

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

February 02, 2015

Project: Mayflower, AR Pipeline Incident

Submittal Date: 01/21/2015

Group Number: 1532689

SDG: PEO51

PO Number: 4410272923

Release Number: SIXSMITH

State of Sample Origin: AR

Client Sample Description

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
WS-007(0.5-1.0)012015 Grab Surface Water	7745704
WS-007(0.5-1.0)012015MS Grab Surface Water	7745705
WS-007(0.5-1.0)012015MSD Grab Surface Water	7745706
WS-009(Surface)012015 Grab Surface Water	7745707
WS-001(0.5-1.0)012015 Grab Surface Water	7745708
WS-021(Surface)012015 Grab Surface Water	7745709
WS-004(0.5-1.0)012015 Grab Surface Water	7745710
DUP-WS-139-012015 Grab Surface Water	7745711

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

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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 Parmelee
ELECTRONIC COPY TO	ExxonMobil	Attn: Michael L Sixsmith

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ELECTRONIC	ExxonMobil	Attn: Julie Foster
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ELECTRONIC	ARCADIS	Attn: Sonal Patil
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ELECTRONIC	ARCADIS	Attn: Kim Abbott
COPY TO		

Respectfully Submitted,



Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LL Group #: 1532689

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 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: 7745704, 7745705, 7745706, 7745707, 7745708, 7745709, 7745710, 7745711

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

Batch #: 15024WAA026 (Sample number(s): 7745704-7745711 UNSPK: 7745704)

The recovery(ies) for the following analyte(s) in the LCS were below the acceptance window: Naphthalene

Sample Description: WS-007(0.5-1.0)012015 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745704
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 12:05 by ZP ExxonMobil
PO Box 4592
Submitted: 01/21/2015 09:00 Houston TX 77210-4592
Reported: 02/02/2015 14:14

20007 SDG#: PEO51-01BKG

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	0.013 J	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	0.011 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	0.020 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	0.061	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.061	1
08357	Pyrene	129-00-0	0.013 J	0.010	0.051	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 18:20	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	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

Sample Description: WS-007 (0.5-1.0) 012015MS Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745705
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 12:05 by ZP ExxonMobil
PO Box 4592
Submitted: 01/21/2015 09:00 Houston TX 77210-4592
Reported: 02/02/2015 14:14

20007 SDG#: PEO51-01MS

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	1.1	0.011	0.053	1
08357	Acenaphthylene	208-96-8	1.2	0.011	0.053	1
08357	Anthracene	120-12-7	1.2	0.011	0.053	1
08357	Benzo(a)anthracene	56-55-3	1.2	0.011	0.053	1
08357	Benzo(a)pyrene	50-32-8	0.96	0.011	0.053	1
08357	Benzo(b)fluoranthene	205-99-2	1.1	0.011	0.053	1
08357	Benzo(g,h,i)perylene	191-24-2	0.89	0.011	0.053	1
08357	Benzo(k)fluoranthene	207-08-9	1.0	0.011	0.053	1
08357	Chrysene	218-01-9	1.0	0.011	0.053	1
08357	Dibenz(a,h)anthracene	53-70-3	0.85	0.011	0.053	1
08357	Fluoranthene	206-44-0	1.1	0.011	0.053	1
08357	Fluorene	86-73-7	1.2	0.011	0.053	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.87	0.011	0.053	1
08357	1-Methylnaphthalene	90-12-0	1.2	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	1.3	0.011	0.053	1
08357	Naphthalene	91-20-3	1.2	0.032	0.063	1
08357	Phenanthrene	85-01-8	1.2	0.032	0.063	1
08357	Pyrene	129-00-0	1.1	0.011	0.053	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 18:48	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	1

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

Sample Description: WS-007 (0.5-1.0) 012015MSD Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745706
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 12:05 by ZP ExxonMobil
PO Box 4592
Submitted: 01/21/2015 09:00 Houston TX 77210-4592
Reported: 02/02/2015 14:14

20007 SDG#: PEO51-01MSD

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	1.2	0.011	0.053	1
08357	Acenaphthylene	208-96-8	1.2	0.011	0.053	1
08357	Anthracene	120-12-7	1.2	0.011	0.053	1
08357	Benzo(a)anthracene	56-55-3	1.4	0.011	0.053	1
08357	Benzo(a)pyrene	50-32-8	1.2	0.011	0.053	1
08357	Benzo(b)fluoranthene	205-99-2	1.3	0.011	0.053	1
08357	Benzo(g,h,i)perylene	191-24-2	1.2	0.011	0.053	1
08357	Benzo(k)fluoranthene	207-08-9	1.3	0.011	0.053	1
08357	Chrysene	218-01-9	1.2	0.011	0.053	1
08357	Dibenz(a,h)anthracene	53-70-3	1.1	0.011	0.053	1
08357	Fluoranthene	206-44-0	1.3	0.011	0.053	1
08357	Fluorene	86-73-7	1.3	0.011	0.053	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	1.2	0.011	0.053	1
08357	1-Methylnaphthalene	90-12-0	1.2	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	1.3	0.011	0.053	1
08357	Naphthalene	91-20-3	1.2	0.032	0.064	1
08357	Phenanthrene	85-01-8	1.2	0.032	0.064	1
08357	Pyrene	129-00-0	1.3	0.011	0.053	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 19:16	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	1

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

Sample Description: WS-009 (Surface) 012015 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745707
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 12:10 by ZP ExxonMobil
PO Box 4592
Submitted: 01/21/2015 09:00 Houston TX 77210-4592
Reported: 02/02/2015 14:14

20009 SDG#: PEO51-02

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	0.052	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.052	1
08357	Anthracene	120-12-7	N.D.	0.010	0.052	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.052	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.052	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.052	1
08357	Chrysene	218-01-9	N.D.	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.052	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.052	1
08357	Fluorene	86-73-7	N.D.	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.052	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.052	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.052	1
08357	Naphthalene	91-20-3	N.D.	0.031	0.063	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.063	1
08357	Pyrene	129-00-0	N.D.	0.010	0.052	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 19:43	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	1

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

Sample Description: WS-001(0.5-1.0)012015 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745708
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 12:20 by ZP ExxonMobil
PO Box 4592
Submitted: 01/21/2015 09:00 Houston TX 77210-4592
Reported: 02/02/2015 14:14

20001 SDG#: PEO51-03

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.	0.031	0.061	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.061	1
08357	Pyrene	129-00-0	N.D.	0.010	0.051	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 20:11	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	1

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

Sample Description: WS-021(Surface)012015 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745709
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 12:25 by ZP ExxonMobil
PO Box 4592
Submitted: 01/21/2015 09:00 Houston TX 77210-4592
Reported: 02/02/2015 14:14

20021 SDG#: PEO51-04

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	0.052	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.052	1
08357	Anthracene	120-12-7	N.D.	0.010	0.052	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.052	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.052	1
08357	Benzo(g,h,i)perylene	191-24-2	0.019 J	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.052	1
08357	Chrysene	218-01-9	N.D.	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	0.016 J	0.010	0.052	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.052	1
08357	Fluorene	86-73-7	N.D.	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.017 J	0.010	0.052	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.052	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.052	1
08357	Naphthalene	91-20-3	N.D.	0.031	0.063	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.063	1
08357	Pyrene	129-00-0	N.D.	0.010	0.052	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 20:39	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	1

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

Sample Description: WS-004(0.5-1.0)012015 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745710
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 12:30 by ZP ExxonMobil
PO Box 4592
Submitted: 01/21/2015 09:00 Houston TX 77210-4592
Reported: 02/02/2015 14:14

20004 SDG#: PEO51-05

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	0.052	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.052	1
08357	Anthracene	120-12-7	N.D.	0.010	0.052	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.052	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.052	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.052	1
08357	Chrysene	218-01-9	N.D.	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.052	1
08357	Fluoranthene	206-44-0	N.D.	0.010	0.052	1
08357	Fluorene	86-73-7	N.D.	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.052	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.052	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.052	1
08357	Naphthalene	91-20-3	N.D.	0.031	0.063	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.063	1
08357	Pyrene	129-00-0	N.D.	0.010	0.052	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 21:06	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	1

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

Sample Description: DUP-WS-139-012015 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7745711
LL Group # 1532689
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 01/20/2015 by ZP

ExxonMobil

PO Box 4592

Submitted: 01/21/2015 09:00

Houston TX 77210-4592

Reported: 02/02/2015 14:14

DU139 SDG#: PEO51-06FD

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	0.052	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.052	1
08357	Anthracene	120-12-7	N.D.	0.010	0.052	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.052	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.052	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.052	1
08357	Chrysene	218-01-9	N.D.	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.052	1
08357	Fluoranthene	206-44-0	0.011 J	0.010	0.052	1
08357	Fluorene	86-73-7	N.D.	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.052	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.052	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.052	1
08357	Naphthalene	91-20-3	N.D.	0.031	0.062	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.062	1
08357	Pyrene	129-00-0	N.D.	0.010	0.052	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
naphthalene

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	15024WAA026	01/30/2015 21:34	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	15024WAA026	01/26/2015 10:50	Roman Kuropatkin	1

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

Quality Control Summary

Client Name: ExxonMobil
Reported: 02/02/15 at 02:14 PM

Group Number: 1532689

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: 15024WAA026	Sample number(s): 7745704-7745711								
Acenaphthene	N.D.	0.010	0.050	ug/l	84		82-126		
Acenaphthylene	N.D.	0.010	0.050	ug/l	87		72-124		
Anthracene	N.D.	0.010	0.050	ug/l	89		83-125		
Benzo(a)anthracene	N.D.	0.010	0.050	ug/l	87		79-122		
Benzo(a)pyrene	N.D.	0.010	0.050	ug/l	92		72-126		
Benzo(b)fluoranthene	N.D.	0.010	0.050	ug/l	83		79-136		
Benzo(g,h,i)perylene	N.D.	0.010	0.050	ug/l	92		59-137		
Benzo(k)fluoranthene	N.D.	0.010	0.050	ug/l	93		72-129		
Chrysene	N.D.	0.010	0.050	ug/l	89		77-122		
Dibenz(a,h)anthracene	N.D.	0.010	0.050	ug/l	91		42-143		
Fluoranthene	N.D.	0.010	0.050	ug/l	92		76-121		
Fluorene	N.D.	0.010	0.050	ug/l	87		82-119		
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050	ug/l	92		53-136		
1-Methylnaphthalene	N.D.	0.010	0.050	ug/l	82		75-117		
2-Methylnaphthalene	N.D.	0.010	0.050	ug/l	83		68-124		
Naphthalene	N.D.	0.030	0.060	ug/l	74*		78-117		
Phenanthrene	N.D.	0.030	0.060	ug/l	85		83-116		
Pyrene	N.D.	0.010	0.050	ug/l	82		70-124		

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

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 15024WAA026	Sample number(s): 7745704-7745711 UNSPK: 7745704								
Acenaphthene	79	82	69-134	4	30				
Acenaphthylene	83	84	66-132	2	30				
Anthracene	78	82	64-129	6	30				
Benzo(a)anthracene	78	90	37-135	15	30				
Benzo(a)pyrene	66	82	32-137	22	30				
Benzo(b)fluoranthene	63	76	41-137	20	30				
Benzo(g,h,i)perylene	60	79	21-127	28	30				
Benzo(k)fluoranthene	66	80	36-139	20	30				
Chrysene	68	80	51-129	17	30				
Dibenz(a,h)anthracene	56	76	17-134	30	30				
Fluoranthene	77	89	53-133	15	30				
Fluorene	83	85	59-137	4	30				
Indeno(1,2,3-cd)pyrene	60	80	26-130	29	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: 1532689

Reported: 02/02/15 at 02:14 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

<u>Analysis Name</u>	<u>MS</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
1-Methylnaphthalene	83	82	60-129	1	30				
2-Methylnaphthalene	85	84	64-129	0	30				
Naphthalene	80	78	58-131	1	30				
Phenanthrene	82	84	66-126	3	30				
Pyrene	73	82	49-136	13	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: 15024WAA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7745704	95	94	85
7745705	92	91	99
7745706	105	112	97
7745707	104	103	88
7745708	97	83	93
7745709	101	96	98
7745710	95	78	90
7745711	93	95	88
Blank	104	110	85
LCS	105	117	97
MS	92	91	99
MSD	105	112	97
Limits:	56-134	36-156	59-132

*- 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

For Eurofins Lancaster Laboratories Environmental use only
 Acct. # 14739 Group # 1532689 Sample # 7745704-11
Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested						SCR#: <u>159751</u>			
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					
Site Address <u>Mayflower, AR.</u>				Total # of Containers <u>8270 PAHSIM</u>						H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ O = Other					
ExxonMobil PM <u>Mike Sixsmith</u>		Cost Center/AFE								6 Remarks					
Consultant/Office <u>Arcadis</u>										Soil <input type="checkbox"/> Composite <input type="checkbox"/>			9		
Consultant PM <u>Steve Barrick</u>		Consultant Phone #													
Sampler <u>Zac Powers</u>															
2 Sample Identification		Collected													
		Date	Time	Grab	Composite										
WS-007 (0.5-1.0) 012015		01-20-15	1205	X											
WS-007 (0.5-1.0) 012015 ms/msd			1205	X											
WS-009 (surface) 012015			1210	X											
WS-001 (0.5-1.0) 012015			1220	X											
WS-021 (surface) 012015			1225	X											
WS-004 (0.5-1.0) 012015			1230	X											
DUP-WS-139-012015															
Z Powers 1/20/15															
7 Turnaround Time Requested (TAT) (please circle)			Relinquished by <u>Zac Powers</u>			Date <u>1/20/15</u>	Time <u>1600</u>	Received by <u>UPS</u>			Date <u>1-21-15</u>	Time <u>900</u>			
Standard 5 day 4 day 72 hour 48 hour 24 hour			Relinquished by			Date	Time	Received by			Date	Time			
			Relinquished by			Date	Time	Received by			Date	Time			
8 Data Package (circle if required)			Relinquished by Commercial Carrier			Received by <u>[Signature]</u>			Date <u>1-21-15</u>	Time <u>900</u>					
Type I - Full Type VI (Raw Data) NJ Reduced Other _____			EDD (circle if required) Locus EIM (default) Other _____			UPS <input checked="" type="checkbox"/> FedEx _____ Other _____			Temperature Upon Receipt <u>0.2</u> °C			Custody Seals Intact? <input checked="" type="checkbox"/> Yes No			

Client: ExxonMobil

Mayflower

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>01/21/2015 9:00</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:	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 10:57 on 01/21/2015

Samples Chilled Details: Mayflower

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>Elevated Temp?</u>
1	DT146	0.2	DT	Wet	Y	Bagged	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		
>	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.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and the $<$ Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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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