

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

August 06, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 07/25/2014

Group Number: 1491521

SDG: PEO14

PO Number: 4410181435

Release Number: SIXSMITH

State of Sample Origin: AR

Client Sample Description

WS-007(0.5-1.0)072414 Grab Surface Water
WS-009(Surface)072414 Grab Surface Water
WS-001(0.5-1.0)072414 Grab Surface Water
WS-021(Surface)072414 Grab Surface Water
WS-004(0.5-1.0)072414 Grab Surface Water

Lancaster Labs (LL)

7544607
7544608
7544609
7544610
7544611

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	ARCADIS	Attn: Emily Leamer
ELECTRONIC COPY TO	ARCADIS	Attn: Rhiannon Parmalee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith
ELECTRONIC COPY TO	ExxonMobil	Attn: Julie Foster
ELECTRONIC COPY TO	ARCADIS	Attn: Kim Abbott

Respectfully Submitted,



Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1491521

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 SIM, GC/MS Semivolatiles

Sample #s: 7544611

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials with the exception of: fluoranthene, 0.01 ug/l, was the only target compound detected in the re-extraction.

Sample #s: 7544609, 7544610

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Sample #s: 7544607, 7544608

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials. The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Batch #: 14207WAB026 (Sample number(s): 7544607-7544611)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD were below the acceptance window: Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 7544607, 7544608, blank

Sample Description: WS-007(0.5-1.0)072414 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7544607
LL Group # 1491521
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/24/2014 10:10 by ZP ExxonMobil
PO Box 4592
Submitted: 07/25/2014 09:40 Houston TX 77210-4592
Reported: 08/06/2014 09:38

P1401 SDG#: PEO14-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	0.019 J	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.051	1
08357	Pyrene	129-00-0	0.011 J	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14207WAB026	08/01/2014 19:44	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14207WAB026	07/29/2014 11:00	Anna E Stager	1

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

Sample Description: WS-009 (Surface) 072414 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7544608
LL Group # 1491521
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/24/2014 10:15 by ZP ExxonMobil
PO Box 4592
Houston TX 77210-4592
Submitted: 07/25/2014 09:40
Reported: 08/06/2014 09:38

P1402 SDG#: PEO14-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.031	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.051	1
08357	Pyrene	129-00-0	N.D.	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14207WAB026	08/01/2014 20:12	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14207WAB026	07/29/2014 11:00	Anna E Stager	1

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

Sample Description: WS-001(0.5-1.0)072414 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7544609
LL Group # 1491521
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/24/2014 10:25 by ZP ExxonMobil
PO Box 4592
Submitted: 07/25/2014 09:40 Houston TX 77210-4592
Reported: 08/06/2014 09:38

P1403 SDG#: PEO14-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.051	1
08357	Pyrene	129-00-0	N.D.	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14207WAB026	08/01/2014 20:39	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14207WAB026	07/29/2014 11:00	Anna E Stager	1

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

Sample Description: WS-021(Surface)072414 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7544610
LL Group # 1491521
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/24/2014 10:30 by ZP ExxonMobil
PO Box 4592
Submitted: 07/25/2014 09:40 Houston TX 77210-4592
Reported: 08/06/2014 09:38

P1404 SDG#: PEO14-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.051	1
08357	Pyrene	129-00-0	N.D.	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14207WAB026	08/01/2014 21:06	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14207WAB026	07/29/2014 11:00	Anna E Stager	1

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

Sample Description: WS-004(0.5-1.0)072414 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7544611
LL Group # 1491521
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 07/24/2014 10:35 by ZP ExxonMobil
PO Box 4592
Houston TX 77210-4592
Submitted: 07/25/2014 09:40
Reported: 08/06/2014 09:38

P1405 SDG#: PEO14-05*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	Acenaphthene	83-32-9	N.D.	0.010	0.051	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.051	1
08357	Anthracene	120-12-7	N.D.	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	0.032 J	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	0.037 J	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	0.056	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	0.030 J	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	0.023 J	0.010	0.051	1
08357	Chrysene	218-01-9	0.045 J	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Fluoranthene	206-44-0	0.074	0.010	0.051	1
08357	Fluorene	86-73-7	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.025 J	0.010	0.051	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.051	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.051	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.051	1
08357	Phenanthrene	85-01-8	0.040 J	0.030	0.051	1
08357	Pyrene	129-00-0	0.064	0.010	0.051	1

The laboratory did not receive sufficient sample volume to perform the method QC requirement for MS/MSD or MS/DUP analysis.

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials with the exception of: fluoranthene, 0.01 ug/l, was the only target compound detected in the re-extraction.

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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14207WAB026	08/01/2014 21:33	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14207WAB026	07/29/2014 11:00	Anna E Stager	1

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

Quality Control Summary

Client Name: ExxonMobil
Reported: 08/06/14 at 09:38 AM

Group Number: 1491521

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

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 14207WAB026	Sample number(s): 7544607-7544611								
Acenaphthene	N.D.	0.010	0.050	ug/l	104	110	83-119	6	30
Acenaphthylene	N.D.	0.010	0.050	ug/l	97	103	81-130	7	30
Anthracene	N.D.	0.010	0.050	ug/l	99	106	83-125	7	30
Benzo(a)anthracene	N.D.	0.010	0.050	ug/l	95	97	79-122	3	30
Benzo(a)pyrene	N.D.	0.010	0.050	ug/l	86	88	80-121	2	30
Benzo(b)fluoranthene	N.D.	0.010	0.050	ug/l	92	90	79-136	2	30
Benzo(g,h,i)perylene	N.D.	0.010	0.050	ug/l	66*	67*	72-132	2	30
Benzo(k)fluoranthene	N.D.	0.010	0.050	ug/l	82	80*	81-131	2	30
Chrysene	N.D.	0.010	0.050	ug/l	88	91	84-118	3	30
Dibenz(a,h)anthracene	N.D.	0.010	0.050	ug/l	58*	56*	66-133	2	30
Fluoranthene	N.D.	0.010	0.050	ug/l	97	101	84-124	5	30
Fluorene	N.D.	0.010	0.050	ug/l	94	99	82-119	5	30
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050	ug/l	65*	67*	68-132	2	30
1-Methylnaphthalene	N.D.	0.010	0.050	ug/l	90	96	86-130	7	30
2-Methylnaphthalene	N.D.	0.010	0.050	ug/l	87	93	81-131	7	30
Naphthalene	N.D.	0.030	0.050	ug/l	90	96	82-122	7	30
Phenanthrene	N.D.	0.030	0.050	ug/l	92	98	83-116	7	30
Pyrene	N.D.	0.010	0.050	ug/l	95	98	78-125	4	30

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: PAHs in waters by SIM

Batch number: 14207WAB026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7544607	91	45*	82
7544608	100	48*	86
7544609	98	64	83
7544610	104	72	85
7544611	100	86	84
Blank	93	61*	82
LCS	92	81	83
LCSD	95	84	87

*- 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 SummaryClient Name: ExxonMobil
Reported: 08/06/14 at 09:38 AM

Group Number: 1491521

Surrogate Quality Control

Limits: 59-128 62-141 70-134

*- 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



Lancaster Laboratories Environmental

Acct. # 14739 For Eurofins Lancaster Laboratories Environmental use only
 Group # 1491521 Sample # 1544607-11
Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks		
Facility #/SID <u>Mayflower Pipeline Incident</u>				Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input checked="" type="checkbox"/> Oil <input type="checkbox"/> Air <input type="checkbox"/>	Preservation Code										Preservation Codes H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ O = Other					
Site Address <u>Mayflower AK</u>					Total # of Containers <u>PAH (8270 SIM)</u>															
ExxonMobil PM <u>Mike Sixsmith</u>		Cost Center/AFE																		
Consultant/Office <u>Arcadis</u>		Consultant Phone # <u>919 302 6799</u>																		
Consultant PM <u>Steve Barrick</u>		Sampler <u>Zac Powers Matt Hamby</u>		7 Turnaround Time Requested (TAT) (please circle) Standard <input checked="" type="radio"/> 5 day 4 day 72 hour 48 hour 24 hour										9 Date Time <u>7/24/14</u> <u>0830</u> Date Time <u>7/24/14</u> <u>1500</u> Date Time _____ _____ Date Time _____ _____ Date Time <u>7-25-14</u> <u>940</u>						
2 Sample Identification		3 Collected														Grab	Composite	Soil	Water	Oil
Date	Time																			
<u>WS-007(0.5-1.0)072414</u>	<u>7.24.14 1010</u>	<input checked="" type="checkbox"/>																	<input checked="" type="checkbox"/>	
<u>WS-009(surface)072414</u>	<u>7.24.14 1015</u>	<input checked="" type="checkbox"/>																	<input checked="" type="checkbox"/>	
<u>WS-001(0.5-1.0)072414</u>	<u>7.24.14 1025</u>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>													
<u>WS-021(surface)072414</u>	<u>7.24.14 1030</u>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>													
<u>WS-004(0.5-1.0)072414</u>	<u>7.24.14 1035</u>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>													

SCR#: 158491

Client: ExxonMobil

May flower

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/25/2014 9:40</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>AR</u>		

Arrival Condition Summary

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

Unpacked by Brandy Barclay (2299) at 10:38 on 07/25/2014

Samples Chilled Details: May flower

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

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Samples Collected Same Day as Receipt?</u>	<u>Elevated Temp?</u>
1	DT146	0.8	DT	Wet	Y	Bagged	N	N

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 \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

- A** TIC is a possible aldol-condensation product
- B** Analyte was also detected in the blank
- C** Pesticide result confirmed by GC/MS
- D** Compound quantitated on a diluted sample
- E** Concentration exceeds the calibration range of the instrument
- N** Presumptive evidence of a compound (TICs only)
- P** Concentration difference between primary and confirmation columns $>25\%$
- U** Compound was not detected
- X,Y,Z** Defined in case narrative

Inorganic Qualifiers

- B** Value is $<$ CRDL, but \geq IDL
- E** Estimated due to interference
- M** Duplicate injection precision not met
- N** Spike sample not within control limits
- S** Method of standard additions (MSA) used for calculation
- U** Compound was not detected
- W** Post digestion spike out of control limits
- *** Duplicate analysis not within control limits
- +** 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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