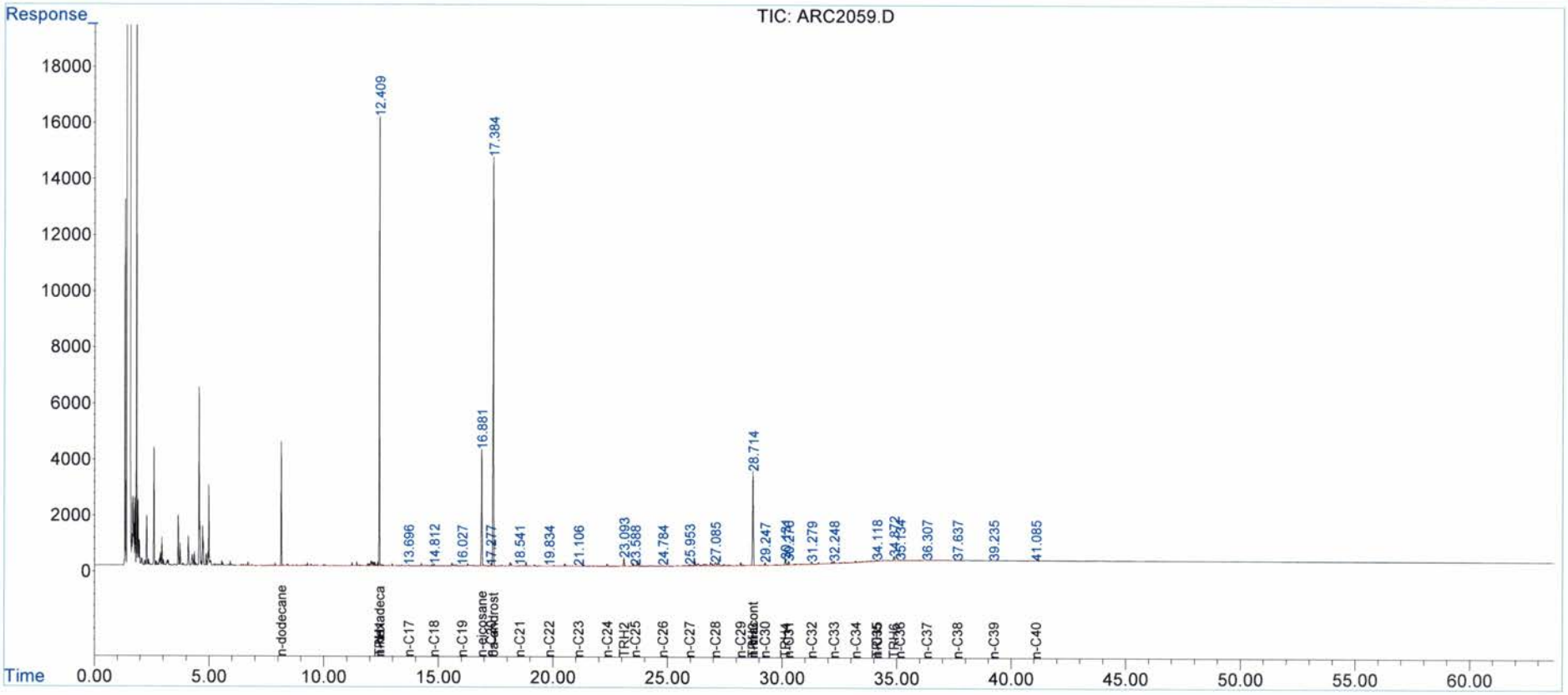
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10256\
Data File : ARC2059.D
Signal(s) : FID1A.CH
Acq On : 24-Oct-2014, 06:06:55
Operator : Meghan Dailey
Sample : SHN-Cove-010(NB)102014
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 24 14:04:14 2014
Quant Method : P:\2013\J13034\Aliphatics\ENV 3351\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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 3351	Analyst: Y. Miao
Client: Arcadis - Mayflower AR	Date: November 5, 2014
Job: #: J13034	Project Quality Manager: J Juan
SDG #: 14102201	Date: 11/16/14

Initial Calibration:	No failures	ICV (from the second source): No failures
Surrogate Recoveries:	No failures	
Method 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):	Solution: No failures SRM: NA	
Continuing Calibration (CCC):	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\MS60210.S
Comment: Arcadis-Mayflower AR-Net-PAH (11/04/14)
Operator: YM
Data Path: C:\MSDCHEM\1\DATA\MS60210\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

11/4/14 YM

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

11/4/2014 CA

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line		Sample Name/Misc Info	
1)	Sample 1	MS60210A	PAH2014A Solvent rinse
2)	Sample 2	MS60210B	PAH2014A PAH-WKC1-020-034
3)	Sample 3	MS60210C	PAH2014A PAH-WKC2-100-034
4)	Sample 4	MS60210D	PAH2014A PAH-WKC3-250-034
5)	Sample 5	MS60210E	PAH2014A PAH-WKC4-500-034
6)	Sample 6	MS60210F	PAH2014A PAH-WKC5-1000-034
7)	Sample 7	MS60210G	PAH2014A PAH-WKC6-5000-034
8)	Sample 8	MS60210H	PAH2014A PAH-WKSUIS-250-007
9)	Sample 9	MS60210I	PAH2014A PAH-WKICV-250-008
10)	Sample 10	MS60210J	PAH2014A PAH-WKCCV-250-042
11)	Sample 11	MS60210K	PAH2014A PAH-WKSRM2779-4.0-005
12)	Sample 12	ENV3351A	PAH2014A
13)	Sample 13	ENV3351B	PAH2014A
14)	Sample 14	ENV3351C	PAH2014A
15)	Sample 15	ARC2059	PAH2014A
16)	Sample 16	MS60210L	PAH2014A PAH-WKCCV-250-042

Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210J.D
Acq On : 4 Nov 2014 9:57 pm
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 05 07:14:15 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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	1.492	1.496	-0.3	87	0.00
3	T	cis/trans Decalin	0.360	0.367	-1.9	88	0.00
4	un	C1-Decalins	0.360	0.000	100.0#	0#	-12.09#
5	un	C2-Decalins	0.360	0.000	100.0#	0#	-14.05#
6	un	C3-Decalins	0.360	0.000	100.0#	0#	-16.68#
7	un	C4-Decalins	0.360	0.000	100.0#	0#	-18.57#
8	T	Naphthalene	1.761	1.757	0.2	87	0.00
9	T	2-Methylnaphthalene	1.362	1.339	1.7	87	0.00
10	T	1-Methylnaphthalene	1.128	1.111	1.5	86	0.01
11	T	2,6-Dimethylnaphthalene	1.174	1.138	3.1	85	0.00
12	T	1,6,7-Trimethylnaphthalene	1.151	1.100	4.4	85	-0.01
13	un	C2-Naphthalenes	1.761	0.000	100.0#	0#	-17.94#
14	un	C3-Naphthalenes	1.761	0.000	100.0#	0#	-19.76#
15	un	C4-Naphthalenes	1.761	0.000	100.0#	0#	-22.55#
16	T	Benzothiophene	1.418	1.423	-0.4	87	0.00
17	un	C1-Benzothiophenes	1.418	0.000	100.0#	0#	-15.86#
18	un	C2-Benzothiophenes	1.418	0.000	100.0#	0#	-18.10#
19	un	C3-Benzothiophenes	1.418	0.000	100.0#	0#	-20.04#
20	un	C4-Benzothiophenes	1.418	0.000	100.0#	0#	-21.89#
21	S	Acenaphthene-d10	0.962	0.940	2.3	86	0.00
22	T	Biphenyl	1.645	1.627	1.1	87	0.00
23	T	Acenaphthylene	1.867	1.708	8.5	82	0.00
24	T	Acenaphthene	1.125	1.092	2.9	86	-0.02
25	T	Dibenzofuran	2.018	1.978	2.0	86	0.00
26	T	Fluorene	1.444	1.393	3.5	85	-0.01
27	T	1-Methylfluorene	0.858	0.799	6.9	82	0.00
28	un	C1-Fluorenes	1.444	0.000	100.0#	0#	-23.25#
29	un	C2-Fluorenes	1.444	0.000	100.0#	0#	-25.04#
30	un	C3-Fluorenes	1.444	0.000	100.0#	0#	-26.77#
31	I	Pyrene-d10	1.000	1.000	0.0	83	0.00
32	S	Phenanthrene-d10	0.912	0.909	0.3	85	-0.01
33	T	Carbazole	1.043	0.982	5.8	78	0.00
34	T	Dibenzothiophene	1.126	1.113	1.2	84	-0.01
35	T	4-Methyldibenzothiophene	0.763	0.753	1.3	84	0.00
36	un	2/3-Methyldibenzothiophene	0.763	0.000	100.0#	0#	-25.95#
37	un	1-Methyldibenzothiophene	0.763	0.000	100.0#	0#	-26.27#
38	un	C2-Dibenzothiophenes	1.126	0.000	100.0#	0#	-27.04#
39	un	C3-Dibenzothiophenes	1.126	0.000	100.0#	0#	-28.33#
40	un	C4-Dibenzothiophenes	1.126	0.000	100.0#	0#	-30.02#
41	T	Phenanthrene	1.140	1.146	-0.5	85	0.00
42	T	Anthracene	1.076	1.020	5.2	82	-0.01
43	un	3-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.31#
44	un	2-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.47#
45	un	2-Methylanthracene	0.891	0.000	100.0#	0#	-26.31#
46	un	4/9-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.47#
47	T	1-Methylphenanthrene	0.891	0.861	3.4	83	0.00
48	T	3,6-Dimethylphenanthrene	0.781	0.736	5.8	81	0.00
49	T	Retene	0.425	0.396	6.8	81	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210J.D
Acq On : 4 Nov 2014 9:57 pm
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 05 07:14:15 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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)
50	un	C2-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-28.31#
51	un	C3-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-29.55#
52	un	C4-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-31.31#
53	T	Naphthobenzothiophene	1.199	1.129	5.8	82	0.00
54	un	C1-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-34.32#
55	un	C2-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-35.77#
56	un	C3-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-36.93#
57	un	C4-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-37.66#
58	T	Fluoranthene	1.295	1.233	4.8	82	-0.02
59	T	Pyrene	1.411	1.363	3.4	83	0.00
60	T	2-Methylfluoranthene	0.858	0.803	6.4	81	0.00
61	T	Benzo(b)fluorene	0.844	0.757	10.3	78	-0.02
62	un	C1-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-30.84#
63	un	C2-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-32.08#
64	un	C3-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-33.71#
65	un	C4-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-35.00#
66	S	Chrysene-d12	1.129	1.080	4.3	83	-0.02
67	T	Benz(a)anthracene	1.288	1.119	13.1	77	0.00
68	T	Chrysene/Triphenylene	1.319	1.246	5.5	83	-0.02
69	un	C1-Chrysenes	1.319	0.000	100.0#	0#	-35.06#
70	un	C2-Chrysenes	1.319	0.000	100.0#	0#	-36.06#
71	un	C3-Chrysenes	1.319	0.000	100.0#	0#	-38.07#
72	un	C4-Chrysenes	1.319	0.000	100.0#	0#	-39.09#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	78	0.00
74	un	C29-Hopane	0.531	0.000	100.0#	0#	-40.57#
75	un	18a-Oleanane	0.531	0.000	100.0#	0#	-41.43#
76	T	C30-Hopane	0.531	0.522	1.7	78	-0.03
77	T	Benzo(b)fluoranthene	1.448	1.446	0.1	80	-0.02
78	T	Benzo(k,j)fluoranthene	1.520	1.504	1.1	80	-0.02
79	un	Benzo(a)fluoranthene	1.520	0.000	100.0#	0#	-37.08#
80	T	Benzo(e)pyrene	1.622	1.635	-0.8	82	-0.04
81	T	Benzo(a)pyrene	1.386	1.355	2.2	79	-0.02
82	T	Indeno(1,2,3-c,d)pyrene	1.625	1.569	3.4	79	-0.03
83	T	Dibenzo(a,h)anthracene	1.323	1.284	2.9	79	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-47.41#
85	un	C2-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-49.05#
86	un	C3-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-48.44#
87	T	Benzo(g,h,i)perylene	1.378	1.363	1.1	79	-0.04
88	S	Perylene-d12	1.199	1.175	2.0	79	-0.02
89	T	Perylene	1.592	1.581	0.7	81	-0.02
90	S	5(b)H-Cholane	0.290	0.288	0.7	79	0.00
91	un	C20-TAS	0.290	0.000	100.0#	0#	-33.08#
92	un	C21-TAS	0.290	0.000	100.0#	0#	-34.00#
93	un	C26(20S)-TAS	0.290	0.000	100.0#	0#	-38.45#
94	un	C26(20R)/C27(20S)-TAS	0.290	0.000	100.0#	0#	-39.27#
95	un	C28(20S)-TAS	0.290	0.000	100.0#	0#	-39.93#
96	un	C27(20R)-TAS	0.290	0.000	100.0#	0#	-40.37#
97	un	C28(20R)-TAS	0.290	0.000	100.0#	0#	-41.23#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210J.D
Acq On : 4 Nov 2014 9:57 pm
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 05 07:14:15 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210J.D
Acq On : 4 Nov 2014 9:57 pm
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 05 07:14:15 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.152	176	182522	251.05			0.00
31) Pyrene-d10	29.389	212	330667	250.63			0.00
73) Benzo(a)pyrene-d12	38.137	264	301318	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.539	136	272094	250.84			0.00
21) Acenaphthene-d10	19.383	164	170962	244.53			0.00
32) Phenanthrene-d10	24.481	188	300095	249.37			-0.01
66) Chrysene-d12	33.590	240	356172	239.03			-0.02
88) Perylene-d12	38.429	264	353491	245.01			-0.02
90) 5(b)H-Cholane	33.977	217	86768	248.70			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.917	138	66037m	252.32			
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	13.603	128	314893	245.92			98
9) 2-Methylnaphthalene	15.851	142	241727	244.13			94
10) 1-Methylnaphthalene	16.180	142	200980	244.97			96
11) 2,6-Dimethylnaphthalene	17.942	156	206601	242.12			82
12) 1,6,7-Trimethylnaphtha...	20.785	170	200422	239.59			83
13) C2-Naphthalenes	0.000		0	N.D.	d		
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.771	134	257853	250.12			100
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	17.411	154	294870	246.55			93
23) Acenaphthylene	18.893	152	310202	228.54			97
24) Acenaphthene	19.481	154	199618	244.14			97
25) Dibenzofuran	20.074	168	358740	244.51			100
26) Fluorene	21.247	166	249632	237.80			99
27) 1-Methylfluorene	23.250	180	146358	234.50		#	76
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	25.320	167	322789	234.58			100
34) Dibenzothiophene	24.131	184	363013	244.45			98
35) 4-Methyldibenzothiophene	25.639	198	249912	248.13			100
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	24.565	178	376722	250.50			98
42) Anthracene	24.732	178	336655	237.18			97
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210J.D
Acq On : 4 Nov 2014 9:57 pm
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 05 07:14:15 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

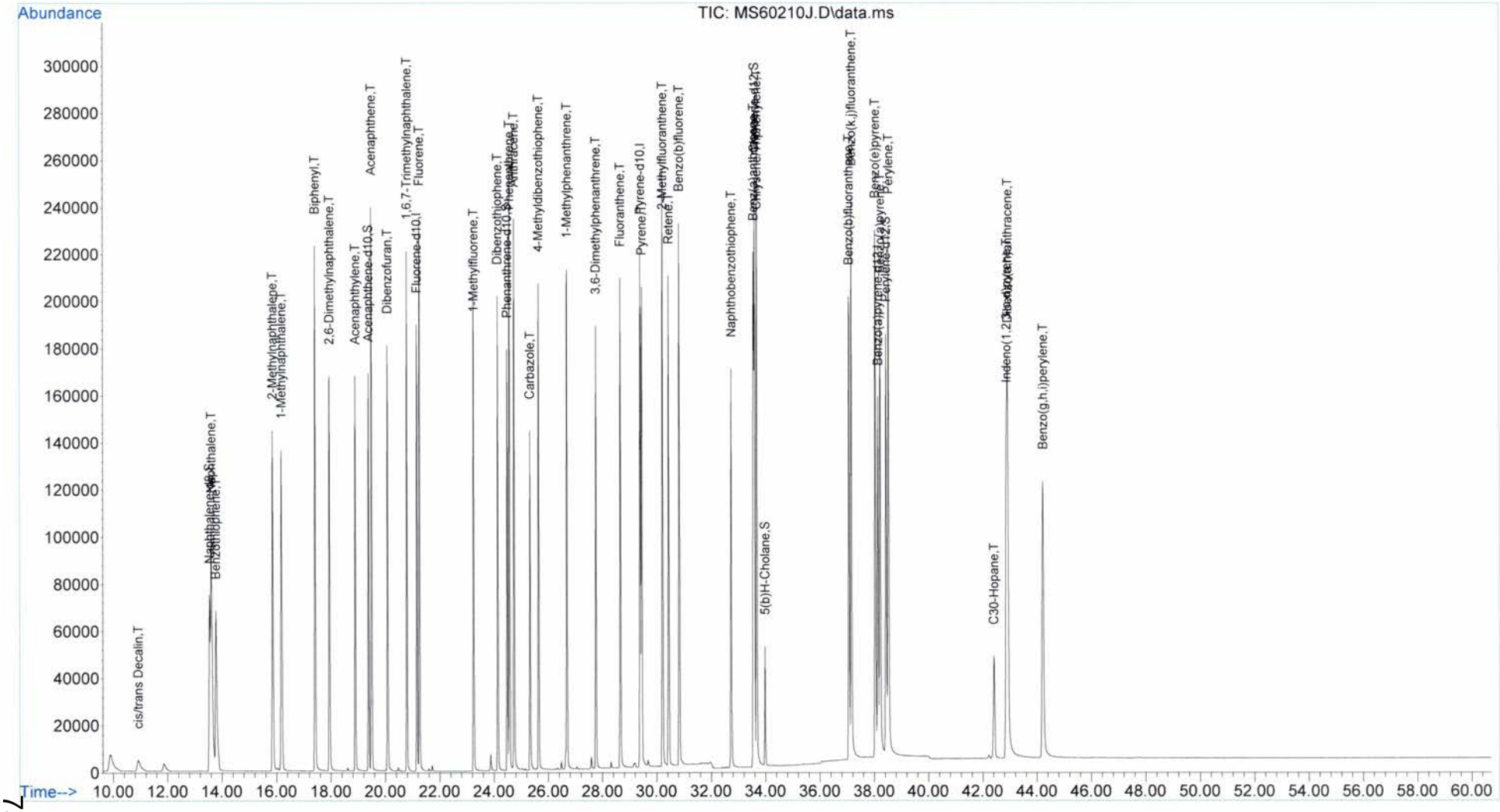
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.688	192	282003	240.00			93
48)	3,6-Dimethylphenanthrene	27.757	206	243308	236.26			93
49)	Retene	30.429	234	130815	233.33		#	54
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53)	Naphthobenzothiophene	32.733	234	374400	236.72			100
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	28.655	202	409454	239.69		#	100
59)	Pyrene	29.450	202	449986	241.79		#	100
60)	2-Methylfluoranthene	30.205	216	265193	234.25		#	100
61)	Benzo(b)fluorene	30.817	216	250706	225.03			100
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	33.549	228	365399	215.02			97
68)	Chrysene/Triphenylene	33.671	228	407317	233.99			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	42.409	191	157034	245.57			100
77)	Benzo(b)fluoranthene	37.060	252	433475m	248.71			
78)	Benzo(k,j)fluoranthene	37.151	252	453482m	247.83			
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.028	252	493575	252.76			98
81)	Benzo(a)pyrene	38.210	252	407371	244.20			98
82)	Indeno(1,2,3-c,d)pyrene	42.874	276	472108	241.29			100
83)	Dibenzo(a,h)anthracene	42.912	278	383427	240.68			89
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	44.217	276	404402	243.82			96
89)	Perylene	38.521	252	475624	248.24		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210J.D
Acq On : 4 Nov 2014 9:57 pm
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 05 07:14:15 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210L.D
Acq On : 5 Nov 2014 4:56 am
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 05 07:16:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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	92	0.00
2	S	Naphthalene-d8	1.492	1.479	0.9	93	0.00
3	T	cis/trans Decalin	0.360	0.370	-2.8	95	0.00
4	un	C1-Decalins	0.360	0.000	100.0#	0#	-12.09#
5	un	C2-Decalins	0.360	0.000	100.0#	0#	-14.05#
6	un	C3-Decalins	0.360	0.000	100.0#	0#	-16.68#
7	un	C4-Decalins	0.360	0.000	100.0#	0#	-18.57#
8	T	Naphthalene	1.761	1.750	0.6	93	0.00
9	T	2-Methylnaphthalene	1.362	1.341	1.5	93	0.00
10	T	1-Methylnaphthalene	1.128	1.114	1.2	93	0.01
11	T	2,6-Dimethylnaphthalene	1.174	1.148	2.2	93	0.00
12	T	1,6,7-Trimethylnaphthalene	1.151	1.110	3.6	92	-0.01
13	un	C2-Naphthalenes	1.761	0.000	100.0#	0#	-17.94#
14	un	C3-Naphthalenes	1.761	0.000	100.0#	0#	-19.76#
15	un	C4-Naphthalenes	1.761	0.000	100.0#	0#	-22.55#
16	T	Benzothiophene	1.418	1.414	0.3	93	0.00
17	un	C1-Benzothiophenes	1.418	0.000	100.0#	0#	-15.86#
18	un	C2-Benzothiophenes	1.418	0.000	100.0#	0#	-18.10#
19	un	C3-Benzothiophenes	1.418	0.000	100.0#	0#	-20.04#
20	un	C4-Benzothiophenes	1.418	0.000	100.0#	0#	-21.89#
21	S	Acenaphthene-d10	0.962	0.941	2.2	93	0.00
22	T	Biphenyl	1.645	1.616	1.8	93	0.00
23	T	Acenaphthylene	1.867	1.788	4.2	92	0.00
24	T	Acenaphthene	1.125	1.097	2.5	92	-0.02
25	T	Dibenzofuran	2.018	1.966	2.6	92	0.00
26	T	Fluorene	1.444	1.398	3.2	92	-0.01
27	T	1-Methylfluorene	0.858	0.817	4.8	90	0.00
28	un	C1-Fluorenes	1.444	0.000	100.0#	0#	-23.25#
29	un	C2-Fluorenes	1.444	0.000	100.0#	0#	-25.04#
30	un	C3-Fluorenes	1.444	0.000	100.0#	0#	-26.77#
31	I	Pyrene-d10	1.000	1.000	0.0	92	0.00
32	S	Phenanthrene-d10	0.912	0.869	4.7	91	-0.01
33	T	Carbazole	1.043	0.985	5.6	88	0.00
34	T	Dibenzothiophene	1.126	1.076	4.4	91	-0.01
35	T	4-Methyldibenzothiophene	0.763	0.726	4.8	91	-0.01
36	un	2/3-Methyldibenzothiophene	0.763	0.000	100.0#	0#	-25.95#
37	un	1-Methyldibenzothiophene	0.763	0.000	100.0#	0#	-26.27#
38	un	C2-Dibenzothiophenes	1.126	0.000	100.0#	0#	-27.04#
39	un	C3-Dibenzothiophenes	1.126	0.000	100.0#	0#	-28.33#
40	un	C4-Dibenzothiophenes	1.126	0.000	100.0#	0#	-30.02#
41	T	Phenanthrene	1.140	1.094	4.0	90	0.00
42	T	Anthracene	1.076	1.013	5.9	91	-0.01
43	un	3-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.31#
44	un	2-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.47#
45	un	2-Methylanthracene	0.891	0.000	100.0#	0#	-26.31#
46	un	4/9-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.47#
47	T	1-Methylphenanthrene	0.891	0.844	5.3	91	-0.01
48	T	3,6-Dimethylphenanthrene	0.781	0.736	5.8	90	0.00
49	T	Retene	0.425	0.402	5.4	91	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210L.D
Acq On : 5 Nov 2014 4:56 am
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 05 07:16:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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)
50	un	C2-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-28.31#
51	un	C3-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-29.55#
52	un	C4-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-31.31#
53	T	Naphthobenzothiophene	1.199	1.134	5.4	91	0.00
54	un	C1-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-34.32#
55	un	C2-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-35.77#
56	un	C3-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-36.93#
57	un	C4-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-37.66#
58	T	Fluoranthene	1.295	1.215	6.2	90	-0.02
59	T	Pyrene	1.411	1.340	5.0	91	0.00
60	T	2-Methylfluoranthene	0.858	0.816	4.9	91	0.00
61	T	Benzo(b)fluorene	0.844	0.787	6.8	91	-0.02
62	un	C1-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-30.84#
63	un	C2-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-32.08#
64	un	C3-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-33.71#
65	un	C4-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-35.00#
66	S	Chrysene-d12	1.129	1.072	5.0	91	-0.02
67	T	Benz(a)anthracene	1.288	1.175	8.8	91	0.00
68	T	Chrysene/Triphenylene	1.319	1.237	6.2	92	-0.02
69	un	C1-Chrysenes	1.319	0.000	100.0#	0#	-35.06#
70	un	C2-Chrysenes	1.319	0.000	100.0#	0#	-36.06#
71	un	C3-Chrysenes	1.319	0.000	100.0#	0#	-38.07#
72	un	C4-Chrysenes	1.319	0.000	100.0#	0#	-39.09#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	90	0.00
74	un	C29-Hopane	0.531	0.000	100.0#	0#	-40.57#
75	un	18a-Oleanane	0.531	0.000	100.0#	0#	-41.43#
76	T	C30-Hopane	0.531	0.514	3.2	88	-0.02
77	T	Benzo(b)fluoranthene	1.448	1.405	3.0	90	-0.02
78	T	Benzo(k,j)fluoranthene	1.520	1.470	3.3	91	-0.02
79	un	Benzo(a)fluoranthene	1.520	0.000	100.0#	0#	-37.08#
80	T	Benzo(e)pyrene	1.622	1.560	3.8	90	-0.04
81	T	Benzo(a)pyrene	1.386	1.322	4.6	90	-0.02
82	T	Indeno(1,2,3-c,d)pyrene	1.625	1.508	7.2	87	-0.02
83	T	Dibenzo(a,h)anthracene	1.323	1.212	8.4	87	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-47.41#
85	un	C2-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-49.05#
86	un	C3-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-48.44#
87	T	Benzo(g,h,i)perylene	1.378	1.289	6.5	87	-0.04
88	S	Perylene-d12	1.199	1.153	3.8	90	-0.02
89	T	Perylene	1.592	1.523	4.3	90	-0.02
90	S	5(b)H-Cholane	0.290	0.285	1.7	91	0.00
91	un	C20-TAS	0.290	0.000	100.0#	0#	-33.08#
92	un	C21-TAS	0.290	0.000	100.0#	0#	-34.00#
93	un	C26(20S)-TAS	0.290	0.000	100.0#	0#	-38.45#
94	un	C26(20R)/C27(20S)-TAS	0.290	0.000	100.0#	0#	-39.27#
95	un	C28(20S)-TAS	0.290	0.000	100.0#	0#	-39.93#
96	un	C27(20R)-TAS	0.290	0.000	100.0#	0#	-40.37#
97	un	C28(20R)-TAS	0.290	0.000	100.0#	0#	-41.23#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210L.D
Acq On : 5 Nov 2014 4:56 am
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 05 07:16:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210L.D
Acq On : 5 Nov 2014 4:56 am
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 05 07:16:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorene-d10	21.152	176	195935	251.05	0.00
31) Pyrene-d10	29.389	212	368569	250.63	0.00
73) Benzo(a)pyrene-d12	38.137	264	349207	250.32	0.00
System Monitoring Compounds					
2) Naphthalene-d8	13.539	136	288659	247.89	0.00
21) Acenaphthene-d10	19.383	164	183689	244.75	0.00
32) Phenanthrene-d10	24.479	188	319592	238.26	-0.01
66) Chrysene-d12	33.589	240	394245	237.37	-0.02
88) Perylene-d12	38.429	264	402127	240.50	-0.02
90) 5(b)H-Cholane	33.976	217	99360	245.73	0.00
Target Compounds					Qvalue
3) cis/trans Decalin	10.917	138	71487m	254.45	
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	13.604	128	336677	244.93	98
9) 2-Methylnaphthalene	15.851	142	259747	244.37	94
10) 1-Methylnaphthalene	16.180	142	216248	245.54	96
11) 2,6-Dimethylnaphthalene	17.942	156	223863	244.39	83
12) 1,6,7-Trimethylnaphtha...	20.785	170	217093	241.76	85
13) C2-Naphthalenes	0.000		0	N.D. d	
14) C3-Naphthalenes	0.000		0	N.D.	
15) C4-Naphthalenes	0.000		0	N.D.	
16) Benzothiophene	13.772	134	275069	248.55	100
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	17.411	154	314432	244.91	93
23) Acenaphthylene	18.893	152	348487	239.17	97
24) Acenaphthene	19.481	154	215367	245.37	97
25) Dibenzofuran	20.074	168	382817	243.06	100
26) Fluorene	21.247	166	269009	238.72	99
27) 1-Methylfluorene	23.249	180	160594	239.69	80
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	25.318	167	360938	235.33	100
34) Dibenzothiophene	24.130	184	391306	236.41	99
35) 4-Methyldibenzothiophene	25.627	198	268684	239.34	100
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	24.563	178	401015	239.23	99
42) Anthracene	24.731	178	372807	235.64	97
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210L.D
Acq On : 5 Nov 2014 4:56 am
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 05 07:16:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

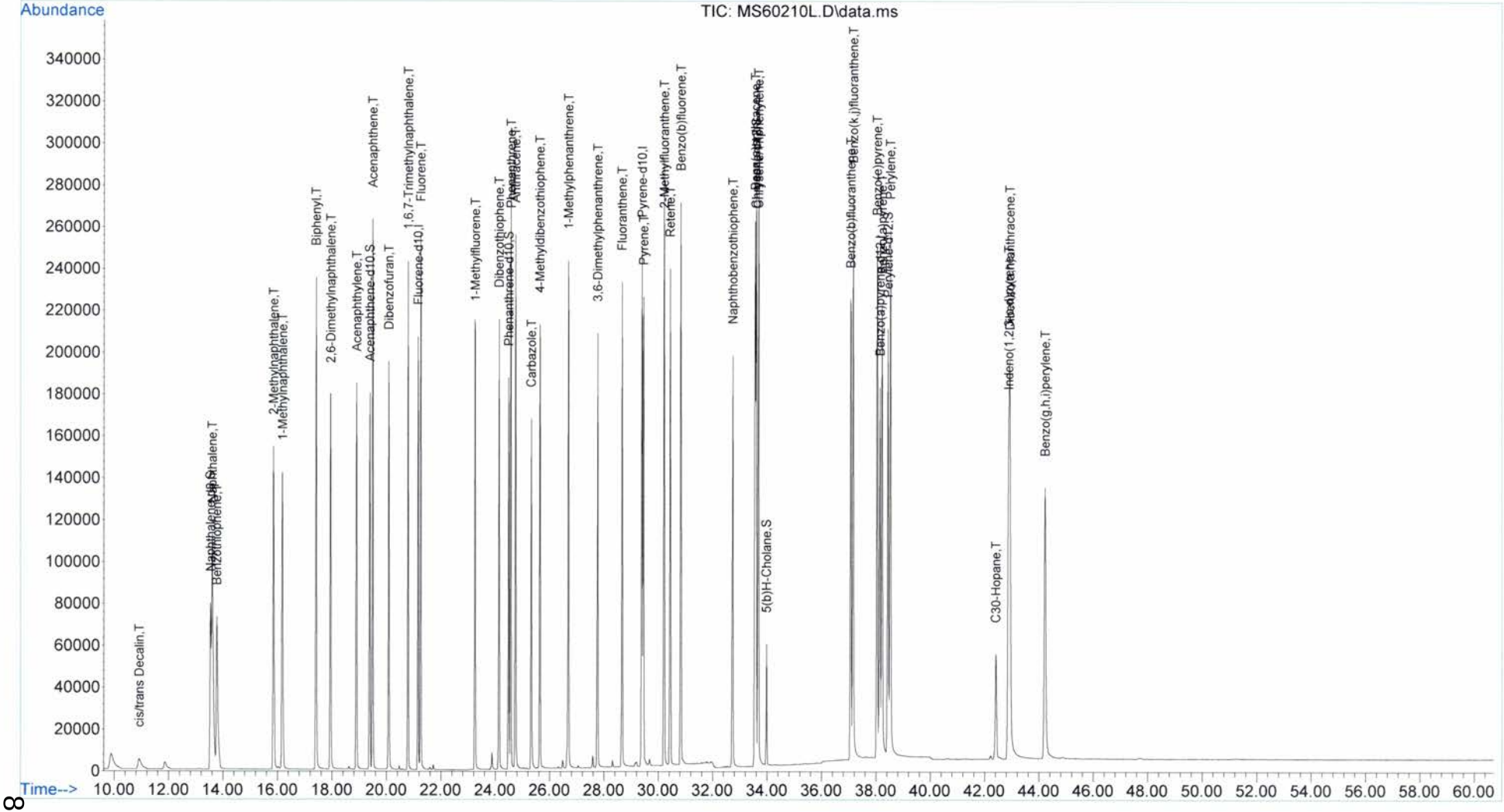
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d		
47)	1-Methylphenanthrene	26.676	192	308291	235.39			99
48)	3,6-Dimethylphenanthrene	27.757	206	271200	236.27			92
49)	Retene	30.429	234	147791	236.50		#	54
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53)	Naphthobenzothiophene	32.732	234	419328	237.86			100
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	28.655	202	449886	236.28		#	100
59)	Pyrene	29.450	202	493082	237.70		#	100
60)	2-Methylfluoranthene	30.205	216	300484	238.13		#	100
61)	Benzo(b)fluorene	30.817	216	290535	233.96			99
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	33.548	228	427656	225.78			97
68)	Chrysene/Triphenylene	33.670	228	450725	232.30			98
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	42.409	191	179186	241.79			100
77)	Benzo(b)fluoranthene	37.060	252	488101m	241.64			
78)	Benzo(k,j)fluoranthene	37.151	252	513831m	242.30			
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.028	252	545659	241.11			98
81)	Benzo(a)pyrene	38.210	252	460595	238.25			98
82)	Indeno(1,2,3-c,d)pyrene	42.874	276	525750	231.85			100
83)	Dibenzo(a,h)anthracene	42.913	278	419234	227.07			89
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	44.218	276	443211	230.58			96
89)	Perylene	38.521	252	531270	239.26		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210L.D
Acq On : 5 Nov 2014 4:56 am
Operator : YM
Sample : PAH-WKCCV-250-042
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 05 07:16:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



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

Data File Name MS60210H.D
Data File Path C:\GCMS6\MS60210\
Operator YM
Date Acquired 11/4/2014 19:37
Acq. Method File PAH2014A.M
Sample Name PAH-WKSUIS-250-007
Misc Info 0
Instrument Name GCMS6
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

MS60210H.D
PAH-WKSUIS-250-007
11/4/2014 19:37
PAH2014A.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	13.54	260047	245.69	98.22
21)	Acenaphthene-d10	19.38	160794	235.70	94.22
32)	Phenanthrene-d10	24.48	277976	232.23	92.82
66)	Chrysene-d12	33.59	312136	210.60	84.23
88)	Perylene-d12	38.43	328474	237.94	95.16
90)	5(b)H-Cholane	33.98	86216	258.26	103.30
	Internal Standards				
1)	Fluorene-d10	21.15	178100	251.05	
31)	Pyrene-d10	29.39	328897	250.63	
73)	Benzo(a)pyrene-d12	38.14	288315	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : MS60210H.D
Acq On : 4 Nov 2014 7:37 pm
Operator : YM
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 05 07:08:10 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.152	176	178100	251.05		0.00
31) Pyrene-d10	29.388	212	328897	250.63		0.00
73) Benzo(a)pyrene-d12	38.137	264	288315	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.539	136	260047	245.69		0.00
21) Acenaphthene-d10	19.383	164	160794	235.70		0.00
32) Phenanthrene-d10	24.481	188	277976	232.23		-0.01
66) Chrysene-d12	33.590	240	312136m	210.60		-0.02
88) Perylene-d12	38.429	264	328474	237.94		-0.02
90) 5(b)H-Cholane	33.978	217	86216	258.26		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	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : MS60210H.D
Acq On : 4 Nov 2014 7:37 pm
Operator : YM
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 05 07:08:10 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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\MS60210-ENV3351\
Data File : MS60210H.D
Acq On : 4 Nov 2014 7:37 pm
Operator : YM
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 05 07:08:10 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

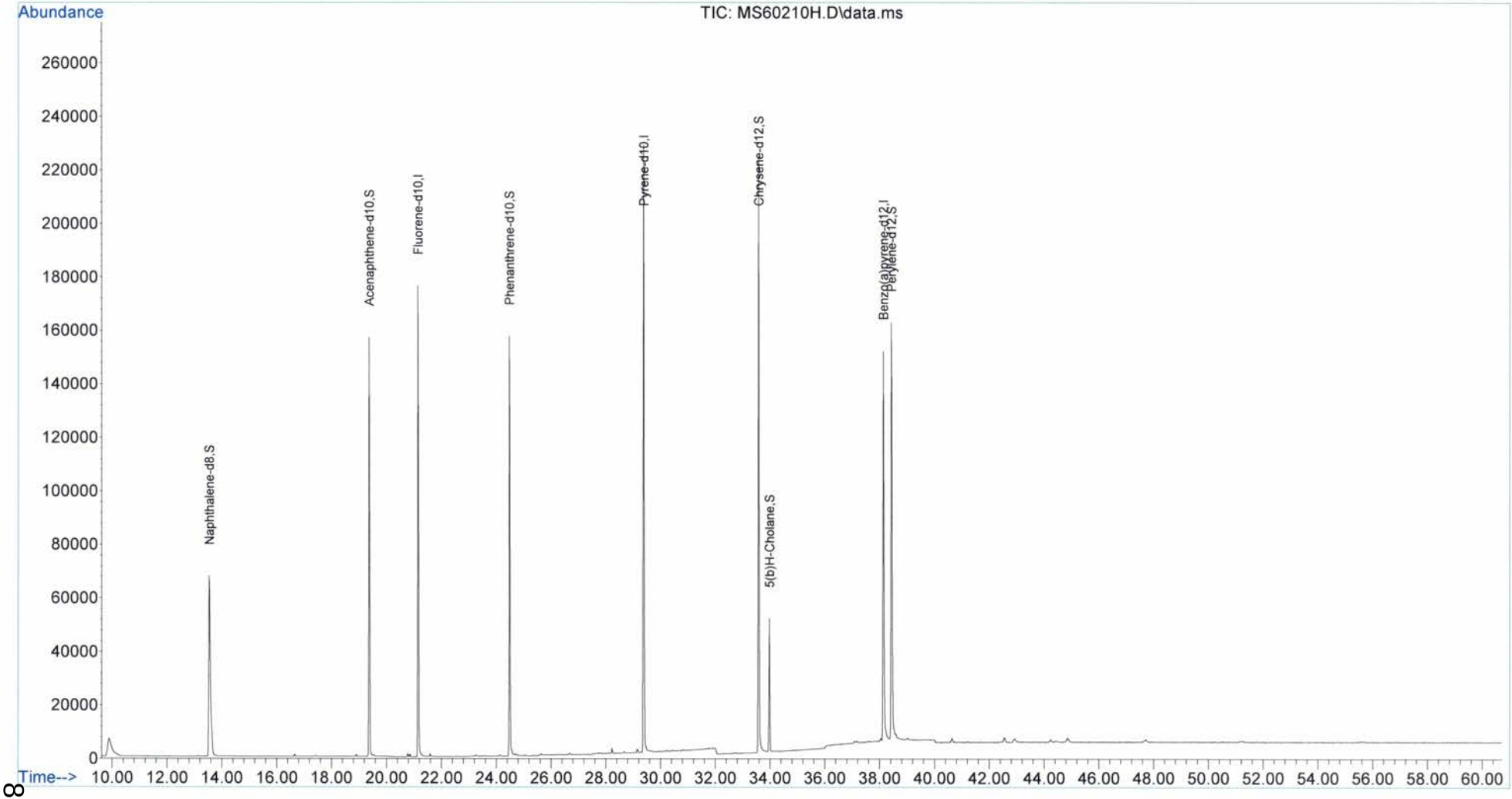
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : MS60210H.D
Acq On : 4 Nov 2014 7:37 pm
Operator : YM
Sample : PAH-WKSUIS-250-007
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 05 07:08:10 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



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

Data File Name MS60210K.D
Data File Path C:\msdchem\2\data\MS60210-ENV3351\
Operator YM
Date Acquired 11/4/2014 23:07
Acq. Method File PAH2014A.M
Sample Name PAH-WKSRM2779-4.0-005
Misc Info 0
Instrument Name GCMS6
Vial Number 11
Sample Multiplier 0.24044
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

MS60210K.D
AH-WKSRM2779-4.0-005
11/4/2014 23:07
PAH2014A.M
4.159041757

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.92	821452	695.0447	765.5828
4)	C1-Decalins	12.07	1270640	1075.1058	1184.2153
5)	C2-Decalins	14.43	1314910	1112.5688	1225.4802
6)	C3-Decalins	16.39	1207780	1021.9253	1125.6376
7)	C4-Decalins	18.39	922452	780.5019	859.7128
8)	Naphthalene	13.60	4203800	726.9992	800.7803
9)+10)	C1-Naphthalenes	16.02	9648170	1668.5408	1837.8763
13)	C2-Naphthalenes	18.21	12238300	2116.4659	2331.2600
14)	C3-Naphthalenes	20.22	9229020	1596.0527	1758.0316
15)	C4-Naphthalenes	22.54	4782670	827.1088	911.0497
16)	Benzothiophene	13.81	41369	8.8861	9.7879
17)	C1-Benzothiophenes	15.72	188510	40.4920	44.6014
18)	C2-Benzothiophenes	18.08	103766	22.2890	24.5511
19)	C3-Benzothiophenes	20.04	158293	34.0016	37.4523
20)	C4-Benzothiophenes	21.81	146217	31.4075	34.5949
22)	Biphenyl	17.41	890486	164.8817	181.6151
23)	Acenaphthylene	18.89	43504	7.0975	7.8178
24)	Acenaphthene	19.50	29925	8.1047	8.9273
25)	Dibenzofuran	20.07	180075	27.1789	29.9372
26)	Fluorene	21.26	580496	122.4549	134.8825
28)	C1-Fluorenes	23.25	1342880	283.2768	312.0258
29)	C2-Fluorenes	25.08	1533660	323.5216	356.3549
30)	C3-Fluorenes	26.63	1329010	280.3530	308.8053
33)	Carbazole	25.33	23221	3.4867	3.8405
42)	Anthracene	24.75	17325	2.5219	2.7778
41)	Phenanthrene	24.56	1779360	244.4602	269.2697
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.46	4315025	592.8265	652.9907
50)	C2-Phenanthrenes/Anthracenes	28.12	4937220	678.3077	747.1472
51)	C3-Phenanthrenes/Anthracenes	29.69	2974210	408.6158	450.0850
52)	C4-Phenanthrenes/Anthracenes	31.53	1817790	249.7402	275.0856
34)	Dibenzothiophene	24.13	312587	43.4913	47.9051
35)+36)+37)	C1-Dibenzothiophenes	25.95	874405	121.6589	134.0057
38)	C2-Dibenzothiophenes	27.05	1364110	189.7937	209.0553
39)	C3-Dibenzothiophenes	28.55	807844	112.3982	123.8052
40)	C4-Dibenzothiophenes	29.55	438899	61.0657	67.2631
58)	Fluoranthene	28.67	29138	3.5242	3.8819
59)	Pyrene	29.45	99017	10.9927	12.1083
62)	C1-Fluoranthenes/Pyrenes	30.61	610923	73.8906	81.3895
63)	C2-Fluoranthenes/Pyrenes	32.10	1039060	125.6729	138.4271
64)	C3-Fluoranthenes/Pyrenes	33.79	1233160	149.1490	164.2857
65)	C4-Fluoranthenes/Pyrenes	34.93	822006	99.4207	109.5107
53)	Naphthobenzothiophene	32.73	217477	28.4099	31.2932
54)	C1-Naphthobenzothiophenes	33.89	481547	62.9063	69.2905
55)	C2-Naphthobenzothiophenes	35.59	669602	87.4726	96.3499
56)	C3-Naphthobenzothiophenes	36.95	461970	60.3490	66.4736
57)	C4-Naphthobenzothiophenes	37.94	143201	18.7069	20.6054
67)	Benz(a)anthracene	33.55	53581	6.5145	7.1756
68)	Chrysene/Triphenylene	33.63	388948	46.1652	50.8504
69)	C1-Chrysenes	34.89	963928	114.4110	126.0222
70)	C2-Chrysenes	36.08	1047920	124.3806	137.0036
71)	C3-Chrysenes	37.75	892918	105.9826	116.7385
72)	C4-Chrysenes	39.14	661690	78.5376	86.5081
77)	Benzo(b)fluoranthene	37.08	49010	5.0832	5.5991
78)	Benzo(k,j)fluoranthene	37.10	9377	0.9264	1.0204
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.05	96841	8.9647	9.8745
81)	Benzo(a)pyrene	38.23	14130	1.5312	1.6866
89)	Perylene	38.54	4771	0.4501	0.4958
82)	Indeno(1,2,3-c,d)pyrene	42.90	4234	0.3912	0.4309
83)	Dibenzo(a,h)anthracene	42.93	4372	0.4961	0.5465
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	44.23	13840	1.5084	1.6615

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.85	5925770	1325.2572	1459.7538
10)	1-Methylnaphthalene	16.18	3722400	1004.7362	1106.7041
11)	2,6-Dimethylnaphthalene	17.94	1825130	473.6452	521.7141
12)	1,6,7-Trimethylnaphthalene	20.80	731117	193.5448	213.1871
27)	1-Methylfluorene	23.25	699061	248.0283	273.2000
35)	4-Methyldibenzothiophene	25.64	494154	101.3705	111.6583
36)	2/3-Methyldibenzothiophene	25.93	228528	46.8800	51.6378
37)	1-Methyldibenzothiophene	26.27	151723	31.1245	34.2832
43)	3-Methylphenanthrene	26.23	984421	173.1007	190.6682
44)	2-Methylphenanthrene	26.31	1091300	191.8949	211.3698
45)	2-Methylanthracene	26.48	69508	12.2223	13.4627
46)	4/9-Methylphenanthrene	26.59	1312300	230.7556	254.1743
47)	1-Methylphenanthrene	26.69	857496	150.7821	166.0845
48)	3,6-Dimethylphenanthrene	27.76	249132	49.9831	55.0558
49)	Retene	30.45	18111	6.6743	7.3517
60)	2-Methylfluoranthene	30.22	36066	6.5821	7.2501
61)	Benzo(b)fluorene	30.84	82637	15.3252	16.8805
74)	C29-Hopane	40.43	80404	22.7297	25.0365
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.72	176097	49.7814	54.8336
91)	C20-TAS	33.12	87288	45.2268	49.8167
92)	C21-TAS	34.20	95849	49.6624	54.7025
93)	C26(20S)-TAS	38.27	50776	26.3087	28.9787
94)	C26(20R)/C27(20S)-TAS	39.18	163088	84.5010	93.0767
95)	C28(20S)-TAS	39.93	140003	72.5400	79.9019
96)	C27(20R)-TAS	40.38	95811	49.6427	54.6808
97)	C28(20R)-TAS	41.48	103032	53.3842	58.8020
	Surrogate Standards				
2)	Naphthalene-d8	13.54	278735	56.90	94.62
21)	Acenaphthene-d10	19.38	175797	55.68	92.57
32)	Phenanthrene-d10	24.49	318102	54.61	90.79
66)	Chrysene-d12	33.59	395847	54.89	91.30
88)	Perylene-d12	38.45	435121	54.52	90.69
90)	5(b)H-Cholane	33.98	122691	63.57	105.76
	Internal Standards				
1)	Fluorene-d10	21.16	198179	60.36	
31)	Pyrene-d10	29.39	384806	60.26	
73)	Benzo(a)pyrene-d12	38.14	400778	60.19	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : MS60210K.D
Acq On : 4 Nov 2014 11:07 pm
Operator : YM
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.24044

Quant Time: Nov 05 07:52:26 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.163	176	198179	251.05		0.01
31) Pyrene-d10	29.388	212	384806m	250.63		0.00
73) Benzo(a)pyrene-d12	38.138	264	400778	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.538	136	278735m	56.90		0.00
21) Acenaphthene-d10	19.384	164	175797m	55.68		0.00
32) Phenanthrene-d10	24.494	188	318102m	54.61		0.00
66) Chrysene-d12	33.589	240	395847	54.89		-0.02
88) Perylene-d12	38.448	264	435121	54.52		0.00
90) 5(b)H-Cholane	33.976	217	122691m	63.57		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.916	138	821452m	695.04		
4) C1-Decalins	12.066	152	1270636m	1075.11		
5) C2-Decalins	14.430	166	1314911m	1112.57		
6) C3-Decalins	16.391	180	1207783m	1021.93		
7) C4-Decalins	18.391	194	922452m	780.50		
8) Naphthalene	13.603	128	4203797	727.00		99
9) 2-Methylnaphthalene	15.850	142	5925767	1325.26		95
10) 1-Methylnaphthalene	16.181	142	3722397	1004.74		97
11) 2,6-Dimethylnaphthalene	17.943	156	1825127m	473.64		
12) 1,6,7-Trimethylnaphtha...	20.796	170	731117m	193.54		
13) C2-Naphthalenes	18.209	156	12238255m	2116.46		
14) C3-Naphthalenes	20.215	170	9229017m	1596.05		
15) C4-Naphthalenes	22.537	184	4782673m	827.11		
16) Benzothiophene	13.809	134	41369	8.89		100
17) C1-Benzothiophenes	15.721	148	188510m	40.49		
18) C2-Benzothiophenes	18.083	162	103766m	22.29		
19) C3-Benzothiophenes	20.038	176	158293m	34.00		
20) C4-Benzothiophenes	21.815	190	146217m	31.41		
22) Biphenyl	17.412	154	890486	164.88		94
23) Acenaphthylene	18.894	152	43504m	7.10		
24) Acenaphthene	19.496	154	29925m	8.10		
25) Dibenzofuran	20.073	168	180075m	27.18		
26) Fluorene	21.258	166	580496m	122.45		
27) 1-Methylfluorene	23.250	180	699061	248.03		96
28) C1-Fluorenes	23.250	180	1342875m	283.28		
29) C2-Fluorenes	25.081	194	1533655m	323.52		
30) C3-Fluorenes	26.634	208	1329005m	280.35		
33) Carbazole	25.333	167	23221	3.49		100
34) Dibenzothiophene	24.131	184	312587m	43.49		
35) 4-Methyldibenzothiophene	25.641	198	494154	101.37		100
36) 2/3-Methyldibenzothiop...	25.935	198	228528	46.88		100
37) 1-Methyldibenzothiophene	26.270	198	151723	31.12		100
38) C2-Dibenzothiophenes	27.053	212	1364110m	189.79		
39) C3-Dibenzothiophenes	28.552	226	807844m	112.40		
40) C4-Dibenzothiophenes	29.552	240	438899m	61.07		
41) Phenanthrene	24.564	178	1779363	244.46		99
42) Anthracene	24.746	178	17325	2.52		97
43) 3-Methylphenanthrene	26.228	192	984421m	173.10		

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : MS60210K.D
Acq On : 4 Nov 2014 11:07 pm
Operator : YM
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.24044

Quant Time: Nov 05 07:52:26 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	26.312	192	1091304m	191.90		
45) 2-Methylanthracene	26.480	192	69508m	12.22		
46) 4/9-Methylphenanthrene	26.592	192	1312303m	230.76		
47) 1-Methylphenanthrene	26.690	192	857496m	150.78		
48) 3,6-Dimethylphenanthrene	27.757	206	249132m	49.98		
49) Retene	30.449	234	18111m	6.67		
50) C2-Phenanthrenes/Anthr...	28.124	206	4937220m	678.31		
51) C3-Phenanthrenes/Anthr...	29.694	220	2974206m	408.62		
52) C4-Phenanthrenes/Anthr...	31.530	234	1817792m	249.74		
53) Naphthobenzothiophene	32.733	234	217477m	28.41		
54) C1-Naphthobenzothiophenes	33.895	248	481547m	62.91		
55) C2-Naphthobenzothiophenes	35.587	262	669602m	87.47		
56) C3-Naphthobenzothiophenes	36.951	276	461970m	60.35		
57) C4-Naphthobenzothiophenes	37.937	290	143201m	18.71		
58) Fluoranthene	28.675	202	29138m	3.52		
59) Pyrene	29.450	202	99017m	10.99		
60) 2-Methylfluoranthene	30.225	216	36066m	6.58		
61) Benzo(b)fluorene	30.836	216	82637m	15.33		
62) C1-Fluoranthenes/Pyrenes	30.612	216	610923m	73.89		
63) C2-Fluoranthenes/Pyrenes	32.100	230	1039057m	125.67		
64) C3-Fluoranthenes/Pyrenes	33.793	244	1233156m	149.15		
65) C4-Fluoranthenes/Pyrenes	34.935	258	822006m	99.42		
67) Benz(a)anthracene	33.548	228	53581m	6.51		
68) Chrysene/Triphenylene	33.630	228	388948m	46.17		
69) C1-Chrysenes	34.894	242	963928m	114.41		
70) C2-Chrysenes	36.075	256	1047924m	124.38		
71) C3-Chrysenes	37.755	270	892918m	105.98		
72) C4-Chrysenes	39.142	284	661690m	78.54		
74) C29-Hopane	40.432	191	80404m	22.73		
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	41.724	191	176097m	49.78		
77) Benzo(b)fluoranthene	37.079	252	49010m	5.08		
78) Benzo(k,j)fluoranthene	37.097	252	9377m	0.93		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.047	252	96841	8.96		98
81) Benzo(a)pyrene	38.229	252	14130m	1.53		
82) Indeno(1,2,3-c,d)pyrene	42.900	276	4234m	0.39		
83) Dibenzo(a,h)anthracene	42.925	278	4372m	0.50		
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	44.230	276	13840m	1.51		
89) Perylene	38.540	252	4771m	0.45		
91) C20-TAS	33.120	231	87288m	45.23		
92) C21-TAS	34.201	231	95849m	49.66		
93) C26(20S)-TAS	38.266	231	50776m	26.31		
94) C26(20R)/C27(20S)-TAS	39.179	231	163088	84.50		100
95) C28(20S)-TAS	39.927	231	140003m	72.54		
96) C27(20R)-TAS	40.380	231	95811	49.64		100
97) C28(20R)-TAS	41.478	231	103032m	53.38		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : MS60210K.D
Acq On : 4 Nov 2014 11:07 pm
Operator : YM
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.24044

Quant Time: Nov 05 07:52:26 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

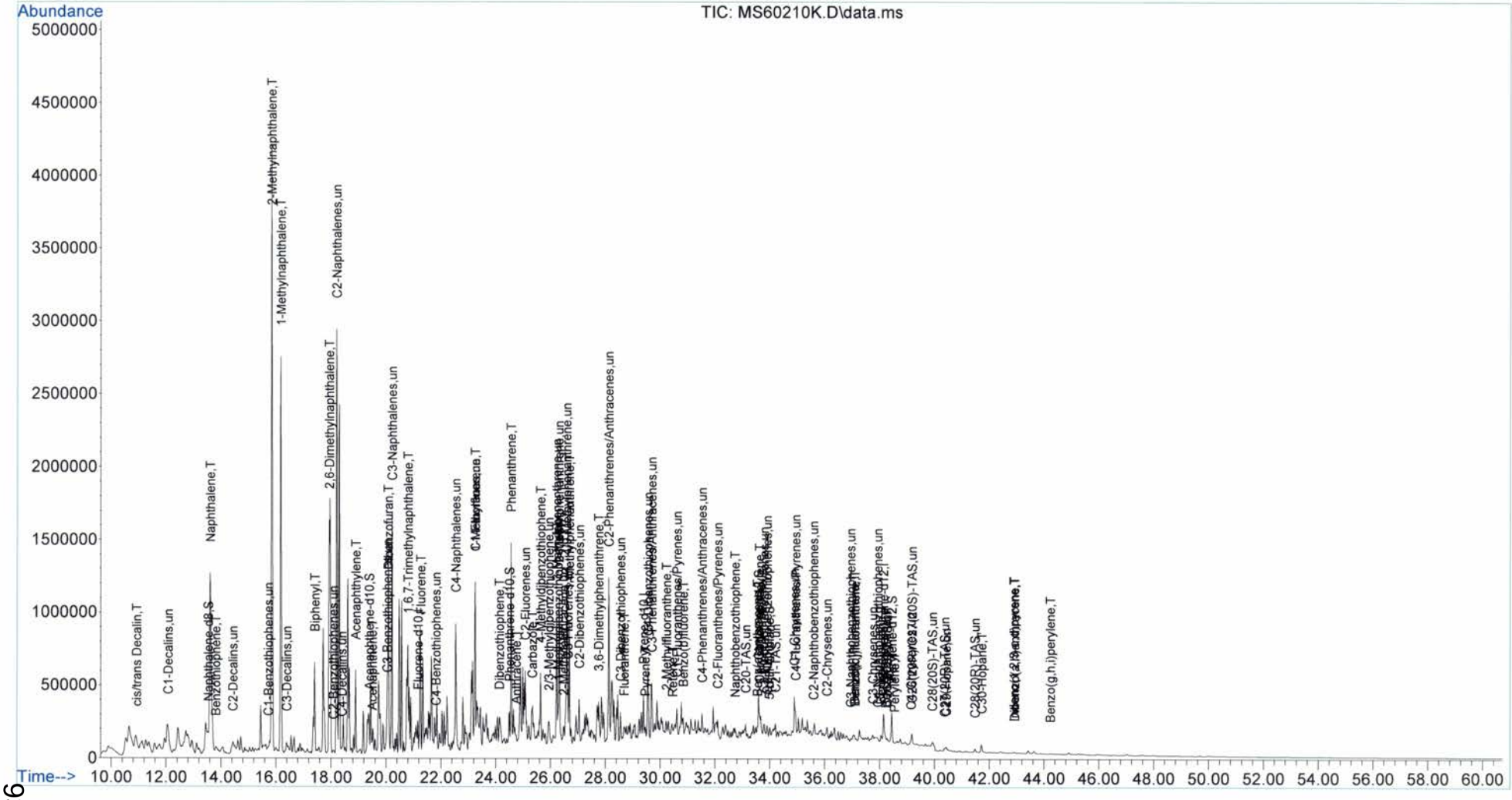
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : MS60210K.D
Acq On : 4 Nov 2014 11:07 pm
Operator : YM
Sample : PAH-WKSRM2779-4.0-005
Misc :
ALS Vial : 11 Sample Multiplier: 0.24044

Quant Time: Nov 05 07:52:26 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



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

Data File Name	ENV3351A.D
Data File Path	C:\msdchem\2\data\MS60210-ENV3351\
Operator	YM
Date Acquired	11/5/2014 0:17
Acq. Method File	PAH2014A.M
Sample Name	Method Blank
Misc Info	0
Instrument Name	GCMS6
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

ENV3351A.D
Method Blank
11/5/2014 0:17
PAH2014A.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	24.56	803	0.4832	0.6051
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	13.54	231578	206.80	82.68
21)	Acenaphthene-d10	19.38	148768	206.12	82.40
32)	Phenanthrene-d10	24.48	265672	199.79	79.86
66)	Chrysene-d12	33.59	326876	198.53	79.40
88)	Perylene-d12	38.43	356795	210.21	84.07
90)	5(b)H-Cholane	33.98	90932	221.54	88.62
	Internal Standards				
1)	Fluorene-d10	21.15	188424	251.05	
31)	Pyrene-d10	29.39	365372	250.63	
73)	Benzo(a)pyrene-d12	38.14	354483	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351A.D
Acq On : 5 Nov 2014 12:17 am
Operator : YM
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 05 08:03:22 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.152	176	188424	251.05		0.00
31) Pyrene-d10	29.388	212	365372	250.63		0.00
73) Benzo(a)pyrene-d12	38.137	264	354483	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.539	136	231578	206.80		0.00
21) Acenaphthene-d10	19.383	164	148768	206.12		0.00
32) Phenanthrene-d10	24.481	188	265672	199.79		-0.01
66) Chrysene-d12	33.589	240	326876	198.53		-0.02
88) Perylene-d12	38.429	264	356795	210.21		-0.02
90) 5(b)H-Cholane	33.977	217	90932	221.54		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	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	24.564	178	803m	0.48		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351A.D
Acq On : 5 Nov 2014 12:17 am
Operator : YM
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 05 08:03:22 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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\MS60210-ENV3351\
Data File : ENV3351A.D
Acq On : 5 Nov 2014 12:17 am
Operator : YM
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 05 08:03:22 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

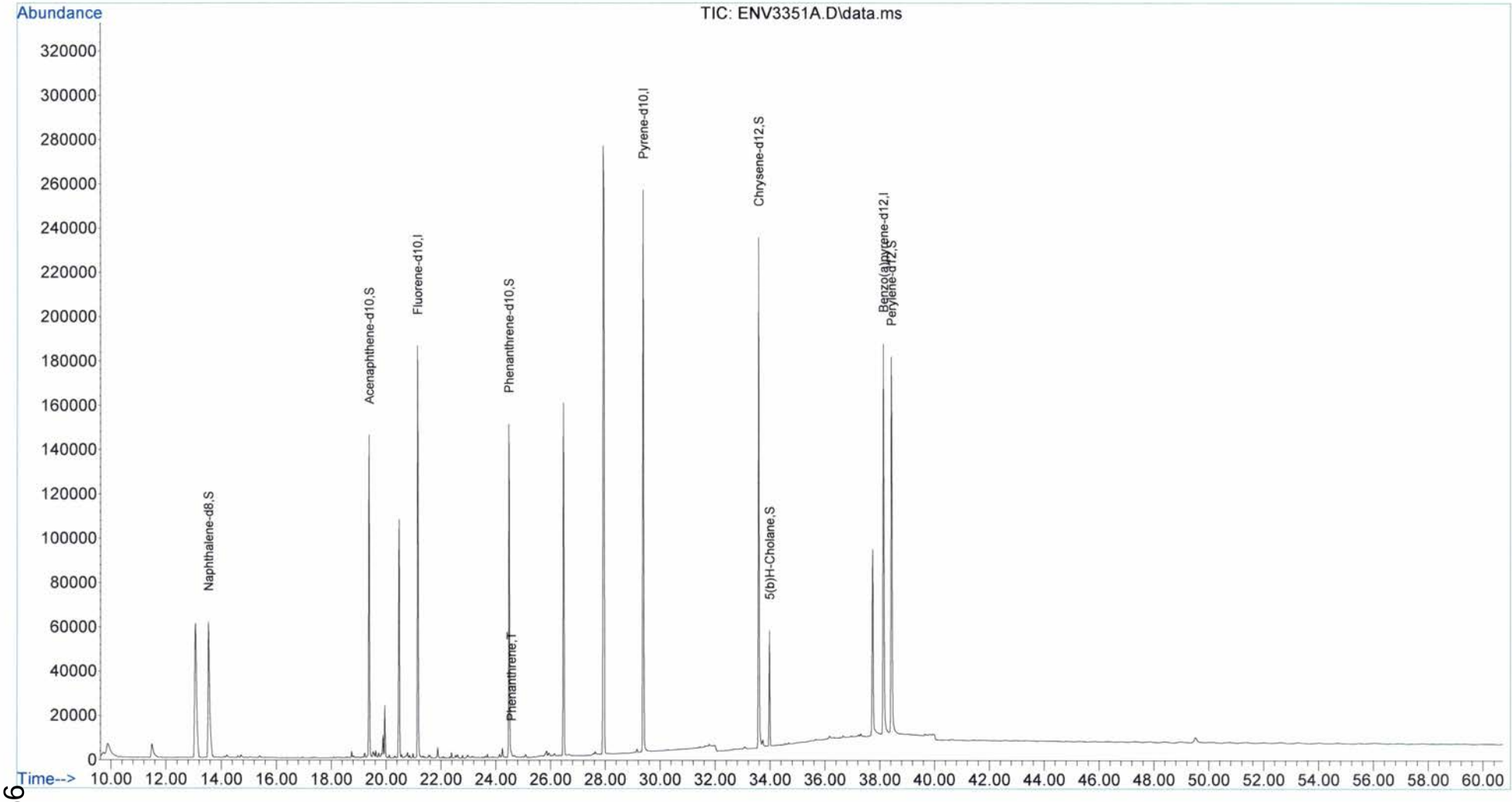
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351A.D
Acq On : 5 Nov 2014 12:17 am
Operator : YM
Sample : Method Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 05 08:03:22 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



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

Data File Name	ENV3351B.D
Data File Path	C:\msdchem\2\data\MS60210-ENV3351\
Operator	YM
Date Acquired	11/5/2014 1:27
Acq. Method File	PAH2014A.M
Sample Name	Blank Spike
Misc Info	0
Instrument Name	GCMS6
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

ENV3351B.D
Blank Spike
11/5/2014 1:27
PAH2014A.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.92	20369	76.9665	91.3690
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	13.60	99981	77.2166	91.6659
9)+10)	C1-Naphthalenes	16.02	141489	109.2738	129.7218
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	13.77	80341	77.0682	91.4897
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	17.41	89064	73.6460	87.4271
23)	Acenaphthylene	18.89	102999	75.0425	89.0849
24)	Acenaphthene	19.48	64545	78.0672	92.6756
25)	Dibenzofuran	20.07	116999	78.8611	93.6181
26)	Fluorene	21.26	81183	76.4793	90.7906
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	25.32	98625	67.2258	79.8055
42)	Anthracene	24.75	112601	74.4077	88.3313
41)	Phenanthrene	24.56	123134	76.7969	91.1676
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.34	100607	62.7471	74.4888
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	24.13	157212	99.2975	117.8787
35)+36)+37)	C1-Dibenzothiophenes	8.55	89205	56.3432	66.8865
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	28.66	144730	79.4660	94.3362
59)	Pyrene	29.45	155028	78.1315	92.7520
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	32.73	134418	79.7138	94.6304
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	33.55	141027	77.8381	92.4037
68)	Chrysene/Triphenylene	33.67	142808	76.9478	91.3468
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	37.08	155366	76.3207	90.6023
78)	Benzo(k,j)fluoranthene	37.15	166180	77.7562	92.3064
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.05	180559	79.1645	93.9783
81)	Benzo(a)pyrene	38.23	146536	75.2089	89.2825
89)	Perylene	38.52	172036	76.8768	91.2625
82)	Indeno(1,2,3-c,d)pyrene	42.87	176659	77.3022	91.7675
83)	Dibenzo(a,h)anthracene	42.93	142141	76.3918	90.6867
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	44.22	143747	74.2033	88.0887

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.85	78367	78.2691	92.9153
10)	1-Methylnaphthalene	16.18	63122	76.0873	90.3252
11)	2,6-Dimethylnaphthalene	17.94	65710	76.1540	90.4044
12)	1,6,7-Trimethylnaphthalene	20.78	66647	78.7910	93.5349
27)	1-Methylfluorene	23.25	51886	82.2125	97.5966
35)	4-Methyldibenzothiophene	25.64	89205	83.0728	98.6179
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	26.69	100607	80.3095	95.3375
48)	3,6-Dimethylphenanthrene	27.78	87575	79.7619	94.6875
49)	Retene	30.45	47632	79.6868	94.5983
60)	2-Methylfluoranthene	30.21	96451	79.9089	94.8620
61)	Benzo(b)fluorene	30.82	100791	84.8541	100.7325
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.41	63466	84.9748	100.8758
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	13.54	227599	207.50	82.96
21)	Acenaphthene-d10	19.38	148612	210.21	84.03
32)	Phenanthrene-d10	24.48	270409	210.76	84.24
66)	Chrysene-d12	33.59	334742	210.71	84.27
88)	Perylene-d12	38.43	372100	220.82	88.32
90)	5(b)H-Cholane	33.98	89179	218.85	87.54
	Internal Standards				
1)	Fluorene-d10	21.15	184565	251.05	
31)	Pyrene-d10	29.39	352545	250.63	
73)	Benzo(a)pyrene-d12	38.14	351936	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351B.D
Acq On : 5 Nov 2014 1:27 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 05 08:07:44 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.152	176	184565	251.05		0.00
31) Pyrene-d10	29.389	212	352545	250.63		0.00
73) Benzo(a)pyrene-d12	38.137	264	351936	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.539	136	227599	207.50		0.00
21) Acenaphthene-d10	19.383	164	148612	210.21		0.00
32) Phenanthrene-d10	24.480	188	270409	210.76		-0.01
66) Chrysene-d12	33.589	240	334742	210.70		-0.02
88) Perylene-d12	38.429	264	372100	220.82		-0.02
90) 5(b)H-Cholane	33.977	217	89179	218.84		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.916	138	20369m	76.97		
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	13.603	128	99981	77.22		98
9) 2-Methylnaphthalene	15.851	142	78367	78.27		95
10) 1-Methylnaphthalene	16.181	142	63122	76.09		98
11) 2,6-Dimethylnaphthalene	17.943	156	65710	76.15		86
12) 1,6,7-Trimethylnaphtha...	20.785	170	66647	78.79	#	72
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	13.771	134	80341	77.07		100
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	17.411	154	89064m	73.65		
23) Acenaphthylene	18.894	152	102999	75.04		97
24) Acenaphthene	19.481	154	64545	78.07		98
25) Dibenzofuran	20.074	168	116999	78.86		100
26) Fluorene	21.259	166	81183	76.48		94
27) 1-Methylfluorene	23.249	180	51886	82.21		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	25.319	167	98625	67.23		100
34) Dibenzothiophene	24.130	184	157212m	99.30		
35) 4-Methyldibenzothiophene	25.641	198	89205	83.07		100
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	24.564	178	123134	76.80		99
42) Anthracene	24.745	178	112601	74.41		94
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351B.D
Acq On : 5 Nov 2014 1:27 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 05 08:07:44 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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	26.689	192	100607	80.31		94
48) 3,6-Dimethylphenanthrene	27.778	206	87575	79.76		93
49) Retene	30.450	234	47632	79.69	#	3
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	32.733	234	134418	79.71		100
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	28.655	202	144730	79.47	#	100
59) Pyrene	29.451	202	155028	78.13	#	100
60) 2-Methylfluoranthene	30.205	216	96451	79.91	#	100
61) Benzo(b)fluorene	30.817	216	100791	84.85		100
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	33.549	228	141027m	77.84		
68) Chrysene/Triphenylene	33.671	228	142808m	76.95		
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	42.409	191	63466	84.97		100
77) Benzo(b)fluoranthene	37.078	252	155366m	76.32		
78) Benzo(k,j)fluoranthene	37.151	252	166180m	77.76		
79) Benzo(a)fluoranthene	0.000		0	N.D. d		
80) Benzo(e)pyrene	38.046	252	180559	79.16		100
81) Benzo(a)pyrene	38.228	252	146536	75.21		100
82) Indeno(1,2,3-c,d)pyrene	42.874	276	176659	77.30		100
83) Dibenzo(a,h)anthracene	42.926	278	142141	76.39		90
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	44.218	276	143747	74.20		95
89) Perylene	38.520	252	172036	76.88	#	100
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\MS60210-ENV3351\
Data File : ENV3351B.D
Acq On : 5 Nov 2014 1:27 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 05 08:07:44 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

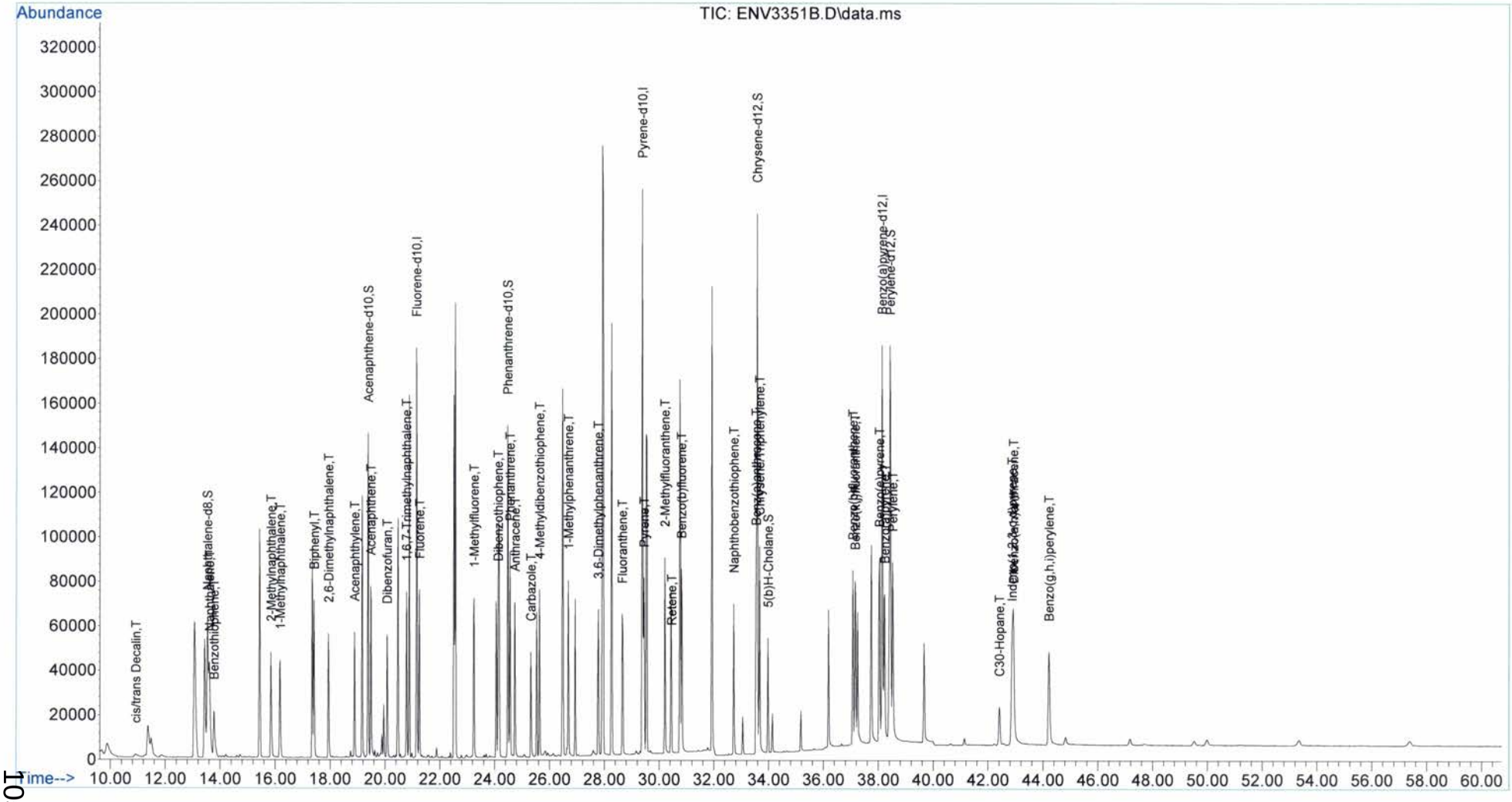
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351B.D
Acq On : 5 Nov 2014 1:27 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 05 08:07:44 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



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

Data File Name ENV3351C.D
Data File Path C:\msdchem\2\data\MS60210-ENV3351\
Operator YM
Date Acquired 11/5/2014 2:36
Acq. Method File PAH2014A.M
Sample Name Blank Spike Dupl.
Misc Info 0
Instrument Name GCMS6
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

ENV3351C.D
Blank Spike Dupl.
11/5/2014 2:36
PAH2014A.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	10.92	21981	76.8424	89.4959
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	13.60	107817	77.0375	89.7231
9)+10)	C1-Naphthalenes	16.02	153880	109.9505	128.0558
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	13.77	87223	77.4088	90.1556
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	17.41	98647	75.4662	87.8931
23)	Acenaphthylene	18.89	111685	75.2819	87.6784
24)	Acenaphthene	19.49	70223	78.5791	91.5186
25)	Dibenzofuran	20.07	126457	78.8579	91.8433
26)	Fluorene	21.26	87566	76.3195	88.8869
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	25.32	106715	67.8806	79.0584
42)	Anthracene	24.75	122614	75.6113	88.0621
41)	Phenanthrene	24.56	133498	77.6983	90.4927
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.34	109225	63.5710	74.0391
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	24.13	169924	100.1560	116.6485
35)+36)+37)	C1-Dibenzothiophenes	8.55	96925	57.1292	66.5365
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	28.67	157026	80.4573	93.7061
59)	Pyrene	29.45	167443	78.7507	91.7184
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	32.73	153175	84.7686	98.7273
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	33.55	153862	79.2487	92.2984
68)	Chrysene/Triphenylene	33.67	153564	77.2154	89.9303
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	37.08	167596	76.6288	89.2471
78)	Benzo(k,j)fluoranthene	37.15	179773	78.2930	91.1854
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.05	196113	80.0313	93.2099
81)	Benzo(a)pyrene	38.23	157162	75.0783	87.4413
89)	Perylene	38.52	186318	77.4948	90.2557
82)	Indeno(1,2,3-c,d)pyrene	42.89	191369	77.9417	90.7762
83)	Dibenzo(a,h)anthracene	42.93	154573	77.3220	90.0545
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	44.23	155476	74.7016	87.0026

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.85	85239	78.7621	91.7317
10)	1-Methylnaphthalene	16.18	68641	76.5485	89.1536
11)	2,6-Dimethylnaphthalene	17.94	71331	76.4823	89.0765
12)	1,6,7-Trimethylnaphthalene	20.80	72238	79.0102	92.0207
27)	1-Methylfluorene	23.25	55665	81.6003	95.0373
35)	4-Methyldibenzothiophene	25.64	96925	84.2319	98.1022
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	26.69	109225	81.3639	94.7619
48)	3,6-Dimethylphenanthrene	27.78	95423	81.1035	94.4587
49)	Retene	30.45	51293	80.0787	93.2651
60)	2-Methylfluoranthene	30.20	104987	81.1699	94.5360
61)	Benzo(b)fluorene	30.82	109749	86.2229	100.4211
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.42	67938	84.6650	98.6066
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	13.54	247638	208.87	83.51
21)	Acenaphthene-d10	19.38	162329	212.43	84.92
32)	Phenanthrene-d10	24.48	295356	214.82	85.86
66)	Chrysene-d12	33.59	368291	216.34	86.52
88)	Perylene-d12	38.45	401889	221.98	88.78
90)	5(b)H-Cholane	33.98	98232	224.37	89.75
	Internal Standards				
1)	Fluorene-d10	21.16	199493	251.05	
31)	Pyrene-d10	29.39	377784	250.63	
73)	Benzo(a)pyrene-d12	38.14	378113	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351C.D
Acq On : 5 Nov 2014 2:36 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 05 08:11:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.164	176	199493	251.05		0.01
31) Pyrene-d10	29.389	212	377784	250.63		0.00
73) Benzo(a)pyrene-d12	38.137	264	378113	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.538	136	247638	208.87		0.00
21) Acenaphthene-d10	19.383	164	162329	212.43		0.00
32) Phenanthrene-d10	24.480	188	295356	214.82		-0.01
66) Chrysene-d12	33.590	240	368291	216.33		-0.02
88) Perylene-d12	38.447	264	401889	221.98		0.00
90) 5(b)H-Cholane	33.977	217	98232	224.37		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.916	138	21981m	76.84		
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	13.603	128	107817	77.04		98
9) 2-Methylnaphthalene	15.850	142	85239	78.76		95
10) 1-Methylnaphthalene	16.180	142	68641	76.55		97
11) 2,6-Dimethylnaphthalene	17.942	156	71331	76.48		87
12) 1,6,7-Trimethylnaphtha...	20.796	170	72238	79.01		88
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	13.771	134	87223	77.41		100
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	17.411	154	98647m	75.47		
23) Acenaphthylene	18.893	152	111685	75.28		97
24) Acenaphthene	19.495	154	70223	78.58		91
25) Dibenzofuran	20.074	168	126457	78.86		100
26) Fluorene	21.258	166	87566	76.32		95
27) 1-Methylfluorene	23.250	180	55665	81.60		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	25.319	167	106715	67.88		100
34) Dibenzothiophene	24.131	184	169924m	100.16		
35) 4-Methyldibenzothiophene	25.639	198	96925	84.23		100
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	24.564	178	133498	77.70		99
42) Anthracene	24.746	178	122614	75.61		94
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351C.D
Acq On : 5 Nov 2014 2:36 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 05 08:11:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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	26.688	192	109225	81.36			94
48)	3,6-Dimethylphenanthrene	27.777	206	95423	81.10			95
49)	Retene	30.449	234	51293	80.08		#	5
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	32.733	234	153175	84.77			100
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	28.675	202	157026	80.46		#	100
59)	Pyrene	29.450	202	167443	78.75		#	100
60)	2-Methylfluoranthene	30.204	216	104987	81.17		#	100
61)	Benzo(b)fluorene	30.816	216	109749	86.22			98
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	33.549	228	153862	79.25			98
68)	Chrysene/Triphenylene	33.671	228	153564	77.22			99
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	42.422	191	67938	84.66			100
77)	Benzo(b)fluoranthene	37.078	252	167596m	76.63			
78)	Benzo(k,j)fluoranthene	37.151	252	179773m	78.29			
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d		
80)	Benzo(e)pyrene	38.046	252	196113	80.03			100
81)	Benzo(a)pyrene	38.228	252	157162	75.08			100
82)	Indeno(1,2,3-c,d)pyrene	42.887	276	191369	77.94			100
83)	Dibenzo(a,h)anthracene	42.926	278	154573	77.32			90
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	44.231	276	155476	74.70			95
89)	Perylene	38.520	252	186318	77.49		#	100
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\MS60210-ENV3351\
Data File : ENV3351C.D
Acq On : 5 Nov 2014 2:36 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 05 08:11:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

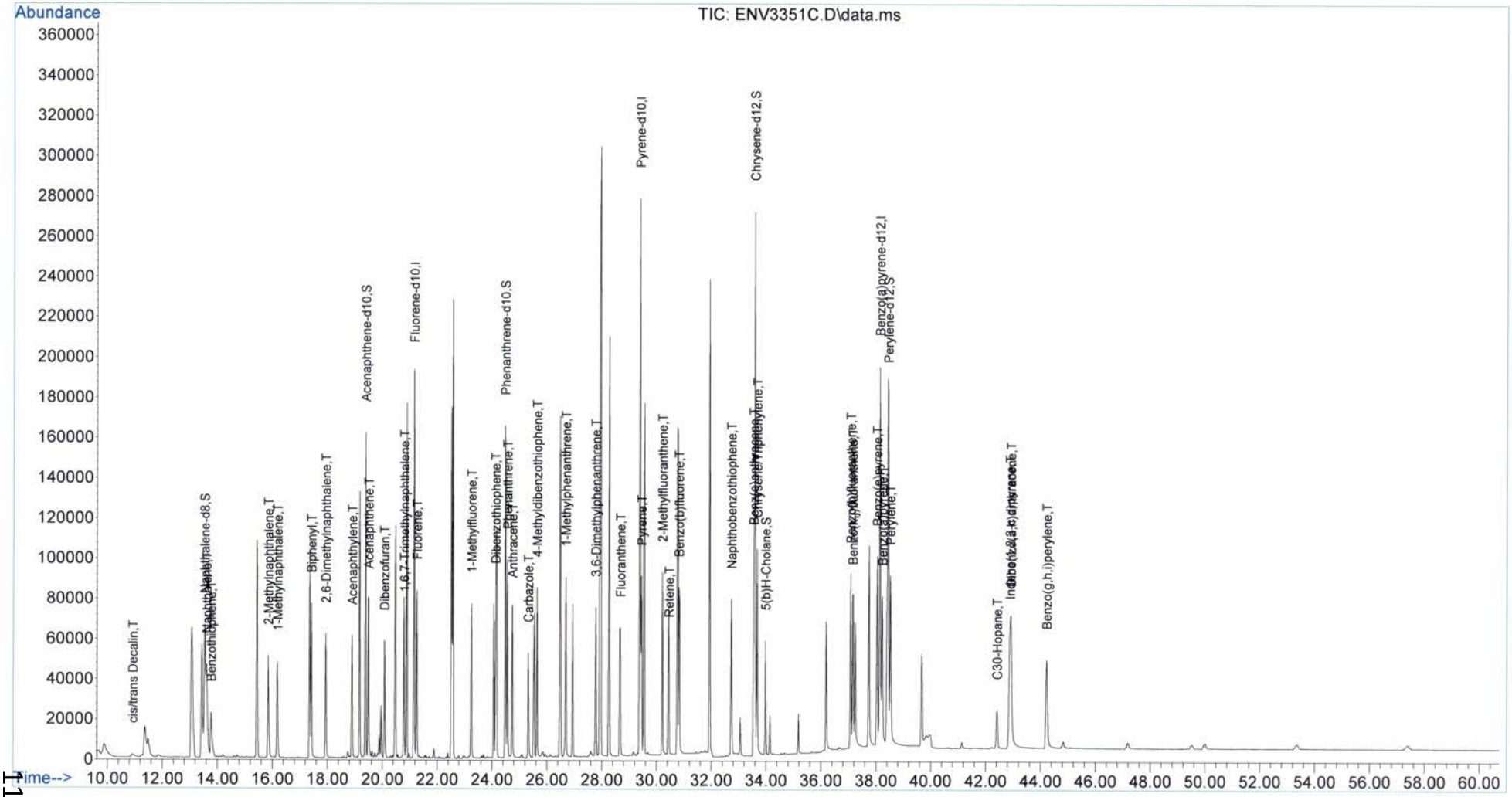
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ENV3351C.D
Acq On : 5 Nov 2014 2:36 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 05 08:11:24 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



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

Data File Name ARC2059.D
Data File Path C:\GCMS6\MS60210\
Operator YM
Date Acquired 11/5/2014 3:46
Acq. Method File PAH2014A.M
Sample Name SHN-Cove-010(NB)102014
Misc Info 0
Instrument Name GCMS6
Vial Number 15
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

ARC2059.D
HN-Cove-010(NB)102014
11/5/2014 3:46
PAH2014A.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	13.60	4930	3.3883	4.2547
9)+10)	C1-Naphthalenes	16.02	3308	2.2736	2.8549
13)	C2-Naphthalenes	17.97	6726	4.6227	5.8047
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	17.41	1187	0.8735	1.0968
23)	Acenaphthylene	18.89	300	0.1945	0.2442
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.09	5078	3.0459	3.8247
26)	Fluorene	21.26	3869	3.2436	4.0729
28)	C1-Fluorenes	23.25	2113	1.7714	2.2244
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	24.75	1468	0.8303	1.0426
41)	Phenanthrene	24.56	32979	17.6050	22.1063
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	24.14	2084	1.1266	1.4147
35)+36)+37)	C1-Dibenzothiophenes	25.95	1999	1.0807	1.3570
38)	C2-Dibenzothiophenes	27.05	5088	2.7506	3.4539
39)	C3-Dibenzothiophenes	28.55	7826	4.2308	5.3126
40)	C4-Dibenzothiophenes	30.41	8466	4.5768	5.7470
58)	Fluoranthene	28.68	6650	3.1252	3.9243
59)	Pyrene	29.45	4297	1.8536	2.3275
62)	C1-Fluoranthenes/Pyrenes	31.27	4856	2.2821	2.8656
63)	C2-Fluoranthenes/Pyrenes	32.57	8138	3.8245	4.8023
64)	C3-Fluoranthenes/Pyrenes	33.90	7740	3.6374	4.5675
65)	C4-Fluoranthenes/Pyrenes	34.57	8407	3.9509	4.9611
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	33.55	2775	1.3110	1.6461
68)	Chrysene/Triphenylene	33.67	4170	1.9231	2.4149
69)	C1-Chrysenes	34.89	7545	3.4797	4.3693
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	37.08	3680	1.6432	2.0633
78)	Benzo(k,j)fluoranthene	37.17	980	0.4168	0.5234
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.14	962	0.3834	0.4814
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	38.52	1087	0.4415	0.5544
82)	Indeno(1,2,3-c,d)pyrene	42.90	1881	0.7482	0.9395
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	44.24	2499	1.1726	1.4724

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	15.85	2137	1.8994	2.3850
10)	1-Methylnaphthalene	16.18	1171	1.2561	1.5773
11)	2,6-Dimethylnaphthalene	17.97	1727	1.7812	2.2366
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	23.25	670	0.9447	1.1863
35)	4-Methyldibenzothiophene	25.64	982	0.7827	0.9829
36)	2/3-Methyldibenzothiophene	25.95	691	0.5508	0.6916
37)	1-Methyldibenzothiophene	26.27	326	0.2598	0.3263
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	30.23	412	0.2922	0.3669
61)	Benzo(b)fluorene	30.84	429	0.3091	0.3882
74)	C29-Hopane	40.43	7923	9.6426	12.1081
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.71	10649	12.9602	16.2739
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	13.54	194490	157.79	63.09
21)	Acenaphthene-d10	19.38	158097	199.01	79.55
32)	Phenanthrene-d10	24.48	298680	199.25	79.64
66)	Chrysene-d12	33.59	376457	202.82	81.12
88)	Perylene-d12	38.43	392769	211.87	84.74
90)	5(b)H-Cholane	33.98	103623	231.15	92.46
	Internal Standards				
1)	Fluorene-d10	21.16	207397	251.05	
31)	Pyrene-d10	29.39	411891	250.63	
73)	Benzo(a)pyrene-d12	38.14	387176	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS60210-ENV3351\
Data File : ARC2059.D
Acq On : 5 Nov 2014 3:46 am
Operator : YM
Sample : SHN-Cove-010(NB)102014
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 05 08:17:59 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.163	176	207397	251.05		0.01
31) Pyrene-d10	29.390	212	411891	250.63		0.00
73) Benzo(a)pyrene-d12	38.138	264	387176	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.539	136	194490	157.79		0.00
21) Acenaphthene-d10	19.383	164	158097	199.01		0.00
32) Phenanthrene-d10	24.480	188	298680	199.25		-0.01
66) Chrysene-d12	33.590	240	376457	202.82		-0.02
88) Perylene-d12	38.430	264	392769	211.87		-0.02
90) 5(b)H-Cholane	33.977	217	103623	231.15		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	13.603	128	4930m	3.39		
9) 2-Methylnaphthalene	15.851	142	2137	1.90		94
10) 1-Methylnaphthalene	16.181	142	1171m	1.26		
11) 2,6-Dimethylnaphthalene	17.971	156	1727	1.78		86
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	17.971	156	6726m	4.62		
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	17.411	154	1187m	0.87		
23) Acenaphthylene	18.894	152	300m	0.19		
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.085	168	5078m	3.05		
26) Fluorene	21.258	166	3869	3.24		90
27) 1-Methylfluorene	23.249	180	670	0.94		98
28) C1-Fluorenes	23.249	180	2113m	1.77		
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	24.144	184	2084m	1.13		
35) 4-Methyldibenzothiophene	25.641	198	982m	0.78		
36) 2/3-Methyldibenzothiop...	25.949	198	691m	0.55		
37) 1-Methyldibenzothiophene	26.271	198	326m	0.26		
38) C2-Dibenzothiophenes	27.054	212	5088m	2.75		
39) C3-Dibenzothiophenes	28.554	226	7826m	4.23		
40) C4-Dibenzothiophenes	30.410	240	8466m	4.58		
41) Phenanthrene	24.564	178	32979	17.60		100
42) Anthracene	24.745	178	1468m	0.83		
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

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Data File : ARC2059.D
Acq On : 5 Nov 2014 3:46 am
Operator : YM
Sample : SHN-Cove-010(NB)102014
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 05 08:17:59 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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	28.676	202	6650	3.13		100
59) Pyrene	29.451	202	4297m	1.85		
60) 2-Methylfluoranthene	30.226	216	412m	0.29		
61) Benzo(b)fluorene	30.838	216	429m	0.31		
62) C1-Fluoranthenes/Pyrenes	31.266	216	4856m	2.28		
63) C2-Fluoranthenes/Pyrenes	32.570	230	8138m	3.82		
64) C3-Fluoranthenes/Pyrenes	33.896	244	7740m	3.64		
65) C4-Fluoranthenes/Pyrenes	34.569	258	8407m	3.95		
67) Benz(a)anthracene	33.549	228	2775m	1.31		
68) Chrysene/Triphenylene	33.671	228	4170m	1.92		
69) C1-Chrysenes	34.895	242	7545m	3.48		
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	40.432	191	7923m	9.64		
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	41.711	191	10649m	12.96		
77) Benzo(b)fluoranthene	37.079	252	3680m	1.64		
78) Benzo(k,j)fluoranthene	37.170	252	980m	0.42		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.138	252	962m	0.38		
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	42.900	276	1881m	0.75		
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	44.244	276	2499m	1.17		
89) Perylene	38.521	252	1087m	0.44		
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\MS60210-ENV3351\
Data File : ARC2059.D
Acq On : 5 Nov 2014 3:46 am
Operator : YM
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Misc :
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Quant Time: Nov 05 08:17:59 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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\MS60210-ENV3351\
Data File : ARC2059.D
Acq On : 5 Nov 2014 3:46 am
Operator : YM
Sample : SHN-Cove-010(NB)102014
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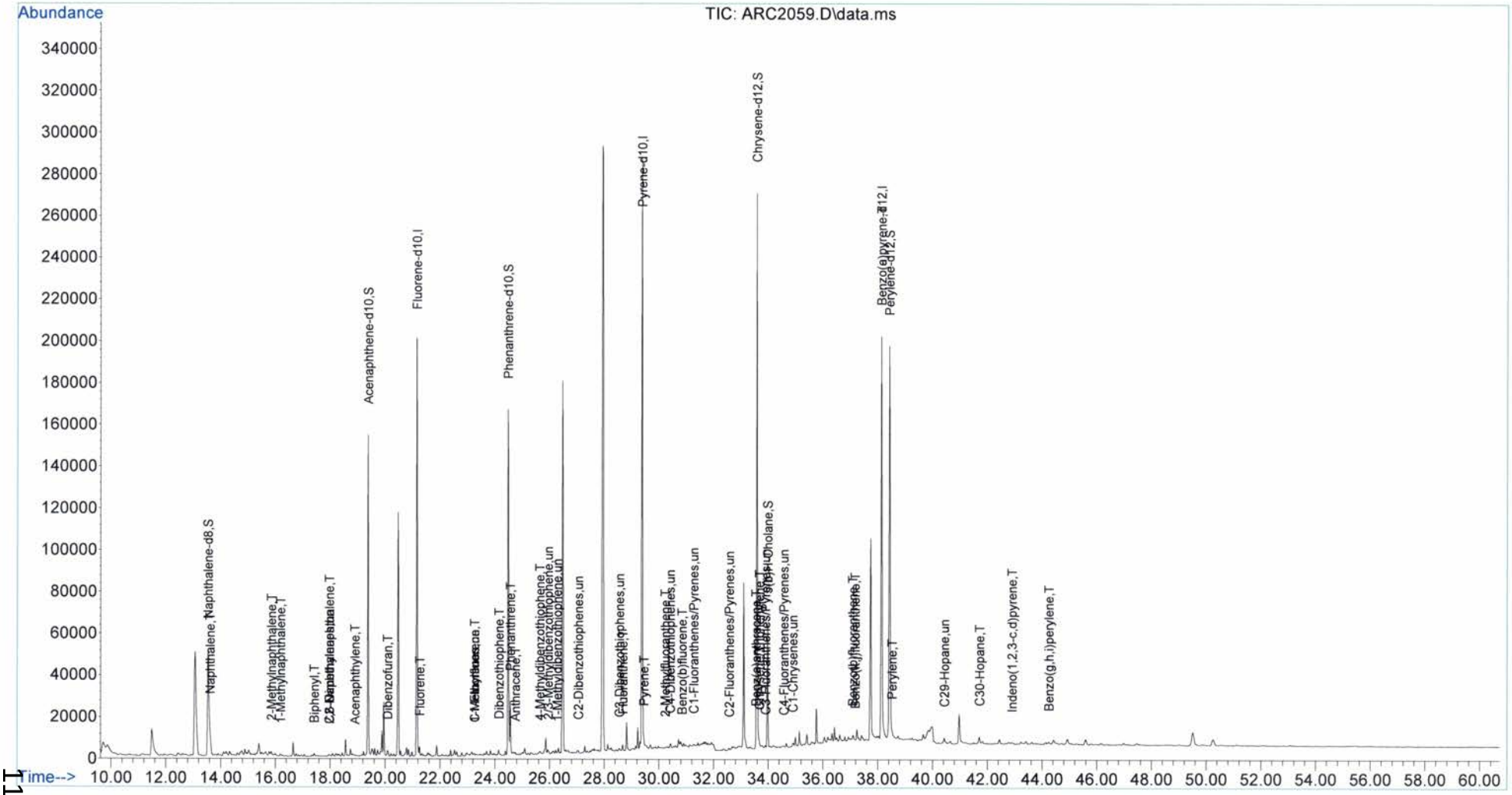


Aliphatic Hydrocarbons/
Total Petroleum Hydrocarbons/
Initial Calibration Data
and
Initial Calibration Verification Data

TPH/Aliphatic
ICAL
FID1C08FRONT101514.M

GC/FID-1 FRONT

Calibration Status Report HP5890

Method Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Method File : FID1C08FRONT101514.M
Title : C8 - C40 aliphatic
Last Update : Wed Oct 15 12:40:43 2014
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	1	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID10252C.D
2	2	10	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID10252D.D
3	3	25	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID10252E.D
4	4	40	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID10252F.D
5	5	50	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID10252G.D
6	6	100	50	P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID10252H.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Oct 15 10:10 2014	Oct 15 10:09 2014	14-Oct-2014, 15:09:10
2	2	Oct 15 10:36 2014	Oct 15 10:36 2014	14-Oct-2014, 16:19:51
3	3	Oct 15 10:45 2014	Oct 15 10:44 2014	14-Oct-2014, 17:30:17
4	4	Oct 15 10:50 2014	Oct 15 10:50 2014	14-Oct-2014, 18:40:47
5	5	Oct 15 11:13 2014	Oct 15 11:12 2014	14-Oct-2014, 19:51:03
6	6	Oct 15 11:20 2014	Oct 15 11:20 2014	14-Oct-2014, 21:01:27

FID1C08FRONT101514.M Wed Oct 15 12:41:48 2014

Response Factor Report HP5890

Method Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Method File : FID1C08FRONT101514.M
Title : C8 - C40 aliphatic
Last Update : Wed Oct 15 12:40:43 2014
Response Via : Initial Calibration

Calibration Files
1 =FID10252C.D 2 =FID10252D.D 3 =FID10252E.D
4 =FID10252F.D 5 =FID10252G.D 6 =FID10252H.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	n-hexadecane-d34	----------ISTD----------							
2)		n-C8	1.023	0.983	0.968	1.093	0.954	0.949	0.995	5.51
3)		n-C9	1.068	1.020	1.008	1.110	1.000	0.992	1.033	4.49
4)		n-C10	1.114	1.064	1.054	1.134	1.044	1.033	1.074	3.78
5)		n-C11	1.148	1.092	1.085	1.141	1.075	1.062	1.100	3.24
6)	S	n-dodecane-d26	1.021	0.959	0.949	0.994	0.989	0.925	0.973	3.56
7)		n-C12	1.207	1.140	1.134	1.169	1.122	1.108	1.147	3.12
8)		i-13	1.229	1.160	1.157	1.173	1.144	1.125	1.165	3.05
9)		i-14	1.255	1.184	1.180	1.180	1.163	1.142	1.184	3.23
10)		n-C13	1.229	1.160	1.157	1.173	1.144	1.125	1.165	3.05
11)		i-15	1.290	1.209	1.203	1.190	1.183	1.158	1.206	3.74
12)		n-C14	1.255	1.184	1.180	1.180	1.163	1.142	1.184	3.23
13)		i-16	1.300	1.222	1.215	1.195	1.190	1.166	1.215	3.81
14)		n-C15	1.290	1.209	1.203	1.190	1.183	1.158	1.206	3.74
15)		n-C16	1.300	1.222	1.215	1.195	1.190	1.166	1.215	3.82
16)	I	5a-androstane	----------ISTD----------							
17)		i-18	1.029	0.968	0.965	0.947	0.949	0.943	0.967	3.30
18)		n-C17	1.042	0.975	0.970	0.958	0.956	0.949	0.975	3.50
19)		Pristane	1.044	0.972	0.970	0.954	0.954	0.946	0.973	3.71
20)		n-C18	1.029	0.968	0.965	0.947	0.949	0.943	0.967	3.30
21)		Phytane	0.889	0.840	0.837	0.822	0.821	0.816	0.837	3.22
22)		n-C19	1.029	0.964	0.959	0.942	0.943	0.936	0.962	3.59
23)	S	n-eicosane-d42	0.869	0.827	0.817	0.814	0.847	0.796	0.828	3.15
24)		n-C20	1.030	0.978	0.972	0.956	0.956	0.946	0.973	3.12
25)		n-C21	1.050	1.004	0.997	0.979	0.979	0.969	0.996	2.94
26)		n-C22	1.059	0.988	0.980	0.965	0.966	0.952	0.985	3.90
27)		n-C23	1.043	0.982	0.976	0.961	0.959	0.946	0.978	3.53
28)		n-C24	1.031	0.977	0.970	0.957	0.953	0.939	0.971	3.32
29)		n-C25	1.031	0.975	0.963	0.953	0.947	0.931	0.967	3.60
30)		n-C26	1.047	0.986	0.974	0.964	0.959	0.939	0.978	3.82
31)		n-C27	1.023	0.972	0.961	0.953	0.944	0.922	0.963	3.58
32)		n-C28	1.013	0.967	0.954	0.949	0.936	0.913	0.955	3.54
33)		n-C29	1.003	0.956	0.942	0.936	0.926	0.898	0.943	3.71
34)	S	n-triacontane...	0.782	0.743	0.729	0.736	0.753	0.693	0.739	3.96
35)		n-C30	1.008	0.950	0.937	0.935	0.920	0.891	0.940	4.15
36)		n-C31	0.960	0.922	0.906	0.910	0.891	0.859	0.908	3.71
37)		n-C32	0.962	0.934	0.916	0.920	0.899	0.867	0.916	3.52
38)		n-C33	0.911	0.881	0.864	0.873	0.849	0.816	0.866	3.66
39)		n-C34	0.918	0.899	0.883	0.892	0.866	0.833	0.882	3.36
40)		n-C35	0.914	0.892	0.873	0.881	0.856	0.824	0.873	3.53
41)		n-C36	0.936	0.917	0.898	0.907	0.881	0.849	0.898	3.37
42)		n-C37	0.877	0.863	0.846	0.853	0.829	0.803	0.845	3.13
43)		n-C38	0.865	0.865	0.850	0.859	0.835	0.811	0.848	2.49
44)		n-C39	0.837	0.853	0.839	0.850	0.827	0.804	0.835	2.13
45)		n-C40	0.820	0.846	0.836	0.840	0.823	0.803	0.828	1.91
46)		TPH	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
47)		TRH1	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
48)		TRH2	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
49)		TRH3	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
50)		TRH4	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
51)		TRH5	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
52)		TRH6	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98

10/15/14

53)	GRO	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
54)	DRO	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98
55)	RRO	0.970	0.926	0.918	0.923	0.903	0.889	0.921	2.98

(#) = Out of Range

FID1C08FRONT101514.M Wed Oct 15 12:41:14 2014

Area for TPH Calculations

Last Calibration Update Wed Oct 15 11:20:21 2014
Quant Method FID1C08FRONT101514.M

	Level 1 FID10252C.D	Level 2 FID10252D.D	Level 3 FID10252E.D	Level 4 FID10252F.D	Level 5 FID10252G.D	Level 6 FID10252H.D
n-C8	6665	50902	128318	116907	259501	521840
n-C9	6972	52927	133877	119019	272037	545483
n-C10	7239	54996	139355	121041	283517	567031
n-C11	7469	56543	143716	122000	292189	584044
n-C12	7840	58902	149949	124814	304582	608148
n-C13	8022	60261	153694	125841	311906	620427
n-C14	8156	61194	155994	125975	315779	626695
n-C15	8409	62702	159445	127347	322004	637497
n-C16	8462	63213	160765	127651	323340	640885
n-C17	8655	64538	163508	129726	329385	651732
Pristane	8651	64182	163074	128887	327882	647639
n-C18	8548	64053	162666	128356	327246	647431
Phytane	7584	57060	144886	114374	290544	575206
n-C19	8815	65812	166711	131583	335255	662668
n-C20	8537	64607	163469	129218	328739	648053
n-C21	8714	66342	167867	132471	337007	664601
n-C22	8763	65204	164564	130205	331840	651376
n-C23	8640	64790	164018	129836	329712	647723
n-C24	8547	64535	163051	129332	327879	643564
n-C25	8544	64373	161974	128875	325831	637904
n-C26	8665	65075	163592	130167	329233	642394
n-C27	8468	64135	161386	128569	324168	630566
n-C28	8378	63706	160089	127950	321273	623971
n-C29	8294	63004	158020	126204	317743	614147
n-C30	8341	62635	157302	126105	315946	608960
n-C31	8156	62395	156116	126086	313819	602719
n-C32	7986	61757	154265	124527	309445	594641
n-C33	7524	58013	144892	117600	291213	557441
n-C34	7599	59322	148235	120390	297348	569647
n-C35	7550	58708	146378	118796	293508	562877
n-C36	7742	60394	150631	122271	302169	580217
n-C37	7473	58595	146220	118602	293054	565101
n-C38	7172	57144	143120	116261	287548	555934
n-C39	6949	56410	141386	115121	284790	551957
n-C40	6777	55755	140262	113247	282386	548668
Average Area (use for TPH, TRPH, GRO, DRO, RRO)	8009	60977	153794	124439	309709	606834
n-C36/n-C20	0.91	0.93	0.92	0.95	0.92	0.90

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

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252C.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 15:09:10
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:09:14 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
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	12.410	259903	50.000 ug/mlm
16) I	5a-androstane	17.390	330693	50.040 ug/mlm
	System Monitoring Compounds			
6) S	n-dodecane-d26	8.141	6631	1.312 ug/mlm
23) S	n-eicosane-d42	16.885	7137	1.309 ug/mlm
34) S	n-triacontane-d62	28.720	6558	1.360 ug/mlm
	Target Compounds			
2)	n-C8	3.018	6665	1.319 ug/mlm
3)	n-C9	4.306	6972	1.315 ug/mlm
4)	n-C10	5.719	7239	1.306 ug/mlm
5)	n-C11	7.080	7469	1.310 ug/mlm
7)	n-C12	8.346	7840	1.314 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	9.523	8022	1.322 ug/mlm
11)	i-15	0.000	0	N.D. ug/mld
12)	n-C14	10.621	8156	1.324 ug/mlm
13)	i-16	0.000	0	N.D. ug/mld
14)	n-C15	11.654	8409	1.337 ug/mlm
15)	n-C16	12.647	8462	1.340 ug/mlm
17)	i-18	0.000	0	N.D. ug/mld
18)	n-C17	13.699	8655	1.339 ug/mlm
19)	Pristane	13.811	8651	1.349 ug/mlm
20)	n-C18	14.826	8548	1.340 ug/mlm
21)	Phytane	14.982	7584	1.370 ug/mlm
22)	n-C19	16.025	8815	1.393 ug/mlm
24)	n-C20	17.272	8537	1.334 ug/mlm
25)	n-C21	18.548	8714	1.329 ug/mlm
26)	n-C22	19.834	8763	1.359 ug/mlm
27)	n-C23	21.113	8640	1.350 ug/mlm
28)	n-C24	22.370	8547	1.341 ug/mlm
29)	n-C25	23.602	8544	1.350 ug/mlm
30)	n-C26	24.799	8665	1.355 ug/mlm
31)	n-C27	25.964	8468	1.345 ug/mlm
32)	n-C28	27.093	8378	1.337 ug/mlm
33)	n-C29	28.190	8294	1.344 ug/mlm
35)	n-C30	29.252	8341	1.354 ug/mlm
36)	n-C31	30.283	8156	1.367 ug/mlm
37)	n-C32	31.283	7986	1.322 ug/mlm
38)	n-C33	32.256	7524	1.317 ug/mlm
39)	n-C34	33.199	7599	1.304 ug/mlm
40)	n-C35	34.127	7550	1.300 ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252C.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 15:09:10
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:09:14 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.145	7742	1.295	ug/mlm
42)	n-C37	36.315	7473	1.322	ug/mlm
43)	n-C38	37.661	7172	1.262	ug/mlm
44)	n-C39	39.248	6949	1.228	ug/mlm
45)	n-C40	41.104	6777	1.206	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

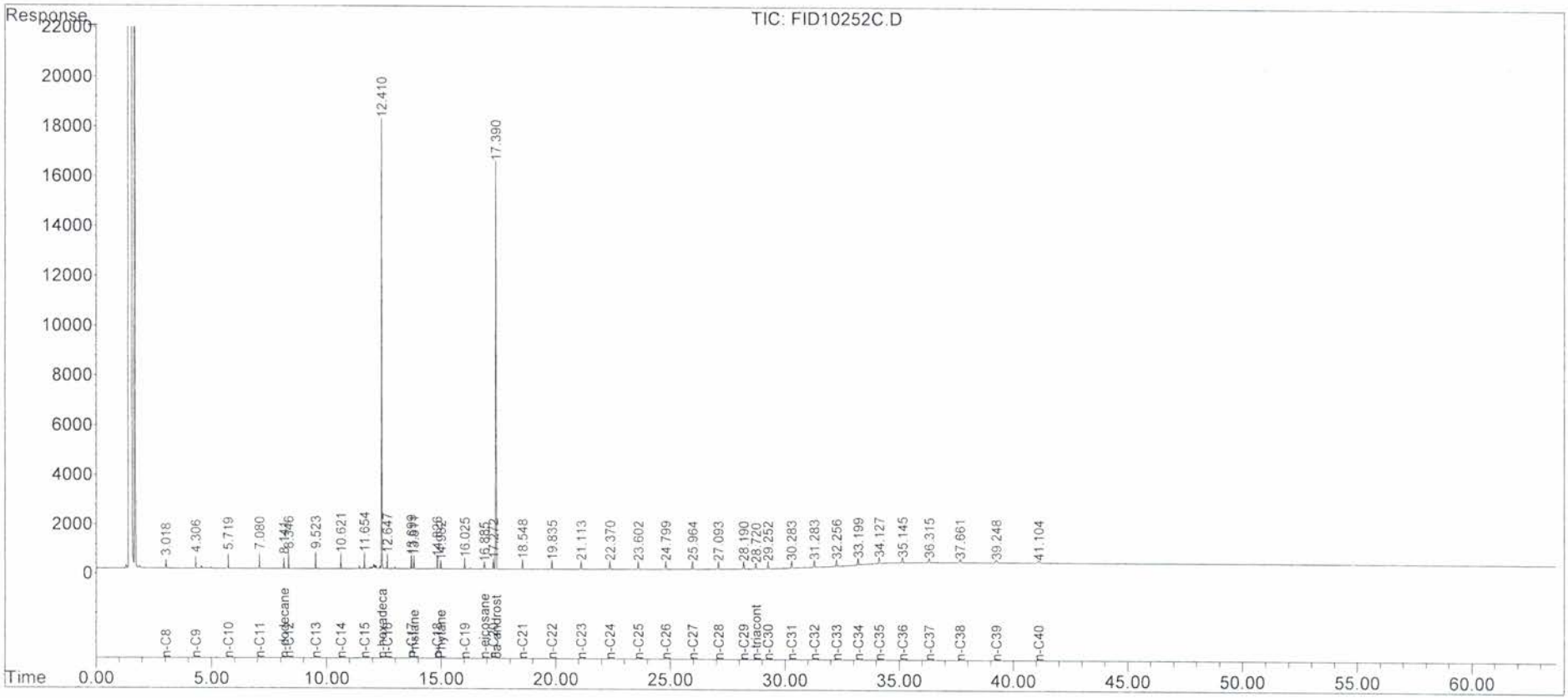
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252C.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 15:09:10
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-021
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:09:14 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 25 10:58:36 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252D.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 16:19:51
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:36:49 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:10:02 2014
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	12.412	258452	50.000	ug/mlm
16) I	5a-androstane	17.388	329445	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.140	49589	9.887	ug/mlm
23) S	n-eicosane-d42	16.885	54125	9.977	ug/mlm
34) S	n-triacontane-d62	28.718	49628	10.292	ug/mlm
Target Compounds					
2)	n-C8	3.015	50902	10.144	ug/mlm
3)	n-C9	4.305	52927	10.078	ug/mlm
4)	n-C10	5.718	54996	10.001	ug/mlm
5)	n-C11	7.079	56543	9.982	ug/mlm
7)	n-C12	8.346	58902	9.954	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	9.523	60260	10.009	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.621	61194	9.993	ug/mlm
13)	i-16	0.000	0	N.D.	ug/ml
14)	n-C15	11.655	62702	10.056	ug/mlm
15)	n-C16	12.649	63213	10.068	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.698	64538	10.048	ug/mlm
19)	Pristane	13.811	64181	10.030	ug/mlm
20)	n-C18	14.828	64053	10.071	ug/mlm
21)	Phytane	14.982	57060	10.369	ug/mlm
22)	n-C19	16.024	65811	10.410	ug/mlm
24)	n-C20	17.272	64607	10.123	ug/mlm
25)	n-C21	18.547	66342	10.172	ug/mlm
26)	n-C22	19.836	65204	10.118	ug/mlm
27)	n-C23	21.111	64790	10.136	ug/mlm
28)	n-C24	22.369	64535	10.169	ug/mlm
29)	n-C25	23.600	64373	10.196	ug/mlm
30)	n-C26	24.798	65075	10.182	ug/mlm
31)	n-C27	25.963	64135	10.215	ug/mlm
32)	n-C28	27.094	63706	10.221	ug/mlm
33)	n-C29	28.191	63004	10.227	ug/mlm
35)	n-C30	29.253	62635	10.180	ug/mlm
36)	n-C31	30.285	62395	10.505	ug/mlm
37)	n-C32	31.284	61757	10.283	ug/mlm
38)	n-C33	32.254	58013	10.205	ug/mlm
39)	n-C34	33.199	59322	10.228	ug/mlm
40)	n-C35	34.128	58708	10.176	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252D.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 16:19:51
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:36:49 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:10:02 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.145	60394	10.142	ug/mlm
42)	n-C37	36.313	58595	10.415	ug/mlm
43)	n-C38	37.666	57144	10.093	ug/mlm
44)	n-C39	39.255	56410	10.063	ug/mlm
45)	n-C40	41.118	55755	10.008	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

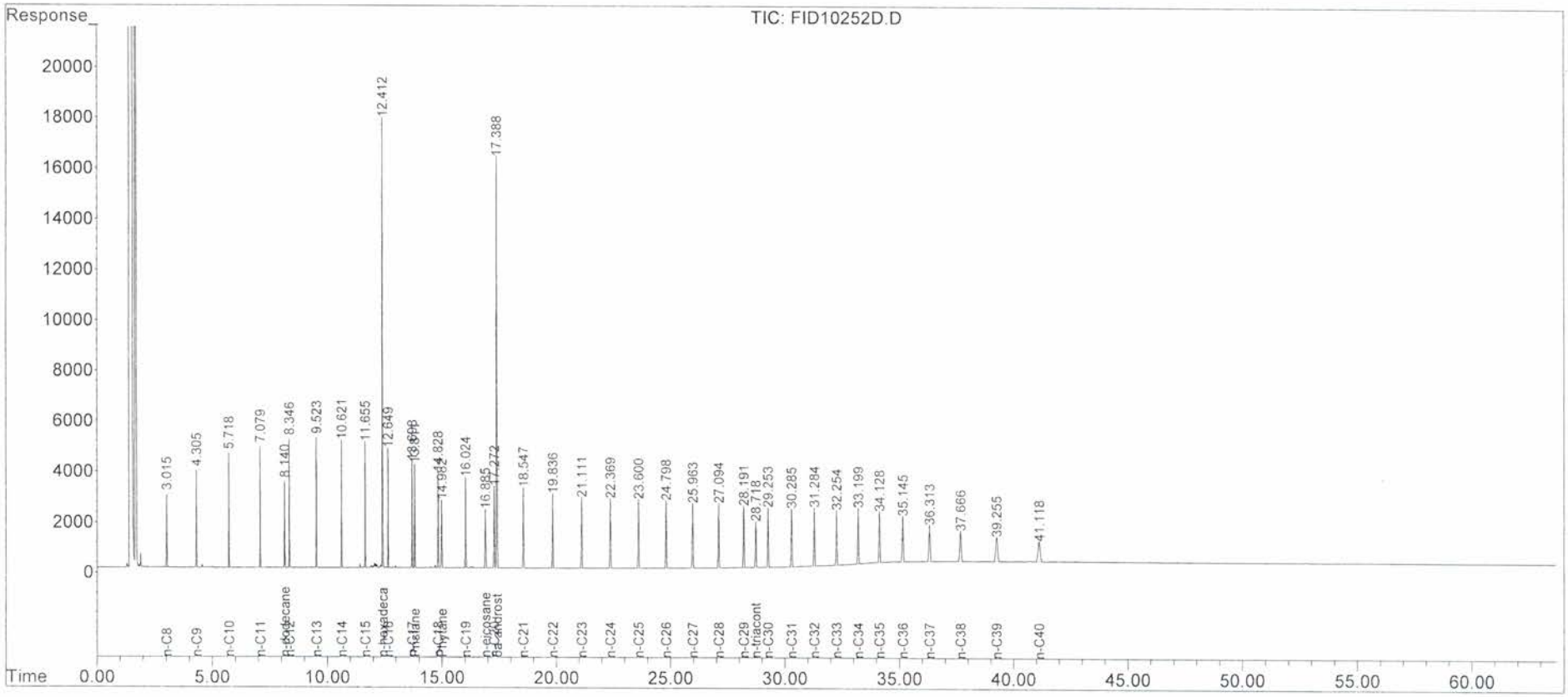
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252D.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 16:19:51
Operator : Meghan Dailey
Sample : AL-WKC2-10-021
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:36:49 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:10:02 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252E.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 17:30:17
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:44:31 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:36:57 2014
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	12.410	264410	50.000	ug/mlm
16) I	5a-androstane	17.389	335506	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.141	125441	24.480	ug/mlm
23) S	n-eicosane-d42	16.886	136065	24.583	ug/mlm
34) S	n-triacontane-d62	28.721	123951	25.160	ug/mlm
Target Compounds					
2)	n-C8	3.017	128318	24.947	ug/mlm
3)	n-C9	4.307	133877	24.900	ug/mlm
4)	n-C10	5.720	139355	24.791	ug/mlm
5)	n-C11	7.080	143716	24.843	ug/mlm
7)	n-C12	8.347	149949	24.803	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	9.523	153694	24.993	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.622	155994	24.931	ug/mlm
13)	i-16	0.000	0	N.D.	ug/ml
14)	n-C15	11.655	159445	25.007	ug/mlm
15)	n-C16	12.649	160765	25.030	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.700	163508	25.005	ug/mlm
19)	Pristane	13.812	163074	25.025	ug/mlm
20)	n-C18	14.828	162666	25.104	ug/mlm
21)	Phytane	14.984	144886	25.830	ug/mlm
22)	n-C19	16.026	166711	25.875	ug/mlm
24)	n-C20	17.273	163469	25.114	ug/mlm
25)	n-C21	18.550	167867	25.217	ug/mlm
26)	n-C22	19.837	164564	25.020	ug/mlm
27)	n-C23	21.114	164018	25.143	ug/mlm
28)	n-C24	22.371	163051	25.164	ug/mlm
29)	n-C25	23.603	161974	25.118	ug/mlm
30)	n-C26	24.800	163592	25.065	ug/mlm
31)	n-C27	25.966	161386	25.167	ug/mlm
32)	n-C28	27.096	160089	25.139	ug/mlm
33)	n-C29	28.191	158020	25.104	ug/mlm
35)	n-C30	29.255	157302	25.034	ug/mlm
36)	n-C31	30.289	156116	25.742	ug/mlm
37)	n-C32	31.287	154265	25.164	ug/mlm
38)	n-C33	32.260	144892	24.983	ug/mlm
39)	n-C34	33.203	148235	25.063	ug/mlm
40)	n-C35	34.130	146378	24.911	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252E.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 17:30:17
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:44:31 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:36:57 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.151	150631	24.843	ug/mlm
42)	n-C37	36.317	146220	25.547	ug/mlm
43)	n-C38	37.671	143120	24.888	ug/mlm
44)	n-C39	39.262	141386	24.849	ug/mlm
45)	n-C40	41.128	140262	24.802	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

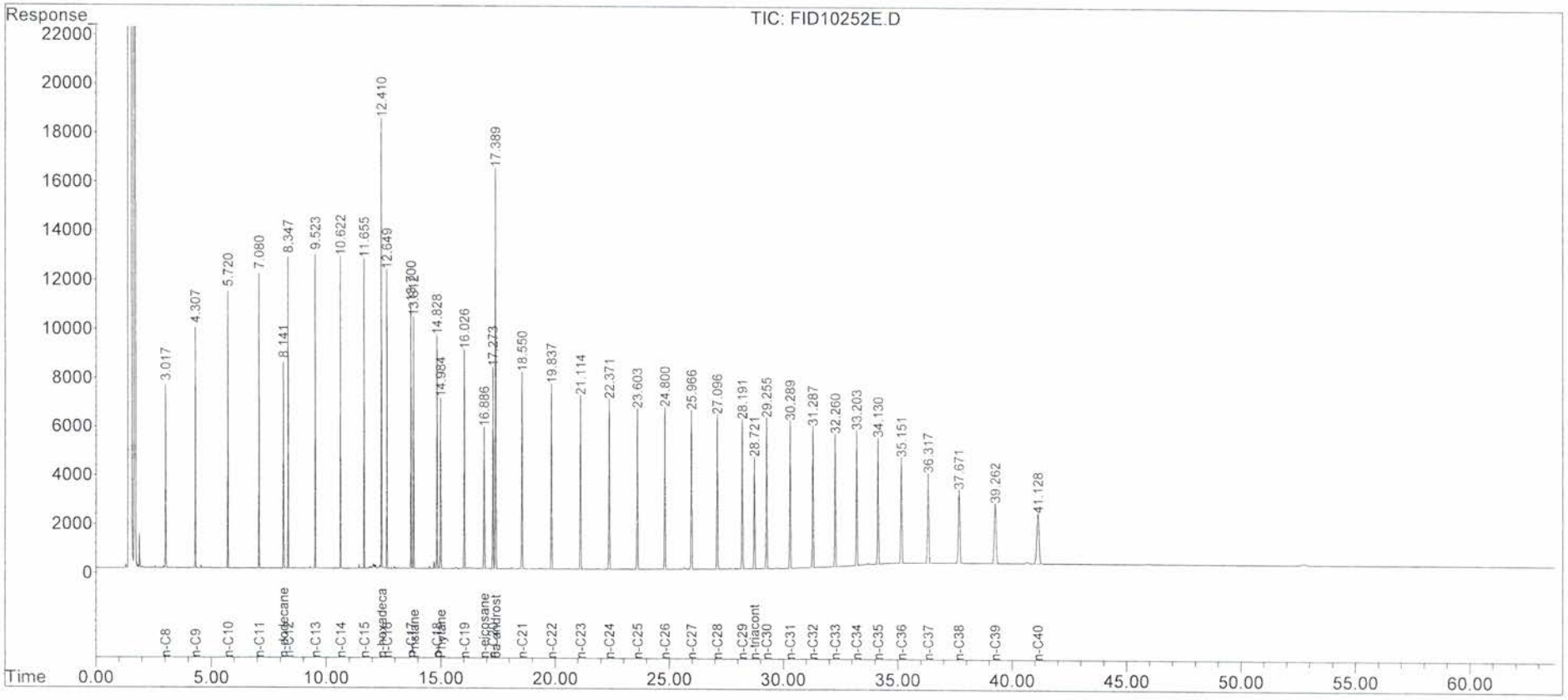
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252E.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 17:30:17
Operator : Meghan Dailey
Sample : AL-WKC3-25-021
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:44:31 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:36:57 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252F.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 18:40:47
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:50:08 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:45:46 2014
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	12.408	133412	50.000	ug/mlm
16) I	5a-androstane	17.385	168603	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.141	106116	41.081	ug/mlm
23) S	n-eicosane-d42	16.885	109101	39.198	ug/mlm
34) S	n-triacontane-d62	28.721	100674	40.605	ug/mlm
	Target Compounds				
2)	n-C8	3.019	116907	45.046	ug/mlm
3)	n-C9	4.307	119019	43.888	ug/mlm
4)	n-C10	5.719	121041	42.701	ug/mlm
5)	n-C11	7.079	122000	41.844	ug/mlm
7)	n-C12	8.346	124814	40.963	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	9.522	125841	40.593	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.621	125975	39.922	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.655	127347	39.589	ug/mlm
15)	n-C16	12.648	127651	39.384	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.699	129726	39.505	ug/mlm
19)	Pristane	13.811	128887	39.344	ug/mlm
20)	n-C18	14.827	128356	39.420	ug/mlm
21)	Phytane	14.981	114374	40.565	ug/mlm
22)	n-C19	16.024	131583	40.637	ug/mlm
24)	n-C20	17.272	129218	39.495	ug/mlm
25)	n-C21	18.550	132471	39.571	ug/mlm
26)	n-C22	19.836	130205	39.372	ug/mlm
27)	n-C23	21.114	129836	39.567	ug/mlm
28)	n-C24	22.370	129332	39.691	ug/mlm
29)	n-C25	23.601	128875	39.741	ug/mlm
30)	n-C26	24.800	130167	39.658	ug/mlm
31)	n-C27	25.963	128569	39.846	ug/mlm
32)	n-C28	27.093	127950	39.933	ug/mlm
33)	n-C29	28.191	126204	39.864	ug/mlm
35)	n-C30	29.255	126105	39.897	ug/mlm
36)	n-C31	30.288	126086	41.339	ug/mlm
37)	n-C32	31.285	124527	40.387	ug/mlm
38)	n-C33	32.257	117600	40.350	ug/mlm
39)	n-C34	33.200	120390	40.503	ug/mlm
40)	n-C35	34.128	118796	40.259	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252F.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 18:40:47
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:50:08 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:45:46 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.147	122271	40.199	ug/mlm
42)	n-C37	36.314	118602	41.351	ug/mlm
43)	n-C38	37.669	116261	40.365	ug/mlm
44)	n-C39	39.253	115121	40.445	ug/mlm
45)	n-C40	41.108	113247	40.053	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

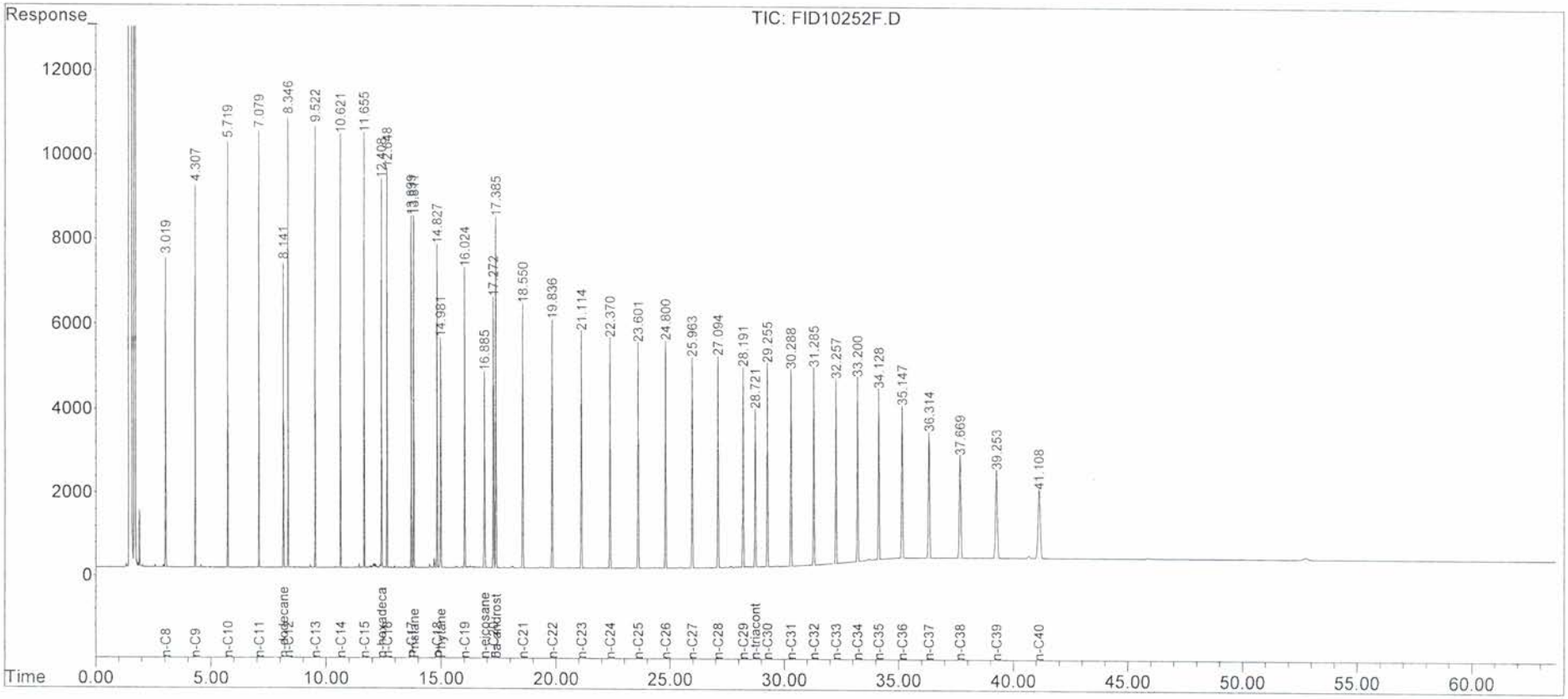
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252F.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 18:40:47
Operator : Meghan Dailey
Sample : AL-WKC4-40-021
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 10:50:08 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:45:46 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252G.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 19:51:03
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 11:12:37 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:50:18 2014
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	12.411	271445	50.000	ug/mlm
16) I	5a-androstane	17.387	343146	50.040	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.142	268396	50.727	ug/mlm
23) S	n-eicosane-d42	16.888	288582	50.927	ug/mlm
34) S	n-triacontane-d62	28.724	262029	51.730	ug/mlm
	Target Compounds				
2)	n-C8	3.019	259501	47.995	ug/mlm
3)	n-C9	4.307	272037	48.436	ug/mlm
4)	n-C10	5.720	283517	48.519	ug/mlm
5)	n-C11	7.081	292189	48.801	ug/mlm
7)	n-C12	8.348	304582	48.838	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	9.525	311906	49.264	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.623	315779	49.068	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.657	322004	49.156	ug/mlm
15)	n-C16	12.651	323340	49.001	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.702	329385	49.296	ug/mlm
19)	Pristane	13.814	327882	49.190	ug/mlm
20)	n-C18	14.830	327246	49.419	ug/mlm
21)	Phytane	14.985	290544	50.651	ug/mlm
22)	n-C19	16.029	335255	50.898	ug/mlm
24)	n-C20	17.277	328739	49.366	ug/mlm
25)	n-C21	18.554	337007	49.440	ug/mlm
26)	n-C22	19.841	331840	49.268	ug/mlm
27)	n-C23	21.118	329712	49.303	ug/mlm
28)	n-C24	22.376	327879	49.363	ug/mlm
29)	n-C25	23.606	325831	49.267	ug/mlm
30)	n-C26	24.806	329233	49.176	ug/mlm
31)	n-C27	25.970	324168	49.220	ug/mlm
32)	n-C28	27.098	321273	49.102	ug/mlm
33)	n-C29	28.196	317743	49.177	ug/mlm
35)	n-C30	29.260	315946	48.957	ug/mlm
36)	n-C31	30.292	313819	50.339	ug/mlm
37)	n-C32	31.291	309445	49.122	ug/mlm
38)	n-C33	32.262	291213	48.900	ug/mlm
39)	n-C34	33.208	297348	48.976	ug/mlm
40)	n-C35	34.133	293508	48.731	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252G.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 19:51:03
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 11:12:37 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:50:18 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.154	302169	48.702	ug/mlm
42)	n-C37	36.324	293054	50.140	ug/mlm
43)	n-C38	37.677	287548	49.026	ug/mlm
44)	n-C39	39.262	284790	49.190	ug/mlm
45)	n-C40	41.129	282386	49.161	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

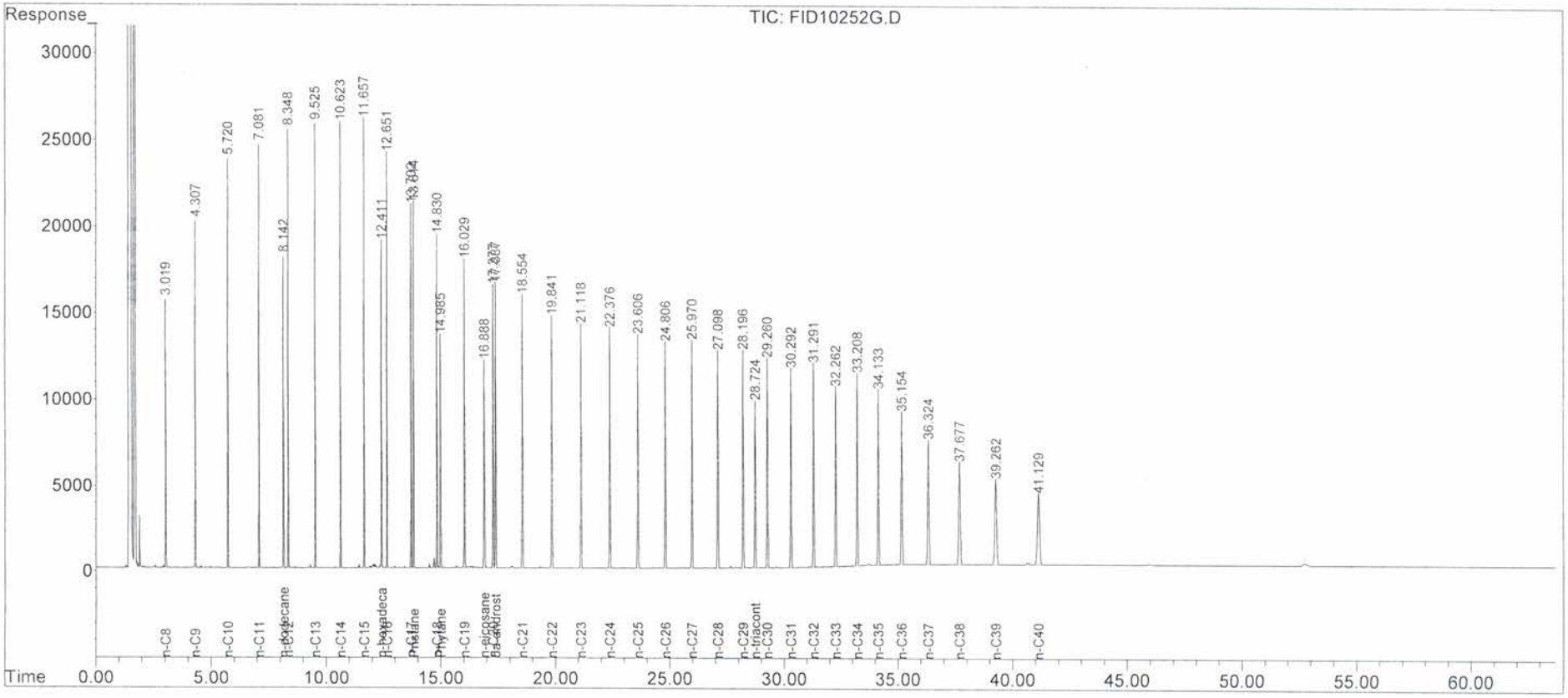
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252G.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 19:51:03
Operator : Meghan Dailey
Sample : AL-WKC5-50-021
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 11:12:37 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 10:50:18 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252H.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 21:01:27
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 11:20:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 11:13:08 2014
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	12.411	274403	50.000	ug/mlm
16) I	5a-androstane	17.390	341708	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.146	507791	94.982	ug/mlm
23) S	n-eicosane-d42	16.893	540229	95.600	ug/mlm
34) S	n-triacontane-d62	28.731	480535	95.136	ug/mlm
Target Compounds					
2)	n-C8	3.021	521840	95.416	ug/mlm
3)	n-C9	4.311	545483	96.081	ug/mlm
4)	n-C10	5.724	567031	96.032	ug/mlm
5)	n-C11	7.085	584044	96.550	ug/mlm
7)	n-C12	8.353	608148	96.515	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	9.529	620427	96.959	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.628	626695	96.348	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.662	637497	96.285	ug/mlm
15)	n-C16	12.656	640885	96.112	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.707	651732	97.893	ug/mlm
19)	Pristane	13.820	647639	97.480	ug/mlm
20)	n-C18	14.836	647431	98.094	ug/mlm
21)	Phytane	14.991	575206	100.663	ug/mlm
22)	n-C19	16.035	662668	100.936	ug/mlm
24)	n-C20	17.284	648053	97.628	ug/mlm
25)	n-C21	18.562	664601	97.793	ug/mlm
26)	n-C22	19.848	651376	96.962	ug/mlm
27)	n-C23	21.127	647723	97.110	ug/mlm
28)	n-C24	22.383	643564	97.163	ug/mlm
29)	n-C25	23.614	637904	96.729	ug/mlm
30)	n-C26	24.813	642394	96.224	ug/mlm
31)	n-C27	25.979	630566	95.992	ug/mlm
32)	n-C28	27.108	623971	95.672	ug/mlm
33)	n-C29	28.205	614147	95.307	ug/mlm
35)	n-C30	29.269	608960	94.767	ug/mlm
36)	n-C31	30.299	602719	97.060	ug/mlm
37)	n-C32	31.298	594641	94.840	ug/mlm
38)	n-C33	32.268	557441	94.062	ug/mlm
39)	n-C34	33.213	569647	94.338	ug/mlm
40)	n-C35	34.143	562877	94.061	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252H.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 21:01:27
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 11:20:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 11:13:08 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.166	580217	94.210	ug/mlm
42)	n-C37	36.334	565101	97.474	ug/mlm
43)	n-C38	37.688	555934	95.596	ug/mlm
44)	n-C39	39.283	551957	96.266	ug/mlm
45)	n-C40	41.152	548668	96.509	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

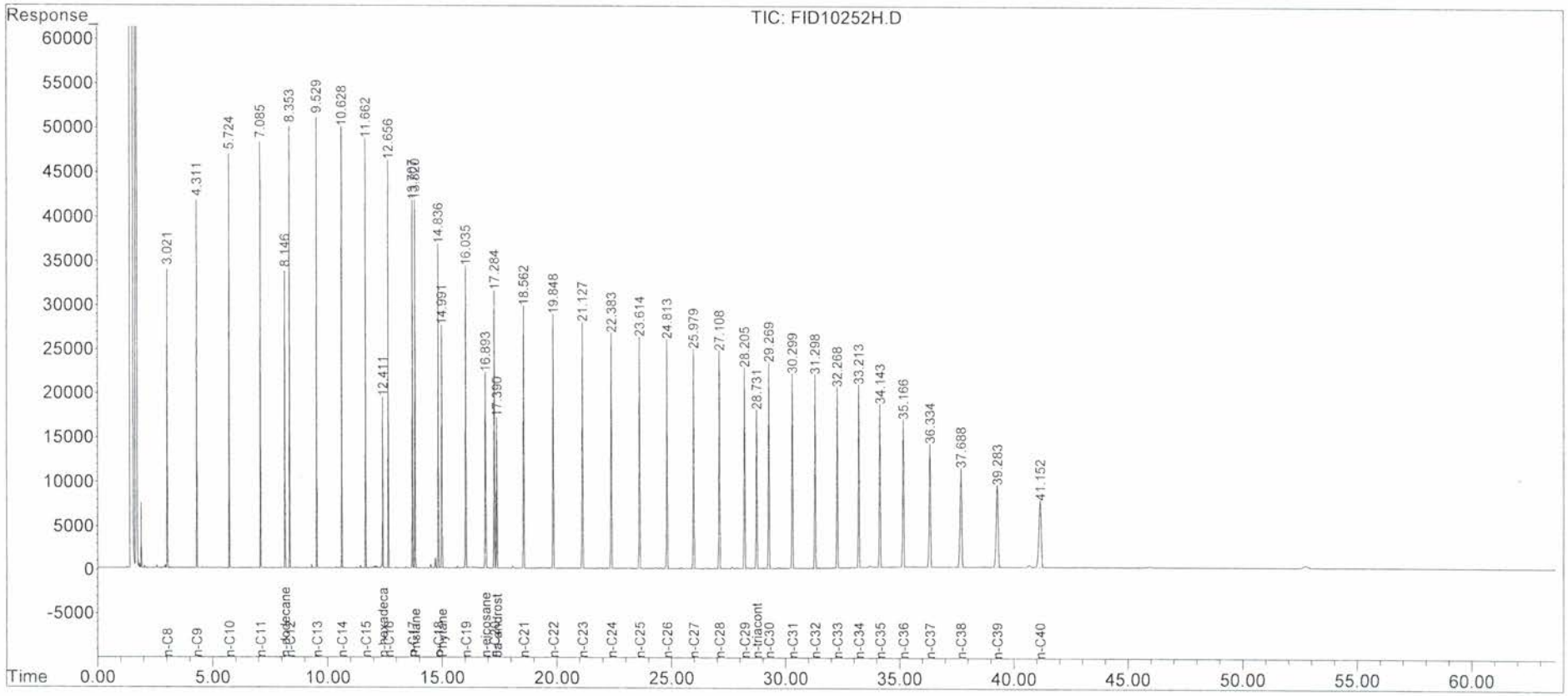
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252H.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 21:01:27
Operator : Meghan Dailey
Sample : AL-WKC6-100-003
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 11:20:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 11:13:08 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252I.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 22:11:57
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:52:34 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	0.995	1.038	-4.3	106	0.00
3		n-C9	1.033	1.121	-8.5	110	0.00
4		n-C10	1.074	1.185	-10.3	112	0.00
5		n-C11	1.100	1.227	-11.5	112	0.00
6	S	n-dodecane-d26	0.973	0.939	3.5	98	0.00
7		n-C12	1.147	1.262	-10.0	110	0.00
10		n-C13	1.165	1.292	-10.9	111	0.00
12		n-C14	1.184	1.328	-12.2	112	0.00
14		n-C15	1.206	1.366	-13.3	113	0.00
15		n-C16	1.215	1.392	-14.6	114	0.00
16	I	5a-androstane	1.000	1.000	0.0	99	0.00
18		n-C17	0.975	1.101	-12.9	112	0.00
19		Pristane	0.973	1.094	-12.4	111	0.00
20		n-C18	0.967	1.106	-14.4	113	0.00
21		Phytane	0.837	0.841	-0.5	99	0.00
22		n-C19	0.962	1.082	-12.5	112	0.00
23	S	n-eicosane-d42	0.828	0.830	-0.2	100	0.00
24		n-C20	0.973	1.103	-13.4	112	0.00
25		n-C21	0.996	1.124	-12.9	111	0.00
26		n-C22	0.985	1.116	-13.3	113	0.00
27		n-C23	0.978	1.105	-13.0	112	0.00
28		n-C24	0.971	1.096	-12.9	112	0.00
29		n-C25	0.967	1.007	-4.1	103	0.00
30		n-C26	0.978	1.101	-12.6	112	0.00
31		n-C27	0.963	1.093	-13.5	112	0.00
32		n-C28	0.955	1.084	-13.5	112	0.00
33		n-C29	0.943	1.067	-13.1	112	0.00
34	S	n-triacontane-d62	0.739	0.739	0.0	100	0.00
35		n-C30	0.940	1.064	-13.2	112	0.00
36		n-C31	0.908	0.998	-9.9	109	0.00
37		n-C32	0.916	1.015	-10.8	109	0.00
38		n-C33	0.866	0.956	-10.4	109	0.00
39		n-C34	0.882	0.969	-9.9	109	0.00
40		n-C35	0.873	0.939	-7.6	106	0.00
41		n-C36	0.898	0.956	-6.5	105	0.00
42		n-C37	0.845	0.809	4.3	95	0.00
43		n-C38	0.848	0.786	7.3	91	0.00

44	n-C39	0.835	0.741	11.3	87	0.00
45	n-C40	0.828	0.727	12.2	86	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0#	-8.54#
9	i-14	0.019	0.000	100.0#	0#	-9.24#
11	i-15	0.019	0.000	100.0#	0#	-10.40#
13	i-16	0.019	0.000	100.0#	0#	-11.32#
17	i-18	0.019	0.000	100.0#	0#	-13.18#
46	TPH	0.018	0.000	100.0#	0#	-27.84#
47	TRH1	0.018	0.000	100.0#	0#	-7.42#
48	TRH2	0.018	0.000	100.0#	0#	-15.26#
49	TRH3	0.018	0.000	100.0#	0#	-22.40#
50	TRH4	0.018	0.000	100.0#	0#	-27.21#
51	TRH5	0.018	0.000	100.0#	0#	-31.98#
52	TRH6	0.018	0.000	100.0#	0#	-42.97#
53	GRO	0.018	0.000	100.0#	0#	-5.05#
54	DRO	0.018	0.000	100.0#	0#	-13.71#
55	RRO	0.018	0.000	100.0#	0#	-31.63#

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

FID1C08FRONT101514.M Wed Oct 15 12:52:50 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252I.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 22:11:57
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:52:34 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.409	262219	50.000	ug/mlm
16)	I 5a-androstane	17.386	331603	50.040	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.140	123061	24.121	ug/mlm
23)	S n-eicosane-d42	16.884	136693	24.903	ug/mlm
34)	S n-triacontane-d62	28.718	124347	25.383	ug/mlm
	Target Compounds				
2)	n-C8	3.017	136412	26.143	ug/mlm
3)	n-C9	4.306	147666	27.258	ug/mlm
4)	n-C10	5.719	155387	27.588	ug/mlm
5)	n-C11	7.080	161159	27.924	ug/mlm
7)	n-C12	8.346	165456	27.514	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	9.523	170229	27.871	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.621	174107	28.037	ug/mlm
13)	i-16	0.000	0	N.D.	ug/ml
14)	n-C15	11.654	179614	28.409	ug/mlm
15)	n-C16	12.648	182667	28.679	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.699	183268	28.363	ug/mlm
19)	Pristane	13.811	181788	28.188	ug/mlm
20)	n-C18	14.826	184183	28.738	ug/mlm
21)	Phytane	14.983	143763	25.906	ug/mlm
22)	n-C19	16.024	185925	29.159	ug/mlm
24)	n-C20	17.271	183368	28.438	ug/mlm
25)	n-C21	18.549	187091	28.343	ug/mlm
26)	n-C22	19.835	185255	28.378	ug/mlm
27)	n-C23	21.111	183454	28.305	ug/mlm
28)	n-C24	22.369	182188	28.307	ug/mlm
29)	n-C25	23.598	167412	26.131	ug/mlm
30)	n-C26	24.799	182661	28.174	ug/mlm
31)	n-C27	25.962	181341	28.431	ug/mlm
32)	n-C28	27.094	179755	28.394	ug/mlm
33)	n-C29	28.189	177036	28.316	ug/mlm
35)	n-C30	29.253	176426	28.315	ug/mlm
36)	n-C31	30.285	169919	28.237	ug/mlm
37)	n-C32	31.284	168914	27.816	ug/mlm
38)	n-C33	32.256	158366	27.603	ug/mlm
39)	n-C34	33.198	160844	27.523	ug/mlm
40)	n-C35	34.127	155668	26.898	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252I.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 22:11:57
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:52:34 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.147	158511	26.631	ug/mlm
42)	n-C37	36.312	138231	24.679	ug/mlm
43)	n-C38	37.666	130779	23.286	ug/mlm
44)	n-C39	39.249	123400	22.300	ug/mlm
45)	n-C40	41.113	120484	21.961	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

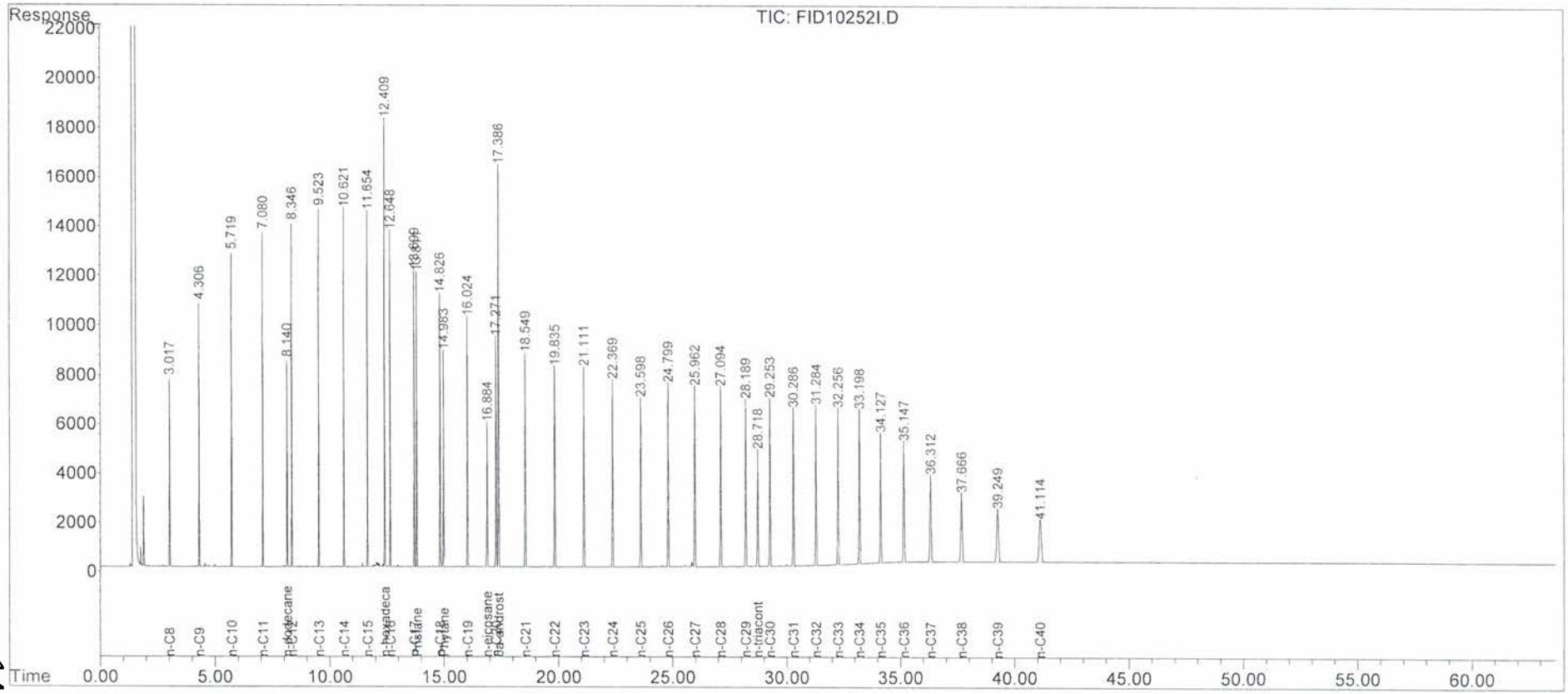
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252I.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 22:11:57
Operator : Meghan Dailey
Sample : AL-WKICV-25-005
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:52:34 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252J.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 23:22:26
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:58:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	0.995	0.963	3.2	99	0.00
3		n-C9	1.033	0.999	3.3	98	0.00
4		n-C10	1.074	1.041	3.1	98	0.00
5		n-C11	1.100	1.073	2.5	98	0.00
6	S	n-dodecane-d26	0.973	0.938	3.6	98	0.00
7		n-C12	1.147	1.122	2.2	98	0.00
10		n-C13	1.165	1.149	1.4	99	0.00
12		n-C14	1.184	1.175	0.8	99	0.00
14		n-C15	1.206	1.201	0.4	99	0.00
15		n-C16	1.215	1.214	0.1	99	0.00
16	I	5a-androstane	1.000	1.000	0.0	99	0.00
18		n-C17	0.975	0.973	0.2	100	0.00
19		Pristane	0.973	0.969	0.4	99	0.00
20		n-C18	0.967	0.966	0.1	99	0.00
21		Phytane	0.837	0.839	-0.2	99	0.00
22		n-C19	0.962	0.958	0.4	99	0.00
23	S	n-eicosane-d42	0.828	0.817	1.3	99	0.00
24		n-C20	0.973	0.973	0.0	99	0.00
25		n-C21	0.996	0.997	-0.1	99	0.00
26		n-C22	0.985	0.981	0.4	99	0.00
27		n-C23	0.978	0.975	0.3	99	0.00
28		n-C24	0.971	0.970	0.1	99	0.00
29		n-C25	0.967	0.963	0.4	99	0.00
30		n-C26	0.978	0.976	0.2	99	0.00
31		n-C27	0.963	0.959	0.4	99	0.00
32		n-C28	0.955	0.953	0.2	99	0.00
33		n-C29	0.943	0.940	0.3	99	0.00
34	S	n-triacontane-d62	0.739	0.727	1.6	99	0.00
35		n-C30	0.940	0.937	0.3	99	0.00
36		n-C31	0.908	0.908	0.0	99	0.00
37		n-C32	0.916	0.919	-0.3	100	0.00
38		n-C33	0.866	0.868	-0.2	100	0.00
39		n-C34	0.882	0.887	-0.6	100	0.00
40		n-C35	0.873	0.877	-0.5	100	0.00
41		n-C36	0.898	0.905	-0.8	100	0.00
42		n-C37	0.845	0.853	-0.9	100	0.00
43		n-C38	0.848	0.856	-0.9	100	0.00

44	n-C39	0.835	0.848	-1.6	100	0.00
45	n-C40	0.828	0.842	-1.7	100	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0#	-8.54#
9	i-14	0.019	0.000	100.0#	0#	-9.24#
11	i-15	0.019	0.000	100.0#	0#	-10.40#
13	i-16	0.019	0.000	100.0#	0#	-11.32#
17	i-18	0.019	0.000	100.0#	0#	-13.18#
46	TPH	0.018	0.000	100.0#	0#	-27.84#
47	TRH1	0.018	0.000	100.0#	0#	-7.42#
48	TRH2	0.018	0.000	100.0#	0#	-15.26#
49	TRH3	0.018	0.000	100.0#	0#	-22.40#
50	TRH4	0.018	0.000	100.0#	0#	-27.21#
51	TRH5	0.018	0.000	100.0#	0#	-31.98#
52	TRH6	0.018	0.000	100.0#	0#	-42.97#
53	GRO	0.018	0.000	100.0#	0#	-5.05#
54	DRO	0.018	0.000	100.0#	0#	-13.71#
55	RRO	0.018	0.000	100.0#	0#	-31.63#

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

FID1C08FRONT101514.M Wed Oct 15 12:58:34 2014

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252J.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 23:22:26
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:58:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
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	12.410	262725	50.000	ug/mlm
16) I	5a-androstane	17.387	332916	50.040	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.140	123266	24.114	ug/mlm
23) S	n-eicosane-d42	16.884	135056	24.507	ug/mlm
34) S	n-triacontane-d62	28.719	122771	24.962	ug/mlm
Target Compounds					
2)	n-C8	3.019	126764	24.247	ug/mlm
3)	n-C9	4.307	131807	24.284	ug/mlm
4)	n-C10	5.720	136700	24.224	ug/mlm
5)	n-C11	7.080	141223	24.423	ug/mlm
7)	n-C12	8.347	147449	24.472	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	9.523	151664	24.784	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.622	154397	24.815	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.654	158150	24.966	ug/mlm
15)	n-C16	12.648	159624	25.012	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.699	162694	25.079	ug/mlm
19)	Pristane	13.811	161702	24.975	ug/mlm
20)	n-C18	14.826	161516	25.102	ug/mlm
21)	Phytane	14.982	144001	25.846	ug/mlm
22)	n-C19	16.024	165256	25.815	ug/mlm
24)	n-C20	17.272	162298	25.071	ug/mlm
25)	n-C21	18.549	166601	25.139	ug/mlm
26)	n-C22	19.834	163478	24.944	ug/mlm
27)	n-C23	21.113	162510	24.975	ug/mlm
28)	n-C24	22.369	161930	25.060	ug/mlm
29)	n-C25	23.600	160647	24.976	ug/mlm
30)	n-C26	24.799	162569	24.976	ug/mlm
31)	n-C27	25.961	159724	24.943	ug/mlm
32)	n-C28	27.093	158658	24.962	ug/mlm
33)	n-C29	28.189	156473	24.928	ug/mlm
35)	n-C30	29.251	155993	24.937	ug/mlm
36)	n-C31	30.282	155174	25.685	ug/mlm
37)	n-C32	31.285	153509	25.180	ug/mlm
38)	n-C33	32.255	144413	25.072	ug/mlm
39)	n-C34	33.200	147834	25.197	ug/mlm
40)	n-C35	34.127	145855	25.103	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252J.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 23:22:26
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:58:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.146	150628	25.207	ug/mlm
42)	n-C37	36.312	146362	26.028	ug/mlm
43)	n-C38	37.663	142962	25.355	ug/mlm
44)	n-C39	39.247	141681	25.503	ug/mlm
45)	n-C40	41.114	140196	25.454	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

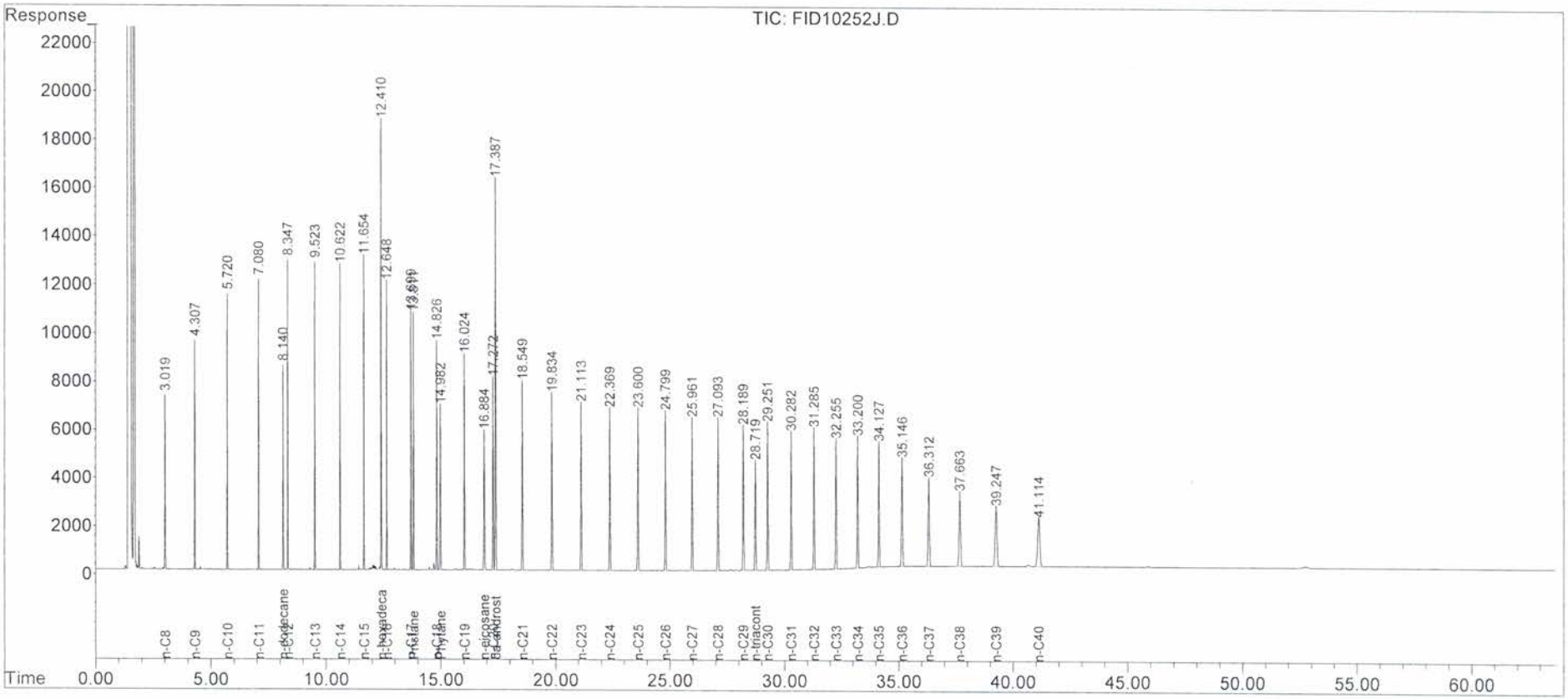
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\
Data File : FID10252J.D
Signal(s) : FID1A.CH
Acq On : 14-Oct-2014, 23:22:26
Operator : Meghan Dailey
Sample : AL-WKCC-25-030
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 15 12:58:06 2014
Quant Method : P:\2014\J14000\ALI\MSD Chem Data\FID 1\FID10252\FID1C08FRONT101514.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Oct 15 12:40:43 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Aliphatic Mass Discrimination Ratio

Arcadis Mayflower AR Client Project # B0086022.1401

Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data

Mass Discrimination

File Name	Sample Name	n-C20 (Area)	n-C36 (Area)	n-C36/n-C20 ratio	Q
FID10252C.D	AL-WKC1-1.25-021	8537	7742	0.91	
FID10252D.D	AL-WKC2-10-021	64607	60394	0.93	
FID10252E.D	AL-WKC3-25-021	163469	150631	0.92	
FID10252F.D	AL-WKC4-40-021	129218	122271	0.95	
FID10252G.D	AL-WKC5-50-021	328739	302169	0.92	
FID10252H.D	AL-WKC6-100-003	648053	580217	0.90	
FID10252I.D	AL-WKICV-25-005	183368	158511	0.86	
FID10252J.D	AL-WKCC-25-030	162298	150628	0.93	
FID10256B.D	AL-WKCC-25-030	158280	145288	0.92	
FID10256G.D	AL-WKCC-25-030	158380	146651	0.93	

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

Aliphatic Internal Standard Area Data

B&B Laboratories
Project J13034
Report 14-3319

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

Client Project # B0086022.1401

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)
FID10252E.D	**AL-WKC3-25-021**	**264410**	**132205**	**528820**	**335506**	**167753**	**671012**
FID10252I.D	**AL-WKICV-25-005**	**262219**	**131110**	**524438**	**331603**	**165802**	**663206**
FID10252J.D	**AL-WKCC-25-030**	**262725**	**131363**	**525450**	**332916**	**166458**	**665832**
FID10256B.D	**AL-WKCC-25-030**	**257467**	**128734**	**514934**	**323679**	**161840**	**647358**
FID10256C.D	AL-SRM2779-20-003	245953			359372		
FID10256F.D	Al-WKPEM-003	262071			328159		
ENV3351A.D	Method Blank	239334			300721		
ENV3351B.D	Blank Spike	221566			278301		
ENV3351C.D	Blank Spike Dup	236344			297010		
ARC2059.D	SHN-Cove-010(NB)102014	236752			298700		
FID10256G.D	**AL-WKCC-25-030**	**258023**	**129012**	**516046**	**323959**	**161980**	**647918**

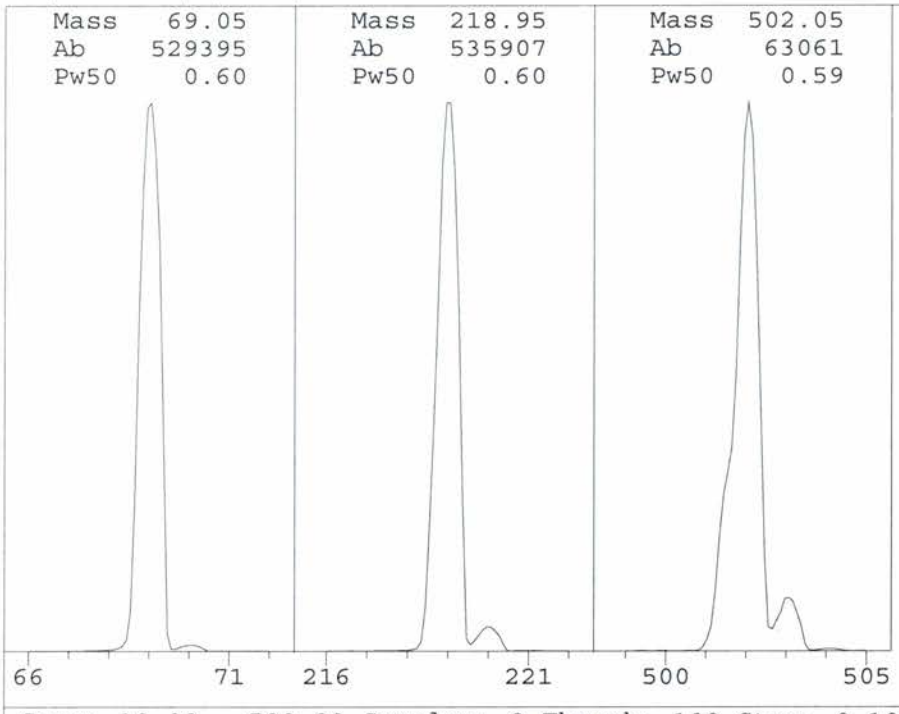
Polycyclic Aromatic Hydrocarbon
Initial Calibration Data
and
Initial Calibration Verification Data

PAH ICAL
AR 60210.M

GC/MS 6
(PAH2014A)

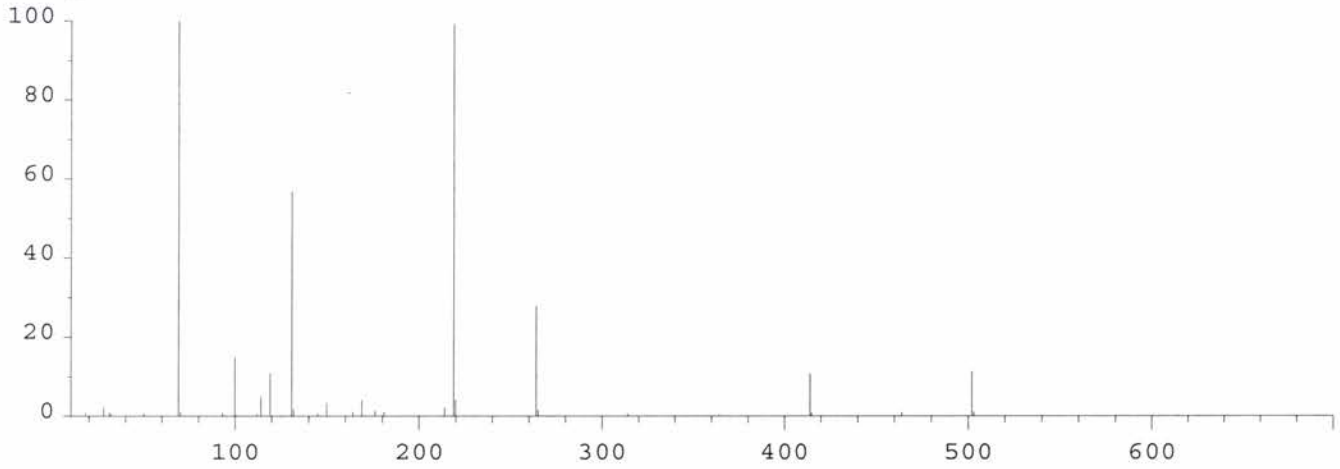
5973 Autotune

Tue Nov 04 07:28:41 2014 Instrument: GCMS6
C:\MSDCHEM\1\5973\atune.u



Ion Pol	POS	MassGain	240
		MassOffs	-11
Emission	34.6	AmuGain	2297
EIEnrgy	69.9	AmuOffs	125
Filament	1	Wid219	-0.034
		DC Pol	POS
Repeller	29.45		
IonFcus	80.7	HEDEnab	ON
EntLens	14.5	EMVolts	1341
EntOffs	20.08		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
107 peaks Base: 69.05 Abundance: 478656



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	478656	100.00	70.05	5187	1.08
218.95	475328	99.30	219.95	20136	4.24
502.05	54728	11.43	503.05	5565	10.17

Air/Water Check: H20~0.93% N2~2.27% O2~0.71% CO2~0.08% N2/H2O~243.54%

Column Flow: Front: 2.632 Back: 0 ml/min. Interface Temp: GCCF 4,0

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 53959
Repeller Maximum 35 volts using ion 219;

MassGain Values @Samples: 240@3 240@2 240@1 240@0 240@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	125.0	125.0	125.0	125.0	125.0	125.0	125.0
Entrance Lens Offset:	20.1	20.1	20.1	20.1	20.1	20.1	20.1

MS60210

Response Factor Report GCMS6

Method Path : C:\GCMS6\MS60210\
Method File : AR60210.M
Title : PAH Calibration Table-2013A
Last Update : Wed Nov 05 07:05:49 2014
Response Via : Initial Calibration

Calibration Files
1 =MS60210B.D 2 =MS60210C.D 3 =MS60210D.D 4 =MS60210E.D
5 =MS60210F.D 6 =MS60210G.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorene-d10	----------ISTD----------							
2)	S	Naphthalene-d8	1.385	1.454	1.468	1.517	1.564	1.564	1.492	4.69
3)	T	cis/trans Decalin	0.378	0.359	0.357	0.353	0.360	0.352	0.360	2.64
4)	un	C1-Decalins	0.378	0.359	0.357	0.353	0.360	0.352	0.360	2.64
5)	un	C2-Decalins	0.378	0.359	0.357	0.353	0.360	0.352	0.360	2.64
6)	un	C3-Decalins	0.378	0.359	0.357	0.353	0.360	0.352	0.360	2.64
7)	un	C4-Decalins	0.378	0.359	0.357	0.353	0.360	0.352	0.360	2.64
8)	T	Naphthalene	1.657	1.719	1.729	1.789	1.841	1.833	1.761	4.09
9)	T	2-Methylnaphth...	1.243	1.323	1.325	1.370	1.433	1.478	1.362	6.19
10)	T	1-Methylnaphth...	1.056	1.094	1.103	1.143	1.182	1.191	1.128	4.70
11)	T	2,6-Dimethylna...	1.067	1.123	1.143	1.186	1.243	1.280	1.174	6.70
12)	T	1,6,7-Trimethy...	1.078	1.096	1.110	1.155	1.212	1.253	1.151	6.05
13)	un	C2-Naphthalenes	1.657	1.719	1.729	1.789	1.841	1.833	1.761	4.09
14)	un	C3-Naphthalenes	1.657	1.719	1.729	1.789	1.841	1.833	1.761	4.09
15)	un	C4-Naphthalenes	1.657	1.719	1.729	1.789	1.841	1.833	1.761	4.09
16)	T	Benzothiophene	1.316	1.388	1.397	1.446	1.485	1.477	1.418	4.52
17)	un	C1-Benzothioph...	1.316	1.388	1.397	1.446	1.485	1.477	1.418	4.52
18)	un	C2-Benzothioph...	1.316	1.388	1.397	1.446	1.485	1.477	1.418	4.52
19)	un	C3-Benzothioph...	1.316	1.388	1.397	1.446	1.485	1.477	1.418	4.52
20)	un	C4-Benzothioph...	1.316	1.388	1.397	1.446	1.485	1.477	1.418	4.52
21)	S	Acenaphthene-d10	0.891	0.931	0.935	0.971	1.012	1.031	0.962	5.50
22)	T	Biphenyl	1.509	1.589	1.608	1.668	1.733	1.763	1.645	5.77
23)	T	Acenaphthylene	1.744	1.779	1.789	1.849	1.947	2.094	1.867	7.08
24)	T	Acenaphthene	1.039	1.077	1.095	1.135	1.189	1.212	1.125	5.97
25)	T	Dibenzofuran	1.851	1.914	1.973	2.046	2.135	2.190	2.018	6.44
26)	T	Fluorene	1.328	1.384	1.406	1.456	1.519	1.570	1.444	6.20
27)	T	1-Methylfluorene	0.781	0.824	0.834	0.858	0.902	0.952	0.858	7.05
28)	un	C1-Fluorenes	1.328	1.384	1.406	1.456	1.519	1.570	1.444	6.20
29)	un	C2-Fluorenes	1.328	1.384	1.406	1.456	1.519	1.570	1.444	6.20
30)	un	C3-Fluorenes	1.328	1.384	1.406	1.456	1.519	1.570	1.444	6.20
31)	I	Pyrene-d10	----------ISTD----------							
32)	S	Phenanthrene-d10	0.825	0.857	0.884	0.922	0.976	1.009	0.912	7.74
33)	T	Carbazole	0.879	0.960	1.035	1.045	1.124	1.215	1.043	11.34
34)	T	Dibenzothiophene	0.996	1.064	1.093	1.141	1.204	1.254	1.126	8.38
35)	T	4-Methyldibenz...	0.684	0.718	0.740	0.774	0.819	0.846	0.763	8.07
36)	un	2/3-Methyldibe...	0.684	0.718	0.740	0.774	0.819	0.846	0.763	8.07
37)	un	1-Methyldibenz...	0.684	0.718	0.740	0.774	0.819	0.846	0.763	8.07
38)	un	C2-Dibenzothio...	0.996	1.064	1.093	1.141	1.204	1.254	1.126	8.38
39)	un	C3-Dibenzothio...	0.996	1.064	1.093	1.141	1.204	1.254	1.126	8.38
40)	un	C4-Dibenzothio...	0.996	1.064	1.093	1.141	1.204	1.254	1.126	8.38
41)	T	Phenanthrene	0.978	1.070	1.115	1.168	1.235	1.273	1.140	9.55
42)	T	Anthracene	0.925	0.999	1.031	1.088	1.165	1.247	1.076	10.83
43)	un	3-Methylphenan...	0.791	0.839	0.859	0.897	0.953	1.005	0.891	8.79
44)	un	2-Methylphenan...	0.791	0.839	0.859	0.897	0.953	1.005	0.891	8.79
45)	un	2-Methylanthra...	0.791	0.839	0.859	0.897	0.953	1.005	0.891	8.79
46)	un	4/9-Methylphen...	0.791	0.839	0.859	0.897	0.953	1.005	0.891	8.79
47)	T	1-Methylphenan...	0.791	0.839	0.859	0.897	0.953	1.005	0.891	8.79
48)	T	3,6-Dimethylph...	0.713	0.736	0.752	0.782	0.832	0.869	0.781	7.68
49)	T	Retene	0.386	0.399	0.406	0.424	0.452	0.482	0.425	8.46
50)	un	C2-Phenanthren...	0.978	1.070	1.115	1.168	1.235	1.273	1.140	9.55
51)	un	C3-Phenanthren...	0.978	1.070	1.115	1.168	1.235	1.273	1.140	9.55
52)	un	C4-Phenanthren...	0.978	1.070	1.115	1.168	1.235	1.273	1.140	9.55
53)	T	Naphthobenzoth...	1.072	1.125	1.143	1.194	1.275	1.384	1.199	9.48
54)	un	C1-Naphthobenz...	1.072	1.125	1.143	1.194	1.275	1.384	1.199	9.48
55)	un	C2-Naphthobenz...	1.072	1.125	1.143	1.194	1.275	1.384	1.199	9.48
56)	un	C3-Naphthobenz...	1.072	1.125	1.143	1.194	1.275	1.384	1.199	9.48

Method Path : C:\GCMS6\MS60210\
Method File : AR60210.M
Title : PAH Calibration Table-2013A

57)	un	C4-Naphthobenz...	1.072	1.125	1.143	1.194	1.275	1.384	1.199	9.48
58)	T	Fluoranthene	1.157	1.212	1.240	1.297	1.370	1.493	1.295	9.39
59)	T	Pyrene	1.285	1.339	1.356	1.409	1.494	1.581	1.411	7.74
60)	T	2-Methylfluora...	0.771	0.807	0.823	0.857	0.913	0.978	0.858	8.85
61)	T	Benzo(b)fluorene	0.753	0.780	0.799	0.841	0.901	0.993	0.844	10.57
62)	un	C1-Fluoranthen...	1.157	1.212	1.240	1.297	1.370	1.493	1.295	9.39
63)	un	C2-Fluoranthen...	1.157	1.212	1.240	1.297	1.370	1.493	1.295	9.39
64)	un	C3-Fluoranthen...	1.157	1.212	1.240	1.297	1.370	1.493	1.295	9.39
65)	un	C4-Fluoranthen...	1.157	1.212	1.240	1.297	1.370	1.493	1.295	9.39
66)	S	Chrysene-d12	0.986	1.046	1.081	1.149	1.225	1.290	1.129	10.11
67)	T	Benz(a)anthracene	1.172	1.199	1.197	1.289	1.355	1.516	1.288	10.19
68)	T	Chrysene/Triph...	1.157	1.212	1.244	1.351	1.428	1.524	1.319	10.64
69)	un	C1-Chrysenes	1.157	1.212	1.244	1.351	1.428	1.524	1.319	10.64
70)	un	C2-Chrysenes	1.157	1.212	1.244	1.351	1.428	1.524	1.319	10.64
71)	un	C3-Chrysenes	1.157	1.212	1.244	1.351	1.428	1.524	1.319	10.64
72)	un	C4-Chrysenes	1.157	1.212	1.244	1.351	1.428	1.524	1.319	10.64
73)	I	Benzo(a)pyrene-d12	----------ISTD----------							
74)	un	C29-Hopane	0.525	0.529	0.524	0.526	0.542	0.541	0.531	1.55
75)	un	18a-Oleanane	0.525	0.529	0.524	0.526	0.542	0.541	0.531	1.55
76)	T	C30-Hopane	0.525	0.529	0.524	0.526	0.542	0.541	0.531	1.55
77)	T	Benzo(b)fluora...	1.300	1.381	1.405	1.449	1.534	1.620	1.448	7.89
78)	T	Benzo(k,j)fluo...	1.351	1.432	1.463	1.495	1.615	1.765	1.520	9.71
79)	un	Benzo(a)fluora...	1.351	1.432	1.463	1.495	1.615	1.765	1.520	9.71
80)	T	Benzo(e)pyrene	1.501	1.581	1.561	1.608	1.702	1.781	1.622	6.28
81)	T	Benzo(a)pyrene	1.238	1.303	1.329	1.381	1.476	1.588	1.386	9.19
82)	T	Indeno(1,2,3-c...	1.403	1.519	1.556	1.630	1.755	1.891	1.625	10.76
83)	T	Dibenzo(a,h)an...	1.137	1.215	1.260	1.322	1.436	1.569	1.323	11.87
84)	un	C1-Dibenzo(a,h...	1.137	1.215	1.260	1.322	1.436	1.569	1.323	11.87
85)	un	C2-Dibenzo(a,h...	1.137	1.215	1.260	1.322	1.436	1.569	1.323	11.87
86)	un	C3-Dibenzo(a,h...	1.137	1.215	1.260	1.322	1.436	1.569	1.323	11.87
87)	T	Benzo(g,h,i)pe...	1.266	1.322	1.339	1.375	1.454	1.512	1.378	6.57
88)	S	Perylene-d12	1.071	1.133	1.158	1.202	1.285	1.344	1.199	8.40
89)	T	Perylene	1.440	1.487	1.521	1.594	1.710	1.799	1.592	8.69
90)	S	5(b)H-Cholane	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45
91)	un	C20-TAS	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45
92)	un	C21-TAS	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45
93)	un	C26(20S)-TAS	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45
94)	un	C26(20R)/C27(2...	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45
95)	un	C28(20S)-TAS	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45
96)	un	C27(20R)-TAS	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45
97)	un	C28(20R)-TAS	0.284	0.280	0.283	0.288	0.301	0.304	0.290	3.45

(#) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210B.D
Acq On : 4 Nov 2014 12:39 pm
Operator : YM
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 05 06:47:28 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:42:05 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.152	176	198802	251.05			0.00
31) Pyrene-d10	29.390	212	379931	250.63			0.00
73) Benzo(a)pyrene-d12	38.137	264	375378	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.541	136	21950	18.58			0.00
21) Acenaphthene-d10	19.383	164	14125	18.55			0.00
32) Phenanthrene-d10	24.494	188	25034	18.11			0.00
66) Chrysene-d12	33.590	240	29901	17.47			-0.02
88) Perylene-d12	38.448	264	32116m	17.91			0.00
90) 5(b)H-Cholane	33.977	217	8503	19.56			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.919	138	5932m	32.97			
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	13.606	128	25880	18.56			98
9) 2-Methylnaphthalene	15.853	142	19548	18.13			96
10) 1-Methylnaphthalene	16.181	142	16646	18.63			97
11) 2,6-Dimethylnaphthalene	17.943	156	16888	18.17			92
12) 1,6,7-Trimethylnaphtha...	20.797	170	17102m	119.15			
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	13.774	134	20776	18.50			100
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	17.411	154	23827	18.29			95
23) Acenaphthylene	18.894	152	27593	18.66			97
24) Acenaphthene	19.495	154	16549	18.58			91
25) Dibenzofuran	20.086	168	29263	18.31			100
26) Fluorene	21.259	166	20739	18.14			94
27) 1-Methylfluorene	23.249	180	12466	18.34			99
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	25.333	167	26581	16.81			100
34) Dibenzothiophene	24.144	184	29879	17.51		#	93
35) 4-Methyldibenzothiophene	25.640	198	20859	18.03			100
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	24.564	178	29566	17.11			100
42) Anthracene	24.746	178	28078	17.22			95
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210B.D
Acq On : 4 Nov 2014 12:39 pm
Operator : YM
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 05 06:47:28 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:42:05 2014
Response via : Initial Calibration

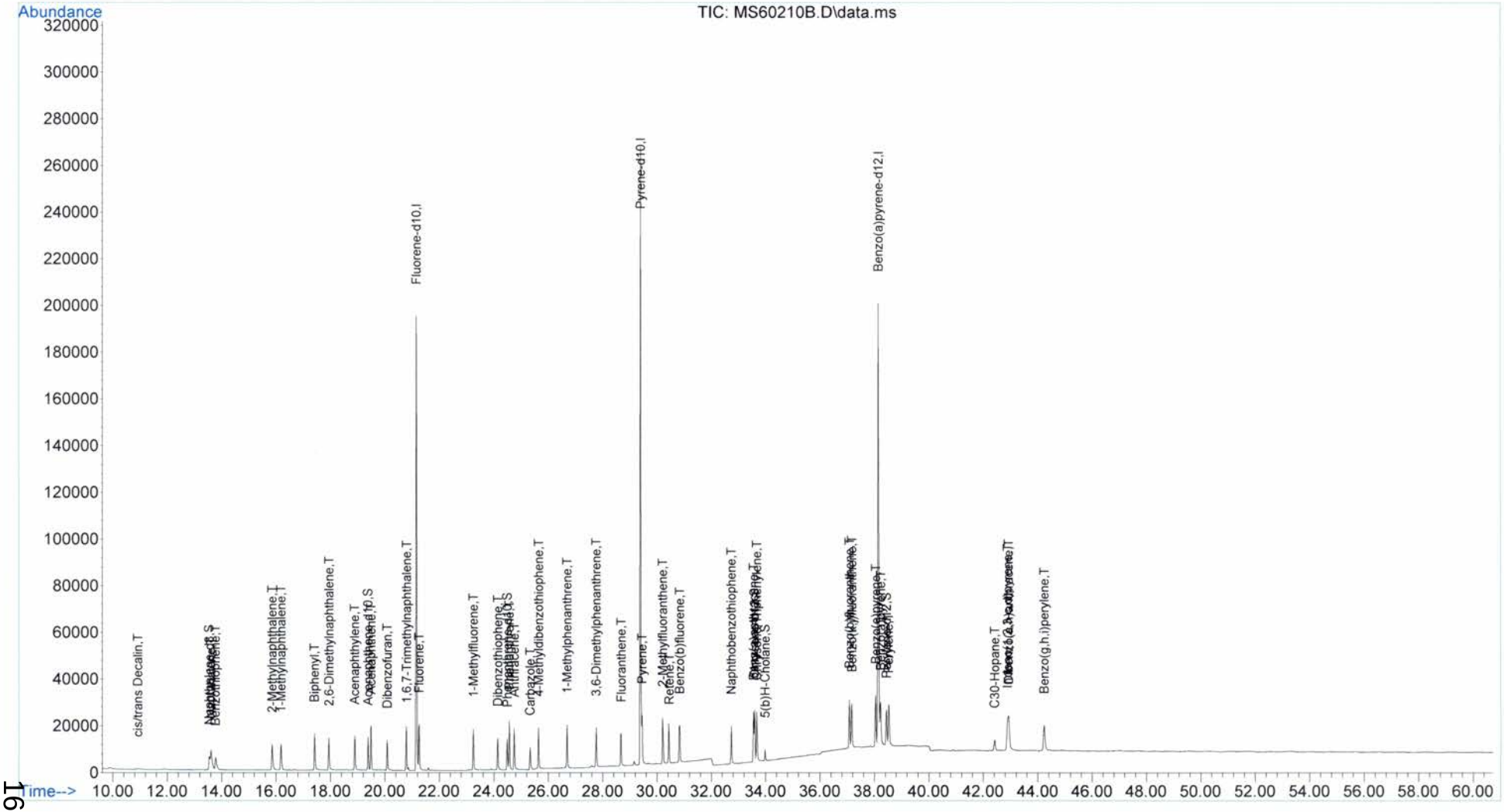
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.689	192	23807	17.64			95
48) 3,6-Dimethylphenanthrene	27.758	206	21651	18.30			99
49) Retene	30.450	234	11720	18.20		#	5
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
53) Naphthobenzothiophene	32.733	234	32690	17.99			100
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	28.676	202	35321	18.00		#	100
59) Pyrene	29.451	202	39013	18.25		#	100
60) 2-Methylfluoranthene	30.206	216	23395	17.99		#	100
61) Benzo(b)fluorene	30.838	216	22942	17.92			90
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	33.549	228	35176m	18.28			
68) Chrysene/Triphenylene	33.671	228	34761m	17.58			
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	42.422	191	15735	19.75			100
77) Benzo(b)fluoranthene	37.079	252	38823m	19.44			
78) Benzo(k,j)fluoranthene	37.170	252	40602m	19.60			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.046	252	45155m	18.68			
81) Benzo(a)pyrene	38.229	252	37101m	17.92			
82) Indeno(1,2,3-c,d)pyrene	42.887	276	42068	17.26			99
83) Dibenzo(a,h)anthracene	42.926	278	33840	17.05			88
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	44.231	276	37434	18.12			96
89) Perylene	38.521	252	43196	18.10		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210B.D
Acq On : 4 Nov 2014 12:39 pm
Operator : YM
Sample : PAH-WKC1-020-034
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 05 06:47:28 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:42:05 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210C.D
Acq On : 4 Nov 2014 1:49 pm
Operator : YM
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 05 06:53:39 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:47:47 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.151	176	204755	251.05		0.00
31) Pyrene-d10	29.390	212	386633	250.63		0.00
73) Benzo(a)pyrene-d12	38.138	264	375285	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.539	136	118607	104.98		0.00
21) Acenaphthene-d10	19.384	164	75960	104.49		0.00
32) Phenanthrene-d10	24.480	188	132330	103.97		-0.01
66) Chrysene-d12	33.590	240	161371	106.08		0.00
88) Perylene-d12	38.430	264	169851	105.82		-0.02
90) 5(b)H-Cholane	33.977	217	42052	98.94		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.917	138	28988m	93.94		
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	13.603	128	138210	102.25		98
9) 2-Methylnaphthalene	15.851	142	107177	105.72		95
10) 1-Methylnaphthalene	16.181	142	88808	103.08		95
11) 2,6-Dimethylnaphthalene	17.944	156	91522	105.13		84
12) 1,6,7-Trimethylnaphtha...	20.784	170	89571m	101.91		
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	13.771	134	112846	105.16		100
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	17.412	154	129233	105.01		92
23) Acenaphthylene	18.894	152	144912	101.88		97
24) Acenaphthene	19.482	154	88354	104.30		97
25) Dibenzofuran	20.073	168	155767	103.16		100
26) Fluorene	21.258	166	111298	102.75		93
27) 1-Methylfluorene	23.249	180	67733	106.30		84
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	25.319	167	147618	108.82		100
34) Dibenzothiophene	24.130	184	162363	105.62		99
35) 4-Methyldibenzothiophene	25.641	198	111500	105.73		100
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	24.564	178	164598	109.08		99
42) Anthracene	24.732	178	154224	108.06		98
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210C.D
Acq On : 4 Nov 2014 1:49 pm
Operator : YM
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 05 06:53:39 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:47:47 2014
Response via : Initial Calibration

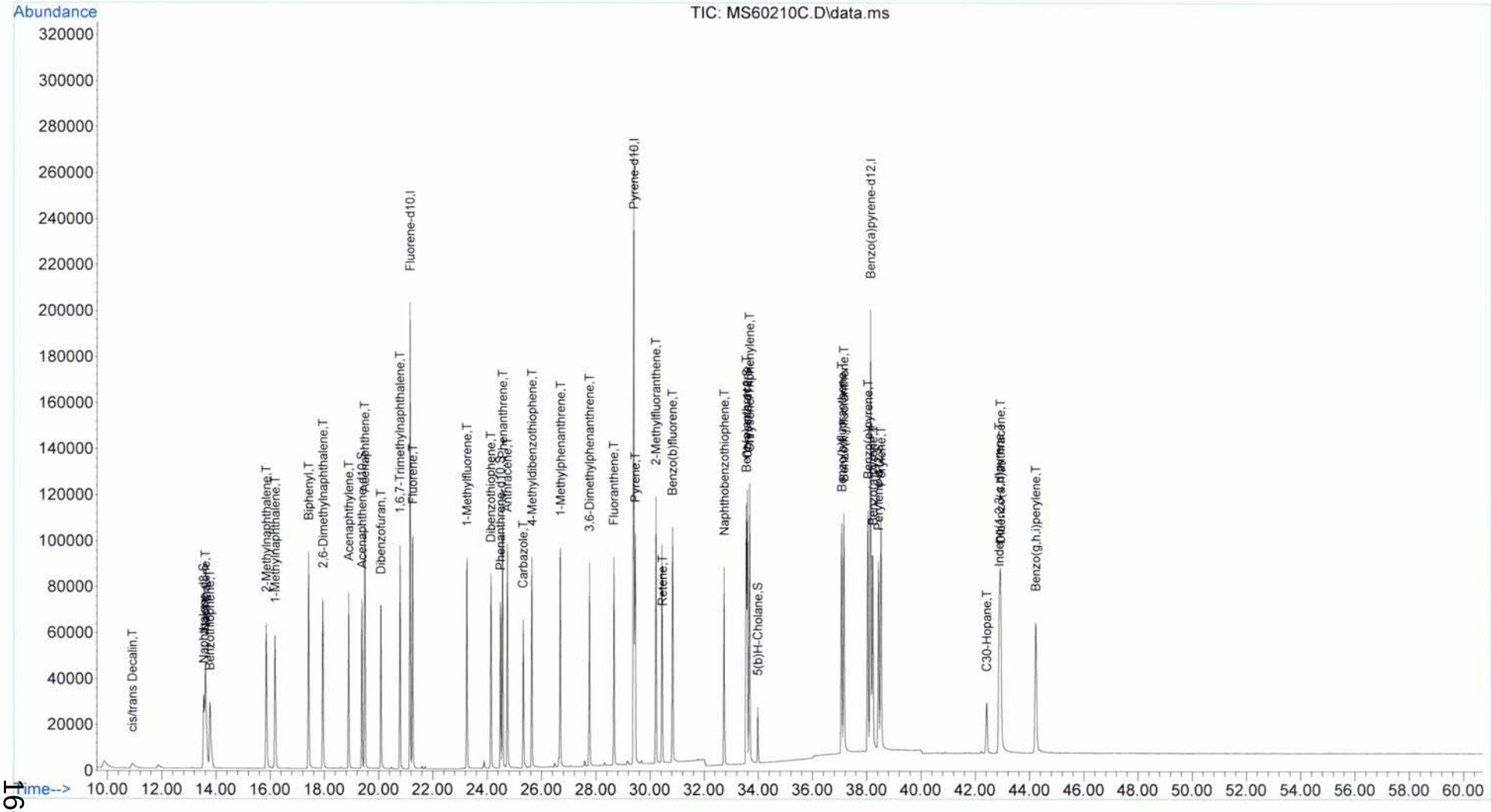
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.689	192	128531	105.36			93
48) 3,6-Dimethylphenanthrene	27.758	206	113747	103.48			93
49) Retene	30.450	234	61661	103.49		#	2
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.733	234	174459	105.46			100
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	28.656	202	188211	105.46		#	100
59) Pyrene	29.451	202	206731	104.25		#	100
60) 2-Methylfluoranthene	30.206	216	124550	104.73		#	100
61) Benzo(b)fluorene	30.817	216	120869	104.02			99
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	33.549	228	183160m	101.31			
68) Chrysene/Triphenylene	33.671	228	185282m	103.81			
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	42.422	191	79283	100.80			100
77) Benzo(b)fluoranthene	37.079	252	206156m	105.80			
78) Benzo(k,j)fluoranthene	37.152	252	215149m	106.22			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.047	252	237686m	105.62			
81) Benzo(a)pyrene	38.229	252	195138	105.11			100
82) Indeno(1,2,3-c,d)pyrene	42.874	276	227733	108.30			100
83) Dibenzo(a,h)anthracene	42.926	278	180765	106.01			90
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	44.218	276	195456	102.99			95
89) Perylene	38.521	252	222944	103.25		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210C.D
Acq On : 4 Nov 2014 1:49 pm
Operator : YM
Sample : PAH-WKC2-100-034
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 05 06:53:39 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:47:47 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210D.D
Acq On : 4 Nov 2014 2:59 pm
Operator : YM
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 05 06:58:02 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:54:17 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.153	176	212663	251.05			0.00
31) Pyrene-d10	29.389	212	399819	250.63			0.00
73) Benzo(a)pyrene-d12	38.137	264	386814	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.539	136	311038	258.69			0.00
21) Acenaphthene-d10	19.382	164	198040	256.62			0.00
32) Phenanthrene-d10	24.481	188	352683	262.85			0.00
66) Chrysene-d12	33.590	240	431126	266.00			0.00
88) Perylene-d12	38.429	264	447404	262.80			0.00
90) 5(b)H-Cholane	33.977	217	109199	250.59			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.916	138	74858m	239.70			
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	13.603	128	361005	252.47			98
9) 2-Methylnaphthalene	15.851	142	278613	256.32			94
10) 1-Methylnaphthalene	16.180	142	232485	255.22			96
11) 2,6-Dimethylnaphthalene	17.942	156	241738	260.54			84
12) 1,6,7-Trimethylnaphtha...	20.785	170	235531	255.83			82
13) C2-Naphthalenes	0.000		0	N.D.	d		
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.771	134	294923	257.56			100
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	17.411	154	339559	258.76			93
23) Acenaphthylene	18.893	152	378546	253.72			97
24) Acenaphthene	19.494	154	233309	260.38			90
25) Dibenzofuran	20.074	168	416961	261.47			100
26) Fluorene	21.247	166	293644	255.63			99
27) 1-Methylfluorene	23.250	180	177978	261.72		#	76
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	25.320	167	411600	280.58			100
34) Dibenzothiophene	24.131	184	431127	262.30			99
35) 4-Methyldibenzothiophene	25.639	198	296841	265.48			100
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	24.565	178	443346	271.36			99
42) Anthracene	24.733	178	411749	268.31			97
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210D.D
Acq On : 4 Nov 2014 2:59 pm
Operator : YM
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 05 06:58:02 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:54:17 2014
Response via : Initial Calibration

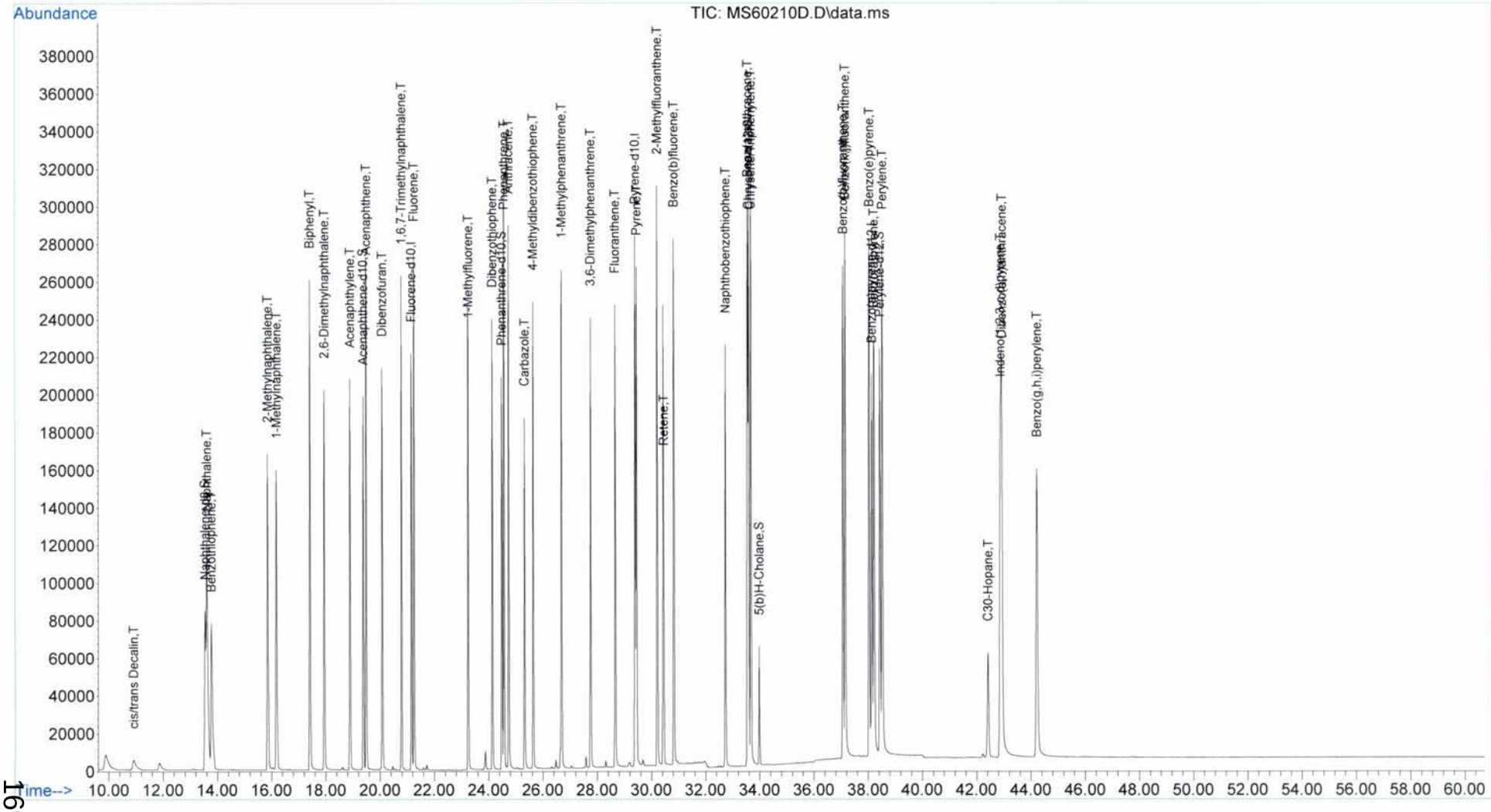
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.688	192	340083	261.60			94
48) 3,6-Dimethylphenanthrene	27.757	206	300506	260.13			95
49) Retene	30.449	234	162132	258.75		#	3
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.733	234	458441	261.60			100
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	28.655	202	498162	263.69		#	100
59) Pyrene	29.450	202	541276	258.59		#	100
60) 2-Methylfluoranthene	30.205	216	328740	261.27		#	100
61) Benzo(b)fluorene	30.816	216	320123	261.77			99
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	33.549	228	472450	249.79			97
68) Chrysene/Triphenylene	33.671	228	491647	260.20			98
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	42.422	191	202612	248.92			100
77) Benzo(b)fluoranthene	37.078	252	540511m	261.01			
78) Benzo(k,j)fluoranthene	37.151	252	566274m	263.33			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.046	252	604890	254.04			100
81) Benzo(a)pyrene	38.210	252	512794	261.18			98
82) Indeno(1,2,3-c,d)pyrene	42.875	276	601212	266.33			100
83) Dibenzo(a,h)anthracene	42.926	278	482937	265.66			90
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	44.218	276	509875	254.98			95
89) Perylene	38.521	252	587567	259.78		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210D.D
Acq On : 4 Nov 2014 2:59 pm
Operator : YM
Sample : PAH-WKC3-250-034
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 05 06:58:02 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:54:17 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210E.D
Acq On : 4 Nov 2014 4:08 pm
Operator : YM
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 05 07:00:49 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:58:17 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.153	176	199004	251.05		0.00
31) Pyrene-d10	29.390	212	371611	250.63		0.00
73) Benzo(a)pyrene-d12	38.138	264	366874	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.541	136	601460	528.54		0.00
21) Acenaphthene-d10	19.383	164	385063	528.67		0.00
32) Phenanthrene-d10	24.480	188	684261	539.58		0.00
66) Chrysene-d12	33.590	240	851705	553.60		0.00
88) Perylene-d12	38.430	264	880912	536.43		0.00
90) 5(b)H-Cholane	33.977	217	210848	509.75		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	10.919	138	138489m	478.92		
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	13.606	128	699020	518.24		98
9) 2-Methylnaphthalene	15.853	142	539128	524.35		93
10) 1-Methylnaphthalene	16.181	142	450901	524.43		96
11) 2,6-Dimethylnaphthalene	17.943	156	469760	533.36		82
12) 1,6,7-Trimethylnaphtha...	20.785	170	458735	528.71		82
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.		
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.773	134	571221	527.23		100
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	17.411	154	659129	530.02		92
23) Acenaphthylene	18.894	152	731921	521.48		97
24) Acenaphthene	19.481	154	452614	533.52		98
25) Dibenzofuran	20.075	168	809232	533.75		100
26) Fluorene	21.248	166	569037	522.92		99
27) 1-Methylfluorene	23.249	180	342484	531.28		81
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	25.319	167	772168	543.55		100
34) Dibenzothiophene	24.130	184	836627	536.75		100
35) 4-Methyldibenzothiophene	25.640	198	577415	545.58		100
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	24.564	178	863027	552.01		99
42) Anthracene	24.731	178	807657	552.95		97
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	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210E.D
Acq On : 4 Nov 2014 4:08 pm
Operator : YM
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 05 07:00:49 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:58:17 2014
Response via : Initial Calibration

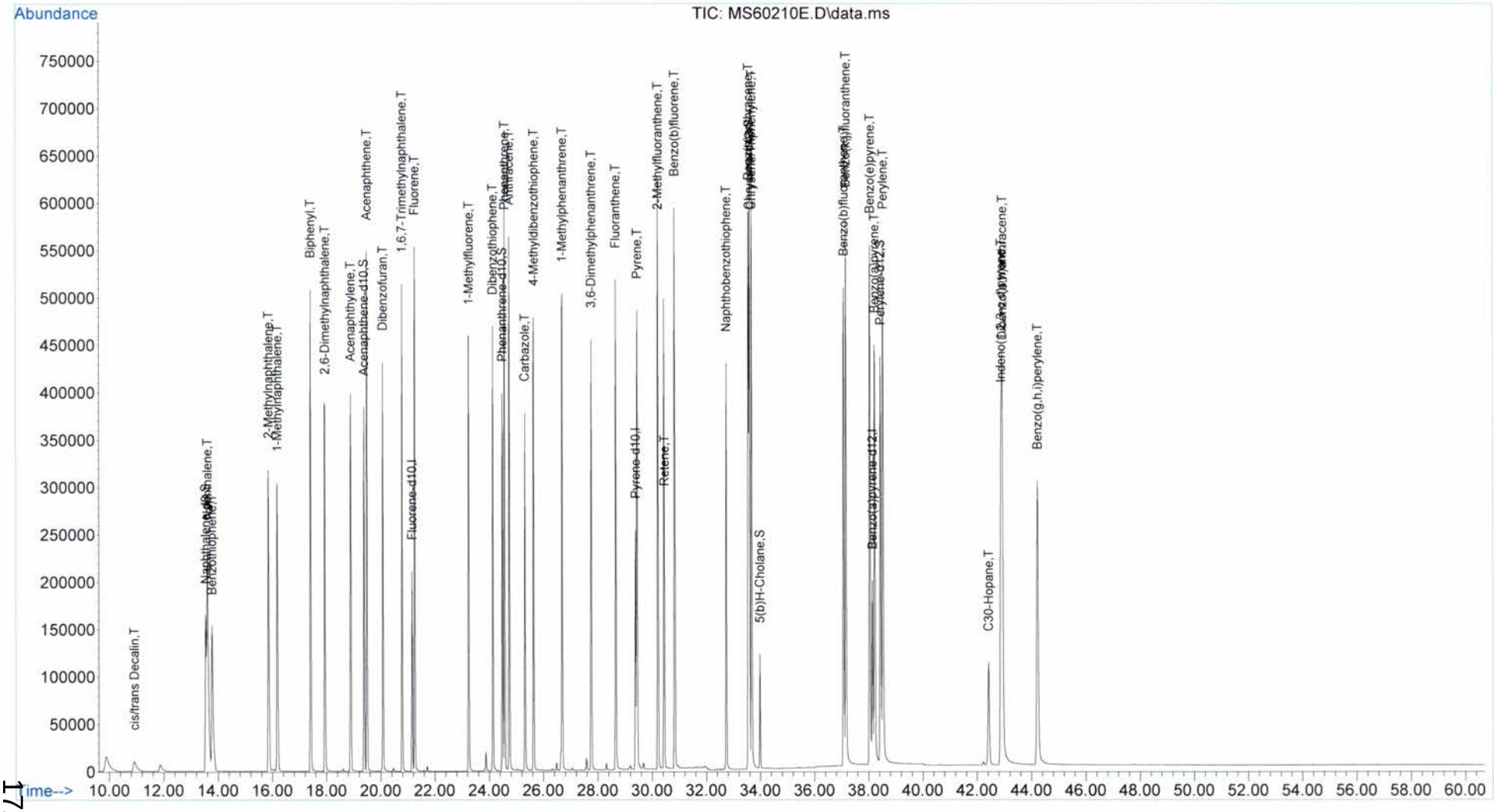
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.689	192	660275	536.83			93
48) 3,6-Dimethylphenanthrene	27.759	206	581009	534.32			92
49) Retene	30.451	234	314826	534.51		#	1
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.733	234	889893	539.04			100
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	28.656	202	968135	542.78		#	100
59) Pyrene	29.451	202	1045656	531.57		#	100
60) 2-Methylfluoranthene	30.206	216	635828	535.83		#	100
61) Benzo(b)fluorene	30.818	216	626134	543.21			100
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	33.549	228	946229m	536.60			
68) Chrysene/Triphenylene	33.671	228	992462m	555.81			
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	42.422	191	385499	500.07			100
77) Benzo(b)fluoranthene	37.079	252	1057560m	529.92			
78) Benzo(k,j)fluoranthene	37.152	252	1097623m	529.12			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.047	252	1181761	521.01			100
81) Benzo(a)pyrene	38.211	252	1010800	534.65			98
82) Indeno(1,2,3-c,d)pyrene	42.874	276	1194110	545.84			100
83) Dibenzo(a,h)anthracene	42.926	278	961367	544.65			90
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	44.218	276	993188	517.74			95
89) Perylene	38.521	252	1167734	537.35		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210E.D
Acq On : 4 Nov 2014 4:08 pm
Operator : YM
Sample : PAH-WKC4-500-034
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 05 07:00:49 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 06:58:17 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210F.D
Acq On : 4 Nov 2014 5:18 pm
Operator : YM
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 05 07:03:17 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:01:03 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.153	176	204096	251.05			0.00
31) Pyrene-d10	29.389	212	379088	250.63			0.00
73) Benzo(a)pyrene-d12	38.137	264	374234	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.541	136	1272364	1075.01			0.00
21) Acenaphthene-d10	19.383	164	823008	1086.36			0.00
32) Phenanthrene-d10	24.480	188	1477628	1120.28			0.00
66) Chrysene-d12	33.589	240	1853084	1149.96			0.00
88) Perylene-d12	38.430	264	1920589	1126.06			0.00
90) 5(b)H-Cholane	33.977	217	449328	1059.77			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.919	138	289835m	985.29			
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	13.606	128	1476035	1053.51			98
9) 2-Methylnaphthalene	15.853	142	1156540	1081.61			93
10) 1-Methylnaphthalene	16.181	142	956027	1069.71			96
11) 2,6-Dimethylnaphthalene	17.943	156	1009326	1098.77			79
12) 1,6,7-Trimethylnaphtha...	20.785	170	986907	1093.95			83
13) C2-Naphthalenes	0.000		0	N.D.	d		
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.774	134	1203836	1068.02			100
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	17.411	154	1404405	1084.00			91
23) Acenaphthylene	18.894	152	1581332	1086.61			97
24) Acenaphthene	19.481	154	972818	1101.40			98
25) Dibenzofuran	20.075	168	1732019	1094.84			100
26) Fluorene	21.247	166	1217408	1074.53			100
27) 1-Methylfluorene	23.250	180	738479	1101.93		#	78
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	25.319	167	1694420	1143.39			100
34) Dibenzothiophene	24.131	184	1801341	1109.19			99
35) 4-Methyldibenzothiophene	25.640	198	1247343	1131.50			100
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	24.564	178	1862435	1137.24			98
42) Anthracene	24.732	178	1763429	1153.28			97
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210F.D
Acq On : 4 Nov 2014 5:18 pm
Operator : YM
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 05 07:03:17 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:01:03 2014
Response via : Initial Calibration

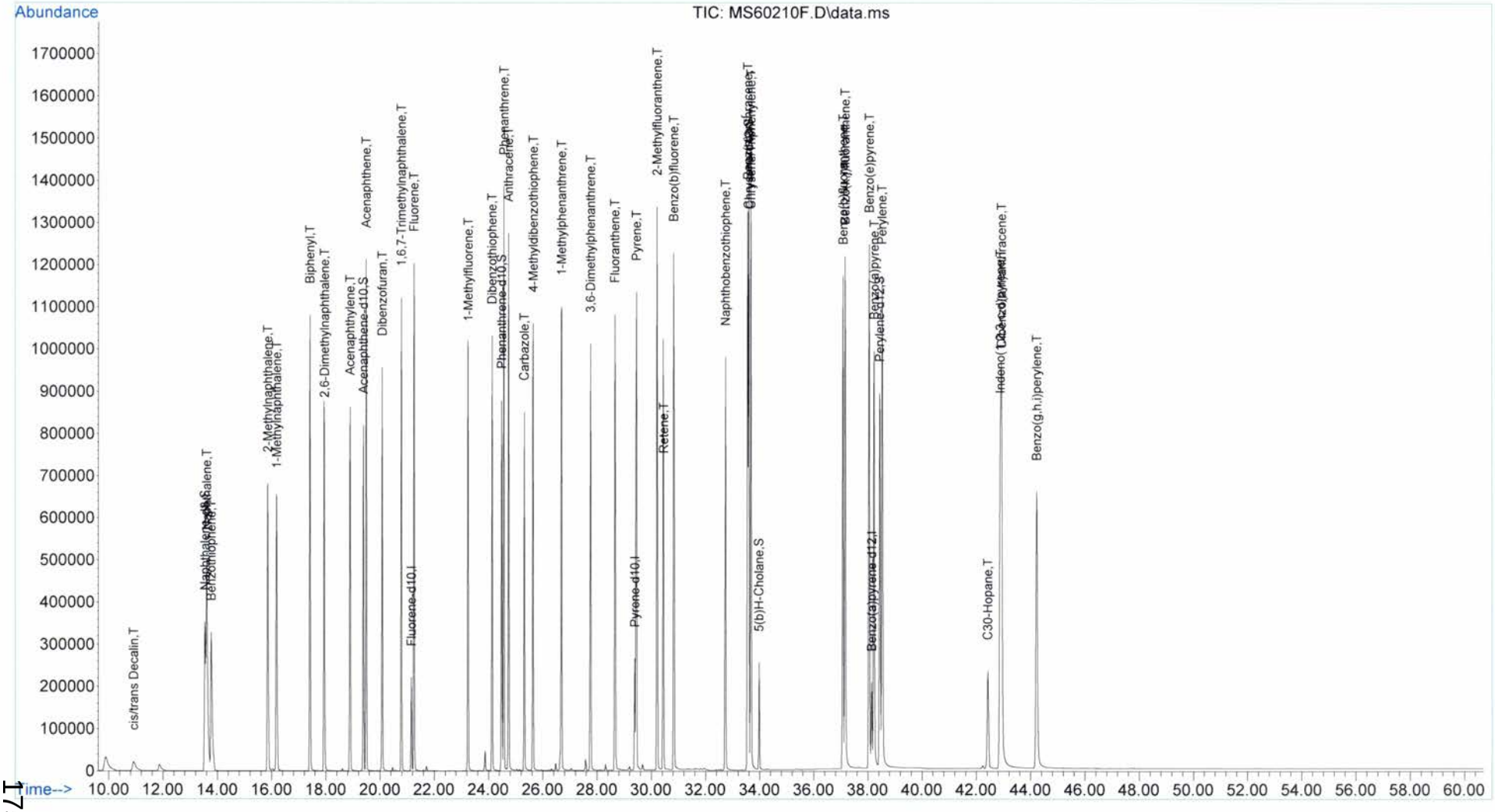
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.689	192	1432138	1118.71			93
48) 3,6-Dimethylphenanthrene	27.758	206	1260791	1118.07			94
49) Retene	30.450	234	684225	1119.71		#	3
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.733	234	1938708	1130.78			100
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	28.655	202	2086537	1124.80		#	100
59) Pyrene	29.451	202	2261319	1109.66		#	100
60) 2-Methylfluoranthene	30.205	216	1381750	1121.68		#	100
61) Benzo(b)fluorene	30.817	216	1368595	1140.70			99
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	33.549	228	2029268	1104.88			98
68) Chrysene/Triphenylene	33.671	228	2140774	1140.54			98
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	42.423	191	810158	1030.24			100
77) Benzo(b)fluoranthene	37.079	252	2283997m	1104.26			
78) Benzo(k,j)fluoranthene	37.152	252	2419367m	1127.53			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.046	252	2551731	1092.25			99
81) Benzo(a)pyrene	38.229	252	2204771	1123.48			100
82) Indeno(1,2,3-c,d)pyrene	42.875	276	2623046	1149.11			99
83) Dibenzo(a,h)anthracene	42.927	278	2129333	1154.31			90
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	44.219	276	2143556	1081.86			95
89) Perylene	38.521	252	2555799	1131.82		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210F.D
Acq On : 4 Nov 2014 5:18 pm
Operator : YM
Sample : PAH-WKC5-1000-034
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 05 07:03:17 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:01:03 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210G.D
Acq On : 4 Nov 2014 6:28 pm
Operator : YM
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 05 07:05:39 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:03:29 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorene-d10	21.151	176	210647	251.05			0.00
31) Pyrene-d10	29.390	212	397252	250.63			0.00
73) Benzo(a)pyrene-d12	38.138	264	399584	250.32			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.538	136	6565555	5295.78			0.00
21) Acenaphthene-d10	19.384	164	4326624	5440.30			0.00
32) Phenanthrene-d10	24.494	188	7999049	5652.29			0.01
66) Chrysene-d12	33.610	240	10224878	5878.95			0.02
88) Perylene-d12	38.448	264	10724580	5744.34			0.02
90) 5(b)H-Cholane	33.977	217	2427141	5298.07			0.00
Target Compounds							Qvalue
3) cis/trans Decalin	10.915	138	1463744m	4825.83			
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	13.602	128	7580300	5171.33			97
9) 2-Methylnaphthalene	15.850	142	6156639	5480.90			94
10) 1-Methylnaphthalene	16.167	142	4973421	5311.97			99
11) 2,6-Dimethylnaphthalene	17.944	156	5362917	5545.82			80
12) 1,6,7-Trimethylnaphtha...	20.796	170	5267807	5555.61			91
13) C2-Naphthalenes	0.000		0	N.D.	d		
14) C3-Naphthalenes	0.000		0	N.D.			
15) C4-Naphthalenes	0.000		0	N.D.			
16) Benzothiophene	13.770	134	6176975	5235.09			100
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	17.412	154	7373001	5419.34			91
23) Acenaphthylene	18.894	152	8777769	5743.32			95
24) Acenaphthene	19.496	154	5116930	5508.63			91
25) Dibenzofuran	20.073	168	9168269	5508.28			100
26) Fluorene	21.258	166	6494878	5456.37			95
27) 1-Methylfluorene	23.250	180	4023080	5709.38			97
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	25.319	167	9601116	6006.20			100
34) Dibenzothiophene	24.145	184	9831359	5639.86		#	89
35) 4-Methyldibenzothiophene	25.641	198	6744599	5696.84			100
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	24.564	178	10059863	5701.47			99
42) Anthracene	24.746	178	9889118	5989.51			93
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		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210G.D
Acq On : 4 Nov 2014 6:28 pm
Operator : YM
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 05 07:05:39 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:03:29 2014
Response via : Initial Calibration

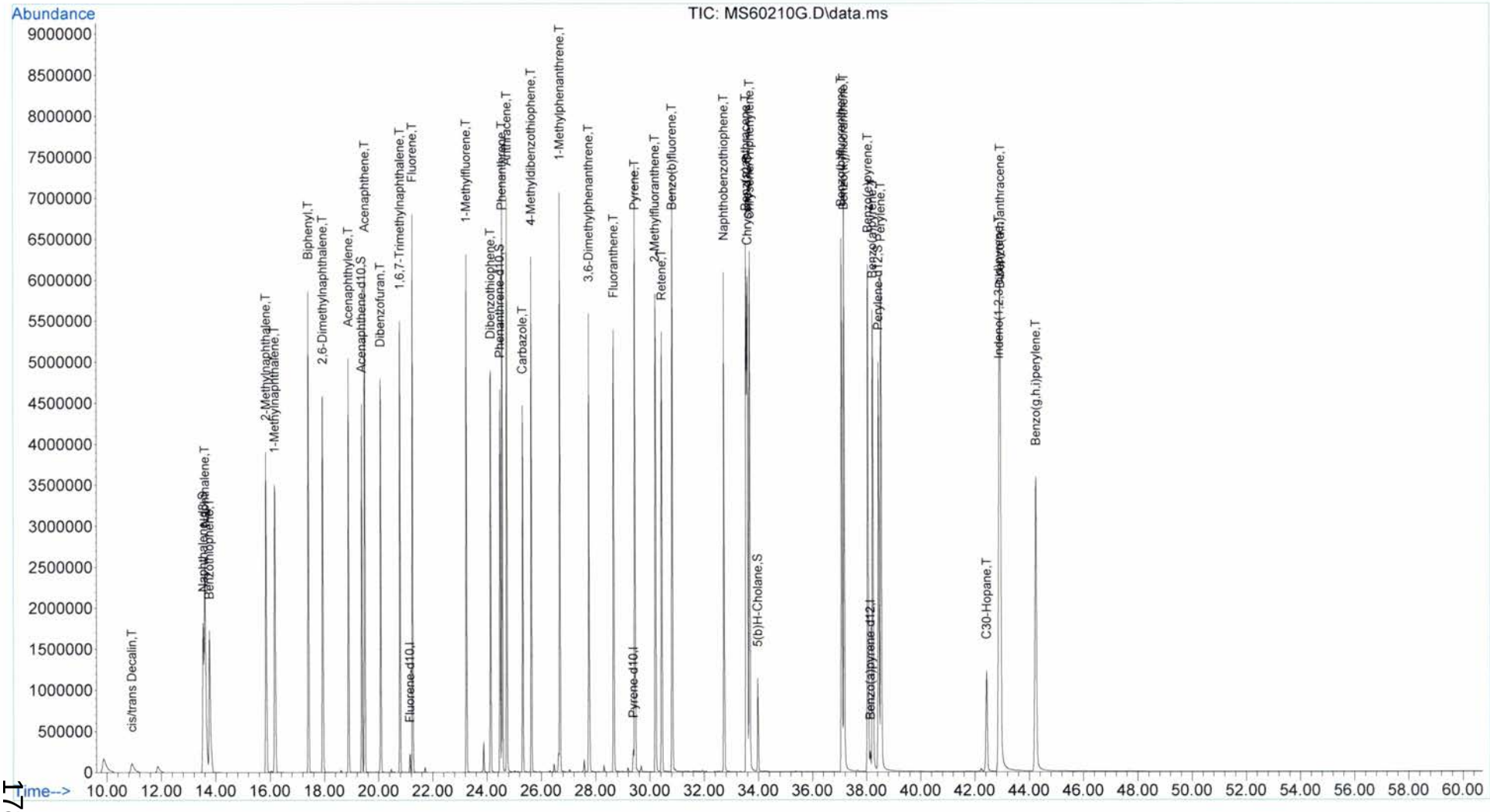
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.689	192	7905425	5747.40			94
48) 3,6-Dimethylphenanthrene	27.759	206	6905743	5711.93			98
49) Retene	30.451	234	3820739	5828.24		#	16
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.			
53) Naphthobenzothiophene	32.733	234	11027868	5988.81			100
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	28.677	202	11915195	5989.35		#	100
59) Pyrene	29.452	202	12540679	5747.73		#	100
60) 2-Methylfluoranthene	30.206	216	7759749	5869.66		#	100
61) Benzo(b)fluorene	30.838	216	7906061	6122.37			92
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	33.549	228	11893785	6039.56			99
68) Chrysene/Triphenylene	33.692	228	11972207	5908.48			94
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	42.434	191	4321838	5116.26			100
77) Benzo(b)fluoranthene	37.079	252	12875907m	5706.23			
78) Benzo(k,j)fluoranthene	37.170	252	14112382m	6009.15			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.065	252	14259333	5616.44			97
81) Benzo(a)pyrene	38.229	252	12662594	5896.16			96
82) Indeno(1,2,3-c,d)pyrene	42.899	276	15091532	6012.59			98
83) Dibenzo(a,h)anthracene	42.951	278	12425639	6108.72			88
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	44.256	276	11897734	5516.62			94
89) Perylene	38.540	252	14356945	5801.56		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210G.D
Acq On : 4 Nov 2014 6:28 pm
Operator : YM
Sample : PAH-WKC6-5000-034
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 05 07:05:39 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:03:29 2014
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210I.D
Acq On : 4 Nov 2014 8:47 pm
Operator : YM
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 05 07:11:51 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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	80	0.00
2	S	Naphthalene-d8	1.492	1.471	1.4	80	0.00
3	T	cis/trans Decalin	0.360	0.339	5.8	76	0.00
4	un	C1-Decalins	0.360	0.000	100.0#	0#	-12.09#
5	un	C2-Decalins	0.360	0.000	100.0#	0#	-14.05#
6	un	C3-Decalins	0.360	0.000	100.0#	0#	-16.68#
7	un	C4-Decalins	0.360	0.000	100.0#	0#	-18.57#
8	T	Naphthalene	1.761	1.638	7.0	75	0.00
9	T	2-Methylnaphthalene	1.362	1.301	4.5	78	0.00
10	T	1-Methylnaphthalene	1.128	1.061	5.9	76	0.01
11	T	2,6-Dimethylnaphthalene	1.174	1.026	12.6	71	0.00
12	T	1,6,7-Trimethylnaphthalene	1.151	1.026	10.9	73	-0.01
13	un	C2-Naphthalenes	1.761	0.000	100.0#	0#	-17.94#
14	un	C3-Naphthalenes	1.761	0.000	100.0#	0#	-19.76#
15	un	C4-Naphthalenes	1.761	0.000	100.0#	0#	-22.55#
16	T	Benzothiophene	1.418	1.295	8.7	74	0.00
17	un	C1-Benzothiophenes	1.418	0.000	100.0#	0#	-15.86#
18	un	C2-Benzothiophenes	1.418	0.000	100.0#	0#	-18.10#
19	un	C3-Benzothiophenes	1.418	0.000	100.0#	0#	-20.04#
20	un	C4-Benzothiophenes	1.418	0.000	100.0#	0#	-21.89#
21	S	Acenaphthene-d10	0.962	0.927	3.6	79	0.00
22	T	Biphenyl	1.645	1.440	12.5	71	0.00
23	T	Acenaphthylene	1.867	1.583	15.2	70	0.00
24	T	Acenaphthene	1.125	1.022	9.2	74	-0.01
25	T	Dibenzofuran	2.018	1.766	12.5	71	0.00
26	T	Fluorene	1.444	1.299	10.0	73	-0.01
27	T	1-Methylfluorene	0.858	0.000	100.0#	0#	-23.25#
28	un	C1-Fluorenes	1.444	0.000	100.0#	0#	-23.25#
29	un	C2-Fluorenes	1.444	0.000	100.0#	0#	-25.04#
30	un	C3-Fluorenes	1.444	0.000	100.0#	0#	-26.77#
31	I	Pyrene-d10	1.000	1.000	0.0	73	0.00
32	S	Phenanthrene-d10	0.912	0.931	-2.1	77	-0.01
33	T	Carbazole	1.043	0.839	19.6	59	0.00
34	T	Dibenzothiophene	1.126	1.043	7.4	70	-0.01
35	T	4-Methyldibenzothiophene	0.763	0.000	100.0#	0#	-25.64#
36	un	2/3-Methyldibenzothiophene	0.763	0.000	100.0#	0#	-25.95#
37	un	1-Methyldibenzothiophene	0.763	0.000	100.0#	0#	-26.27#
38	un	C2-Dibenzothiophenes	1.126	0.000	100.0#	0#	-27.04#
39	un	C3-Dibenzothiophenes	1.126	0.000	100.0#	0#	-28.33#
40	un	C4-Dibenzothiophenes	1.126	0.000	100.0#	0#	-30.02#
41	T	Phenanthrene	1.140	1.103	3.2	73	0.00
42	T	Anthracene	1.076	0.990	8.0	70	-0.01
43	un	3-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.31#
44	un	2-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.47#
45	un	2-Methylanthracene	0.891	0.000	100.0#	0#	-26.31#
46	un	4/9-Methylphenanthrene	0.891	0.000	100.0#	0#	-26.47#
47	T	1-Methylphenanthrene	0.891	0.825	7.4	70	-0.01
48	T	3,6-Dimethylphenanthrene	0.781	0.000	100.0#	0#	-27.76#
49	T	Retene	0.425	0.000	100.0#	0#	-30.45#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210I.D
Acq On : 4 Nov 2014 8:47 pm
Operator : YM
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 05 07:11:51 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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)
50	un	C2-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-28.31#
51	un	C3-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-29.55#
52	un	C4-Phenanthrenes/Anthracene	1.140	0.000	100.0#	0#	-31.31#
53	T	Naphthobenzothiophene	1.199	0.000	100.0#	0#	-32.73#
54	un	C1-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-34.32#
55	un	C2-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-35.77#
56	un	C3-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-36.93#
57	un	C4-Naphthobenzothiophenes	1.199	0.000	100.0#	0#	-37.66#
58	T	Fluoranthene	1.295	1.195	7.7	71	-0.02
59	T	Pyrene	1.411	1.337	5.2	72	0.00
60	T	2-Methylfluoranthene	0.858	0.000	100.0#	0#	-30.21#
61	T	Benzo(b)fluorene	0.844	0.000	100.0#	0#	-30.84#
62	un	C1-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-30.84#
63	un	C2-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-32.08#
64	un	C3-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-33.71#
65	un	C4-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-35.00#
66	S	Chrysene-d12	1.129	1.103	2.3	75	-0.02
67	T	Benz(a)anthracene	1.288	1.113	13.6	68	0.00
68	T	Chrysene/Triphenylene	1.319	1.212	8.1	72	-0.02
69	un	C1-Chrysenes	1.319	0.000	100.0#	0#	-35.06#
70	un	C2-Chrysenes	1.319	0.000	100.0#	0#	-36.06#
71	un	C3-Chrysenes	1.319	0.000	100.0#	0#	-38.07#
72	un	C4-Chrysenes	1.319	0.000	100.0#	0#	-39.09#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	74	0.00
74	un	C29-Hopane	0.531	0.000	100.0#	0#	-40.57#
75	un	18a-Oleanane	0.531	0.000	100.0#	0#	-41.43#
76	T	C30-Hopane	0.531	0.000	100.0#	0#	-42.43#
77	T	Benzo(b)fluoranthene	1.448	1.394	3.7	74	0.00
78	T	Benzo(k,j)fluoranthene	1.520	1.410	7.2	72	-0.02
79	un	Benzo(a)fluoranthene	1.520	0.000	100.0#	0#	-37.08#
80	T	Benzo(e)pyrene	1.622	1.384	14.7	66	-0.04
81	T	Benzo(a)pyrene	1.386	1.255	9.5	70	-0.02
82	T	Indeno(1,2,3-c,d)pyrene	1.625	1.415	12.9	68	-0.03
83	T	Dibenzo(a,h)anthracene	1.323	1.157	12.5	68	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-47.41#
85	un	C2-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-49.05#
86	un	C3-Dibenzo(a,h)anthracenes	1.323	0.000	100.0#	0#	-48.44#
87	T	Benzo(g,h,i)perylene	1.378	1.278	7.3	71	-0.04
88	S	Perylene-d12	1.199	1.126	6.1	72	-0.02
89	T	Perylene	1.592	1.332	16.3	65	-0.02
90	S	5(b)H-Cholane	0.290	0.286	1.4	75	0.00
91	un	C20-TAS	0.290	0.000	100.0#	0#	-33.08#
92	un	C21-TAS	0.290	0.000	100.0#	0#	-34.00#
93	un	C26(20S)-TAS	0.290	0.000	100.0#	0#	-38.45#
94	un	C26(20R)/C27(20S)-TAS	0.290	0.000	100.0#	0#	-39.27#
95	un	C28(20S)-TAS	0.290	0.000	100.0#	0#	-39.93#
96	un	C27(20R)-TAS	0.290	0.000	100.0#	0#	-40.37#
97	un	C28(20R)-TAS	0.290	0.000	100.0#	0#	-41.23#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS6\MS60210\
Data File : MS60210I.D
Acq On : 4 Nov 2014 8:47 pm
Operator : YM
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 05 07:11:51 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
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)

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210I.D
Acq On : 4 Nov 2014 8:47 pm
Operator : YM
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 05 07:11:51 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorene-d10	21.152	176	169087m	251.05	0.00
31) Pyrene-d10	29.389	212	293383m	250.63	0.00
73) Benzo(a)pyrene-d12	38.137	264	287303	250.32	0.00
System Monitoring Compounds					
2) Naphthalene-d8	13.539	136	247755	246.55	0.00
21) Acenaphthene-d10	19.383	164	156174	241.13	0.00
32) Phenanthrene-d10	24.480	188	272528	255.24	-0.01
66) Chrysene-d12	33.589	240	322834	244.19	-0.02
88) Perylene-d12	38.429	264	323040	234.83	-0.02
90) 5(b)H-Cholane	33.977	217	81927	246.28	0.00
Target Compounds					Qvalue
3) cis/trans Decalin	10.916	138	56518m	233.11	
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	13.603	128	272013	229.31	98
9) 2-Methylnaphthalene	15.851	142	217582	237.20	94
10) 1-Methylnaphthalene	16.181	142	177702	233.81	96
11) 2,6-Dimethylnaphthalene	17.943	156	172557	218.29	83
12) 1,6,7-Trimethylnaphtha...	20.785	170	173107	223.38	81
13) C2-Naphthalenes	0.000		0	N.D. d	
14) C3-Naphthalenes	0.000		0	N.D.	
15) C4-Naphthalenes	0.000		0	N.D.	
16) Benzothiophene	13.771	134	217400	227.63	100
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	17.411	154	241765	218.21	93
23) Acenaphthylene	18.894	152	266213	211.71	97
24) Acenaphthene	19.481	154	173127	228.57	97
25) Dibenzofuran	20.074	168	296782	218.35	100
26) Fluorene	21.247	166	215742	221.85	100
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	25.319	167	244708m	200.44	
34) Dibenzothiophene	24.130	184	301957	229.18	99
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	24.564	178	321694	241.09	99
42) Anthracene	24.731	178	290068	230.33	97
43) 3-Methylphenanthrene	0.000		0	N.D.	
44) 2-Methylphenanthrene	0.000		0	N.D. d	
45) 2-Methylanthracene	0.000		0	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210I.D
Acq On : 4 Nov 2014 8:47 pm
Operator : YM
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 05 07:11:51 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration

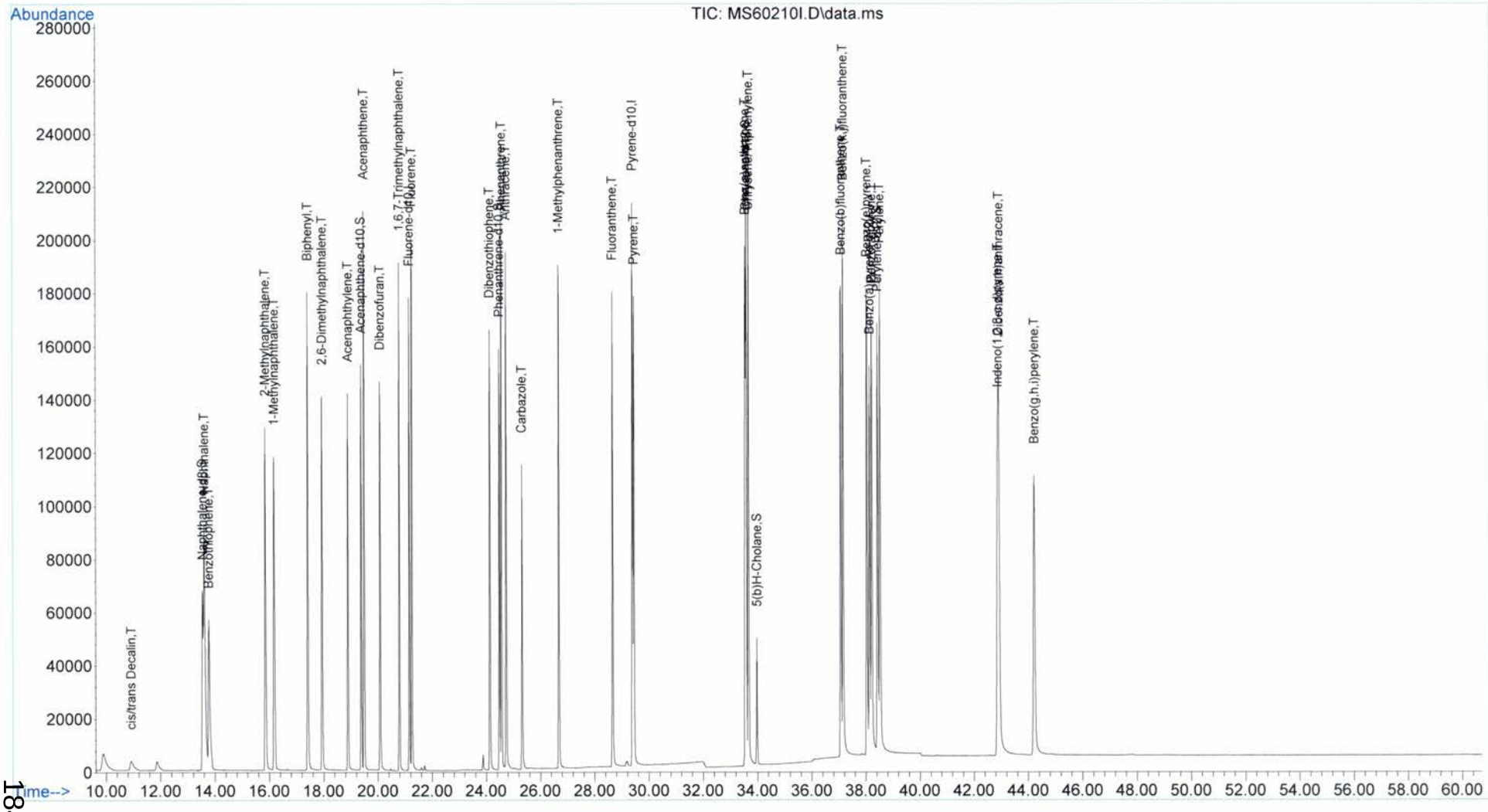
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d		
47) 1-Methylphenanthrene	26.675	192	239676	229.90			100
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d		
49) Retene	0.000		0	N.D.	d		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d		
51) C3-Phenanthrenes/Anthr...	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	28.655	202	352307	232.45		#	100
59) Pyrene	29.450	202	391742	237.24		#	100
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	33.548	228	322489	213.89			97
68) Chrysene/Triphenylene	33.671	228	351552	227.62			98
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	37.078	252	398259m	239.65			
78) Benzo(k,j)fluoranthene	37.151	252	405283m	232.29			
79) Benzo(a)fluoranthene	0.000		0	N.D.	d		
80) Benzo(e)pyrene	38.027	252	398379	213.96			98
81) Benzo(a)pyrene	38.210	252	359626	226.10			99
82) Indeno(1,2,3-c,d)pyrene	42.874	276	406031	217.64			100
83) Dibenzo(a,h)anthracene	42.913	278	329229	216.75			90
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	44.218	276	361534	228.61			95
89) Perylene	38.520	252	382145	209.18		#	100
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		

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

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS6\MS60210\
Data File : MS60210I.D
Acq On : 4 Nov 2014 8:47 pm
Operator : YM
Sample : PAH-WKICV-250-008
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 05 07:11:51 2014
Quant Method : C:\GCMS6\MS60210\AR60210.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Nov 05 07:05:49 2014
Response via : Initial Calibration



PAH Mass Discrimination Ratio

B&B Laboratories
Project J13034
Report 14-3319

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Mass Discrimination Sheet

Client Project #B0086002.1401

File Name	Sample Name	Benzo(g,h,i)perylene Concentration (ng/mL)	Phenanthrene Concentration (ng/mL)	Benzo(g,h,i)perylene/ Phenanthrene ratio	Q
MS60210B.D	PAH-WKC1-020-034	18.1	17.1	1.06	
MS60210C.D	PAH-WKC2-100-034	103	109	0.94	
MS60210D.D	PAH-WKC3-250-034	255	271	0.94	
MS60210E.D	PAH-WKC4-500-034	518	552	0.94	
MS60210F.D	PAH-WKC5-1000-034	1082	1137	0.95	
MS60210G.D	PAH-WKC6-5000-034	5517	5701	0.97	
MS60210I.D	PAH-WKICV-250-008	229	241	0.95	
MS60210J.D	PAH-WKCCV-250-042	244	251	0.97	
MS60210L.D	PAH-WKCCV-250-042	231	239	0.96	

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 14-3319

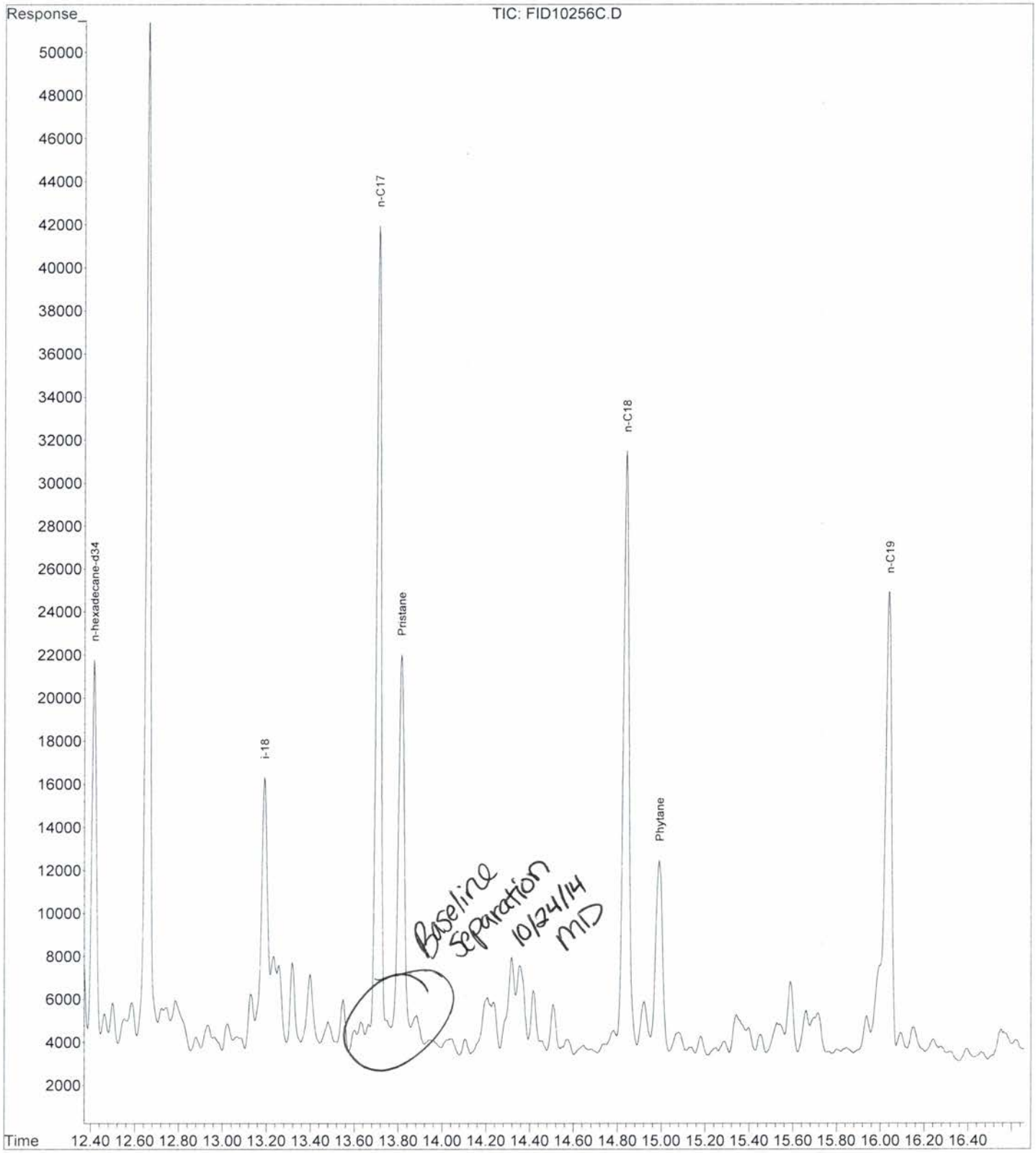
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
The Area of the Internal Standards in the Associated Calibration Standard

Client Project #B0086002.1401

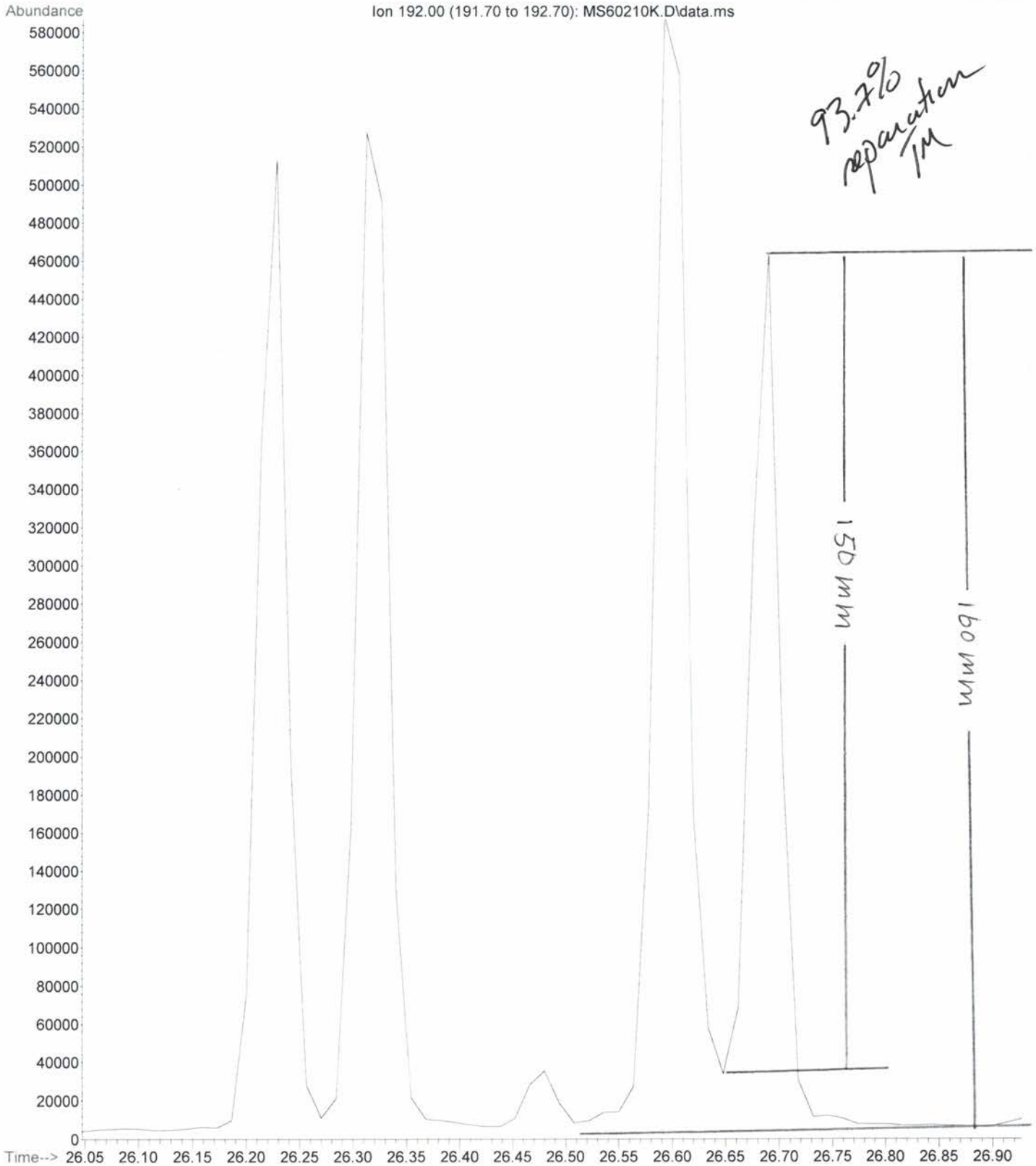
File Name	Sample Name	Internal Standard 1 Fluorene-d10				Internal Standard 2 Pyrene-d10				Internal Standard 3 Benzo(a)pyrene-d12			
		Response (Area)	50% (Area)	200% (Area)	Q	Response (Area)	50% (Area)	200% (Area)	Q	Response (Area)	50% (Area)	200% (Area)	Q
MS60210D.D	**PAH-WKC3-250-034**	**212663**	**106332**	**425326**		**399819**	**199910**	**799638**		**386814**	**193407**	**773628**	
MS60210I.D	PAH-WKICV-250-008	169087				293383				287303			
MS60210J.D	**PAH-WKCCV-250-042**	**182522**	**91261**	**365044**		**330667**	**165334**	**661334**		**301318**	**150659**	**602636**	
MS60210K.D	PAH-WKSRM2779-4.0-005	198179				384806				400778			
ENV3351A.D	Method Blank	188424				365372				354483			
ENV3351B.D	Blank Spike	184565				352545				351936			
ENV3351C.D	Blank Spike Dupl.	199493				377784				378113			
ARC2059.D	SHN-Cove-010(NB)102014	207397				411891				387176			
MS60210L.D	**PAH-WKCCV-250-042**	**195935**	**97968**	**391870**		**368569**	**184285**	**737138**		**349207**	**174604**	**698414**	

SRM-2779 Reference Oil Aliphatic and PAH Resolution Checks

File :P:\2013\J13034\Aliphatics\ENV 3351\FID10256\FID10256C.D
Operator : Meghan Dailey
Acquired : 23-Oct-2014, 21:53:12 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: AL-SRM2779-20-003
Misc Info :
Vial Number: 3



File :C:\GCMS6\MS60210\MS60210K.D
Operator : YM
Acquired : 4 Nov 2014 11:07 pm using AcqMethod PAH2014A.M
Instrument : GCMS6
Sample Name: PAH-WKSRM2779-4.0-005
Misc Info :
Vial Number: 11



Supporting Documents

Shipping, Sample Receiving, and Project Initiation Documents

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 10/22/14 SDG#: 14102201

Sender: Arcadis - Mayflower Pipeline Incident ; David Drost

1. Number of Shipping Containers: 1

Comments: medium blue cooler

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

Airbill Number: 806503052710 Comments: Priority overnight

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: none

4. Chain of Custody Records?
No (Yes) Comments: none

5. General Sample Conditions:
~~Frozen~~ Cool Unrefrigerated
Dry Ice Blue Ice (Ice) Temperature/Comments: 0.0°C / TLa

6. List of Broken Containers:

None

7. Number of Samples Expected: 1 Number of Samples Received: 1

8. Problems/Discrepancies:

None

Cooler # 1
1 Nct

9. Resolutions:

None

10. Checked in by: kurt kibler Date: 10/22/14

redium blue cooler

wet ice

Cooler Temp: 0.0°C

T6

Custody Seal: Intact

SDG# 14102201

eurofins | Lancaster Laboratories

564821

CUSTODY SEAL

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

DATE: 10.26.14

SIGNATURE:

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8065 0305 2710

Form ID No. 0200

1 From

Date 10.21.14

Sender's Name David Drost Phone 408 220-7618

Company Arcadis

Address 113 Trellis Ln

Dept./Floor/Suite/Room

City Ladson State SC ZIP 29456

2 Your Internal Billing Reference B00860022.1402.00601

3 To

Recipient's Name Amanda Brewster Phone

Company B&B Laboratories

Address 14391 B. S. Dowling Rd

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

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.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City College Station State TX ZIP 77845

4 Express Package Se

NOTE: Service order

Next Business Day

FedEx First Overnight

FedEx Priority Overnig

FedEx Standard Over

Saturday Delivery NOT

5 Packaging

FedEx Envelo

6 Special Ha

SATURDAY De

NOT available for

No Signature Re

Does this shipme

No

Yes

Dangerous goods (including d

or placed in a FedEx Express

7 Payment Bi

Sender

Acct. No. in Section

will be billed

Total Packages

Our liability is limited to US$

Rev. Date 1/12 • Part #167

8065 0305 2710

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: XOM
Project ID: Mayflower Pipeline Incident
B&B Contact: Amanda Brewster
Sampler Signature: D. Dost

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAH's (B&B 1006)	Analyses: Aliphatics/TPH (1016)	Comments
✓ SHA-ONE-010(NB)102014	10.20.14	1000	NET	N/A	G	1			
					Total # of Containers				

Other Instructions

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: David Dost	Arcadis	10.21.14	1700	Printed Name: Kurt Kibler	B&B Labs	10/22/14	0930
Signature:				Signature:			
Printed Name:				Printed Name:			
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

Report # 14-3319

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 14102201
Client: Arcadis - Mayflower Pipeline AR
Initiation Date: 10/22/14

Number of Samples: 1
Matrix: Net
Due Date: 45 days: 12/4/14
Comments:

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): BNH, ACY — Volume(s): 100 µl
Spike Standard(s): PAH, ACY — Volume(s): 100 µl
Internal Standard(s): PAH, ACY — Volume(s): 100 µl
Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

Sample Custodian Signature: _____ Date: 10/22/14
Laboratory Manager Signature: _____ Date: 10/22/14

Sample Initialton - general Rev 1.doc
Rev 1

cc: COC Book
Extraction Lab

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container
66837	J13034	Arcadis - Mayflower AR	ARC2059	SHN-Cove-010(NB)102014	10/20/14	10/22/14	PAH, TPH, ALI	NET		14102201	Cooler 1	Arcadis: David Drost	8oz clear glass jar

Amanda Brewster

From: Amanda Brewster <amandabrewster@tdi-bi.com>
Sent: Wednesday, October 22, 2014 3:19 PM
To: 'Drost, Dave'
Cc: 'juanramirez@tdi-bi.com'; 'donellfrank@tdi-bi.com'; 'tommcdonald@tdi-bi.com'; 'Parmelee, Rhiannon'; 'Chandler, Jennifer'; 'Patil, Sonal'; 'kurtkibler@tdi-bi.com'
Subject: Sample received 10/22/14
Attachments: COC 10-22-14.pdf

Hi Dave,

We received your sample this morning in good condition, the internal temperature of the cooler was 0.0ºC.
A PDF of the COC is attached for your records.

Regards,
Amanda

From: Drost, Dave [mailto:Dave.Drost@arcadis-us.com]
Sent: Wednesday, October 22, 2014 6:36 AM
To: Amanda Brewster
Cc: juanramirez@tdi-bi.com; donellfrank@tdi-bi.com; tommcdonald@tdi-bi.com; Parmelee, Rhiannon; Chandler, Jennifer; Patil, Sonal; kurtkibler@tdi-bi.com
Subject: COC/Tracking Mayflower Pipeline Incident 10-20-14

Included is the COC and tracking number for the sample sent 10-21-14, it should be arriving this morning via FedEx priority overnight. If you have any questions please do not hesitate to contact me.

Dave

David E. Drost | Surveyor | ddrost@arcadis-us.com Linkedin

ARCADIS U.S., Inc. | 194 Seven Farms Dr., Ste. F | Charleston, SC 29492
Office. 843.375.5990 | Cell. 408.220.3618 | www.arcadis-us.com

ARCADIS, Imagine the result
Please consider the environment before printing this email.

Laboratory Bench Sheet Logs

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

MATRIX
- [X] OTHER
- [ ] WATER
- [ ] SEDIMENT
- [ ] TISSUE

net

Job #: J13034 SDG #: 14102201

Client: Arcadis - Mayflower AR

Analysis: [X] PAH [ ] PESTS [ ] PCB [X] ALI

Other: TPH

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: PAH-WLSU-2500-007 Bottle 1 of 3
Pest/PCB: — Bottle ___ of ___
Aliphatic: AL-WLSU-200-003 Bottle 3 of 7
Other: — Bottle ___ of ___

Spike: 100 µL
PAH: PAH-WLSK-1000-030 Bottle 1 of 1
Pest/PCB: — Bottle ___ of ___
Aliphatic: AL-WLSK-100-022 Bottle 1 of 1
Other: — Bottle ___ of ___

GC Int Std: 100 µL
PAH: PAH-WLIS-2500-007 Bottle 1 of 3
Pest/PCB: — Bottle ___ of ___
Aliphatic: AL-WLIS-500-003 Bottle 3 of 7
Other: — Bottle ___ of ___

Turbo Vap
Bath T (C): ___
Pressure (>20psi): ___
Check Water Level: ___
Turbo Vap Date: ___

General Comments:
Report 14-3319

	Added	Witness
Surrogate:	10/23/14 CAS	10/23/14 BSA
Spike:	10/23/14 CAS	10/23/14 BSA
Internal:	10/23/14 CAS	10-23-14 EW

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Extraction Comments
1	ENV3351A	Method Blank	—			
2	ENV3351B	Blank Spike	—			
3	ENV3351C	Blank Spike Duplicate	—			
4	ARC2059	SHN-Cove-010(NB)102014	1 net			
5						
6						
7						
8						
9						
10						
11						
12						

Internal Chain of Custody

	Date	Initials
Extraction Prep	10/23/14	CAS
	10/23/14	CAS
Extraction	10/23/14	CAS
	10/23/14	CAS
Concentration	10-23-14	EW
	10-23-14	EW
Short Columns	10-23-14	EW
	10-23-14	EW

ENV 3351

201

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						
17						
18						
19						
20						
21						
22						
23						
24						

Internal Chain of Custody

Concentration Short Columns	
Date: 10-23-14	Date: 10-23-14
Initials: EMR	Initials: EL
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: 10-23-14	Initials: EL

Dry Weight Page

—

Lipid/EOM Page

EOM 1167

Clean-up/Separation/Other Columns

—

Lot Numbers

DCM: I735754
Hexane: —
Hydromatrix: —
Water: DK943-B
Silica: BCBM8451V
Alumina: VB23LZEMS
Sodium Sulfate: 31430513
Pentane: —
Copper: —
Hydrochloric Acid: —
SPE Columns: —
Other: —

Sample Storage Box #

J13034-7
#44
CF 10/23/14

HPLC Storage Box #

—

QC Review

Date	Initials
10/23/14	[illegible]

Equipment Used

☐ ASE1 ☐ ASE3 ☐ HPLC1
☐ ASE2 ☐ PLE ☐ HPLC2

Copied to Folders

10/23/14 [illegible]

B&B LABORATORIES EOM LOGBOOK

MATRIX: ~~OTHER~~ / SEDIMENT / WATER — wet

Job #: J13034 SDG #: 14102201

Client: Arcadis - Mayflower AR

General comments:

Lab Manager Date/Int: 10/23/14 ~~SCA~~

Transferred by Date/Int: 10/23/14 CK; From ENV Pg: ENV3351; From DRY Pg:

Date/Int: 10-23-14 EA

Bal. Cal. ✓ Date/Int: 10/23/14 CK

	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
1	ENV3351A	Method Blank	1		3	29.881	29.883	0.002	60		
2	ENV3351B	Blank Spike	1		3	30.293	30.307	0.014	420		
3	ENV3351C	Blank Spike Duplicate	1		3	29.998	30.010	0.012	360		
4	ARC2059	SHN-Cove-010(NB)10204	1 wet		3	30.191	30.218	0.027	810		
5											
6											
7											
8											
9											
10											
11											
12											

EOM 1167

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											

$$EOM = \frac{(EOM\ Wt.\ (mg))\ (Final\ Extract\ Vol.\ (ml))}{(Smpl\ Wt/Vol.\ (g/L))\ (0.10\ ml)} \times 1000$$

$$\%RPD = \frac{(EOM_1 - EOM_2)}{(EOM_1 + EOM_2) \times 0.5} \times 100\%$$

	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl Lipid Wt. (mg)
Solvent Blank	29.768	29.768	0.000
EOM Standard: EOM-WKLC-10-005	30.380	40.564	10.184

The Relative Percent Difference (RPD) between duplicates must be ≤ 25%.

Date/Int:	RPD
Sample:	
Duplicate:	

EOM 1167

Last Page