ANALYTICAL RESULTS

Prepared by:

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2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil
PO Box 4592
Houston TX 77210-4592

February 26, 2014

Project: Mayflower, AR Pipeline Incident

Submittal Date: 02/14/2014
Group Number: 1452684
SDG: PEM85
PO Number: 4410181435
Release Number: SIXSMITH
State of Sample Origin: AR

Client Sample Description	Lancaster Labs (LL) #
WS-020(Surface)021214 Grab Surface Water	7364405
WS-007(0.5-1.0)021214 Grab Surface Water	7364406
WS-009(Surface)021214 Grab Surface Water	7364407
WS-001(0.5-1.0)021214 Grab Surface Water	7364408
WS-021(Surface)021214 Grab Surface Water	7364409
WS-004(0.5-1.0)021214 Grab Surface Water	7364410
WS-EB-127-021314 Grab Water	7364411

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

Respectfully Submitted,

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LLI Group #: 1452684

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: 7364406, 7364407, 7364409

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

Batch #: 14046WAI026 (Sample number(s): 7364405-7364411 UNSPK: P364422)

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: 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) 7364406, 7364407, 7364409

Sample Description: WS-020(Surface)021214 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7364405
LL Group # 1452684
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/12/2014 10:35 by DF

Submitted: 02/14/2014 14:00
Reported: 02/26/2014 14:05

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P8501 SDG#: PEM85-01

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	0.015 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	0.012 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	0.016 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.	0.031	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.051	1
08357	Pyrene	129-00-0	0.015 J	0.010	0.051	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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14046WAI026	02/21/2014 20:33	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14046WAI026	02/17/2014 09:45	Anna E Stager	1

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

Sample Description: WS-007(0.5-1.0)021214 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7364406
LL Group # 1452684
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/12/2014 14:10 by DF

Submitted: 02/14/2014 14:00
Reported: 02/26/2014 14:05

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P8502 SDG#: PEM85-02

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	0.011 J	0.010	0.051	1
08357	Benzo(a)anthracene	56-55-3	0.027 J	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	0.030 J	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	0.086	0.010	0.051	1
08357	Benzo(g,h,i)perylene	191-24-2	0.031 J	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	0.029 J	0.010	0.051	1
08357	Chrysene	218-01-9	0.058	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	0.088	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	0.028 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.	0.031	0.051	1
08357	Phenanthrene	85-01-8	N.D.	0.031	0.051	1
08357	Pyrene	129-00-0	0.090	0.010	0.051	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

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	14046WAI026	02/21/2014 21:00	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14046WAI026	02/17/2014 09:45	Anna E Stager	1

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

Sample Description: WS-009(Surface)021214 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7364407
LL Group # 1452684
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/12/2014 14:20 by DF

Submitted: 02/14/2014 14:00
Reported: 02/26/2014 14:05

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P8503 SDG#: PEM85-03

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	0.029 J	0.010	0.051	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

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	14046WAI026	02/21/2014 21:28	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14046WAI026	02/17/2014 09:45	Anna E Stager	1

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

Sample Description: WS-001(0.5-1.0)021214 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7364408
LL Group # 1452684
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/12/2014 14:30 by DF

Submitted: 02/14/2014 14:00
Reported: 02/26/2014 14:05

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P8504 SDG#: PEM85-04

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	0.050	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.050	1
08357	Anthracene	120-12-7	N.D.	0.010	0.050	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.050	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.050	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.050	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.050	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.050	1
08357	Chrysene	218-01-9	N.D.	0.010	0.050	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.050	1
08357	Fluoranthene	206-44-0	0.012 J	0.010	0.050	1
08357	Fluorene	86-73-7	N.D.	0.010	0.050	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.050	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.050	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.050	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.050	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.050	1
08357	Pyrene	129-00-0	0.032 J	0.010	0.050	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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14046WAI026	02/21/2014 21:56	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14046WAI026	02/17/2014 09:45	Anna E Stager	1

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

Sample Description: WS-021(Surface)021214 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7364409
LL Group # 1452684
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/12/2014 14:40 by DF

Submitted: 02/14/2014 14:00
Reported: 02/26/2014 14:05

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P8505 SDG#: PEM85-05

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	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 recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

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	14046WAI026	02/21/2014 22:24	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14046WAI026	02/17/2014 09:45	Anna E Stager	1

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

Sample Description: WS-004(0.5-1.0)021214 Grab Surface Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7364410
LL Group # 1452684
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/12/2014 14:50 by DF

Submitted: 02/14/2014 14:00
Reported: 02/26/2014 14:05

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P8506 SDG#: PEM85-06

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	0.050	1
08357	Acenaphthylene	208-96-8	N.D.	0.010	0.050	1
08357	Anthracene	120-12-7	N.D.	0.010	0.050	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.050	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.050	1
08357	Benzo(b)fluoranthene	205-99-2	0.018 J	0.010	0.050	1
08357	Benzo(g,h,i)perylene	191-24-2	N.D.	0.010	0.050	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.050	1
08357	Chrysene	218-01-9	0.013 J	0.010	0.050	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.050	1
08357	Fluoranthene	206-44-0	0.016 J	0.010	0.050	1
08357	Fluorene	86-73-7	N.D.	0.010	0.050	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.050	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.050	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.050	1
08357	Naphthalene	91-20-3	N.D.	0.030	0.050	1
08357	Phenanthrene	85-01-8	N.D.	0.030	0.050	1
08357	Pyrene	129-00-0	0.015 J	0.010	0.050	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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14046WAI026	02/21/2014 22:52	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14046WAI026	02/17/2014 09:45	Anna E Stager	1

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

Sample Description: WS-EB-127-021314 Grab Water
S20135565 Mayflower, AR
Pipeline Incident

LL Sample # WW 7364411
LL Group # 1452684
Account # 14739

Project Name: Mayflower, AR Pipeline Incident

Collected: 02/13/2014 16:00 by DF

Submitted: 02/14/2014 14:00
Reported: 02/26/2014 14:05

ExxonMobil
PO Box 4592
Houston TX 77210-4592

P8507 SDG#: PEM85-07EB

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.	0.011	0.053	1
08357	Acenaphthylene	208-96-8	N.D.	0.011	0.053	1
08357	Anthracene	120-12-7	N.D.	0.011	0.053	1
08357	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.053	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.053	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.053	1
08357	Benzo(g,h,i)perylene	191-24-2	0.13	0.011	0.053	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.053	1
08357	Chrysene	218-01-9	N.D.	0.011	0.053	1
08357	Dibenz(a,h)anthracene	53-70-3	0.11	0.011	0.053	1
08357	Fluoranthene	206-44-0	N.D.	0.011	0.053	1
08357	Fluorene	86-73-7	N.D.	0.011	0.053	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	0.099	0.011	0.053	1
08357	1-Methylnaphthalene	90-12-0	N.D.	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.011	0.053	1
08357	Naphthalene	91-20-3	0.12	0.032	0.053	1
08357	Phenanthrene	85-01-8	N.D.	0.032	0.053	1
08357	Pyrene	129-00-0	N.D.	0.011	0.053	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
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	14046WAI026	02/21/2014 23:20	Chad A Moline	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	14046WAI026	02/17/2014 09:45	Anna E Stager	1

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

Quality Control Summary

Client Name: ExxonMobil Group Number: 1452684
Reported: 02/26/14 at 02:05 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: 14046WAI026	Sample number(s): 7364405-7364411								
Acenaphthene	N.D.	0.010	0.050	ug/l	108		83-119		
Acenaphthylene	N.D.	0.010	0.050	ug/l	108		81-130		
Anthracene	N.D.	0.010	0.050	ug/l	105		83-125		
Benzo(a)anthracene	N.D.	0.010	0.050	ug/l	98		79-122		
Benzo(a)pyrene	N.D.	0.010	0.050	ug/l	95		80-121		
Benzo(b)fluoranthene	N.D.	0.010	0.050	ug/l	110		79-136		
Benzo(g,h,i)perylene	N.D.	0.010	0.050	ug/l	102		72-132		
Benzo(k)fluoranthene	N.D.	0.010	0.050	ug/l	95		81-131		
Chrysene	N.D.	0.010	0.050	ug/l	102		84-118		
Dibenz(a,h)anthracene	N.D.	0.010	0.050	ug/l	91		66-133		
Fluoranthene	N.D.	0.010	0.050	ug/l	93		84-124		
Fluorene	N.D.	0.010	0.050	ug/l	109		82-119		
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050	ug/l	94		68-132		
1-Methylnaphthalene	N.D.	0.010	0.050	ug/l	101		86-130		
2-Methylnaphthalene	N.D.	0.010	0.050	ug/l	112		81-131		
Naphthalene	N.D.	0.030	0.050	ug/l	102		82-122		
Phenanthrene	N.D.	0.030	0.050	ug/l	97		83-116		
Pyrene	N.D.	0.010	0.050	ug/l	109		78-125		

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: 14046WAI026	Sample number(s): 7364405-7364411 UNSPK: P364422								
Acenaphthene	102	104	60-130	14	30				
Acenaphthylene	103	105	75-132	15	30				
Anthracene	96	98	69-119	14	30				
Benzo(a)anthracene	83	89	37-135	19	30				
Benzo(a)pyrene	69	83	64-123	30	30				
Benzo(b)fluoranthene	80	89	41-137	23	30				
Benzo(g,h,i)perylene	76	96	21-127	36*	30				
Benzo(k)fluoranthene	69	89	38-130	36*	30				
Chrysene	79	86	58-117	21	30				
Dibenz(a,h)anthracene	74	95	17-134	37*	30				
Fluoranthene	77	79	63-129	15	30				
Fluorene	104	107	74-127	14	30				
Indeno(1,2,3-cd)pyrene	70	91	26-130	37*	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: 1452684
Reported: 02/26/14 at 02:05 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
1-Methylnaphthalene	95	97	82-133	14	30				
2-Methylnaphthalene	105	108	73-138	15	30				
Naphthalene	98	100	58-131	14	30				
Phenanthrene	98	98	72-126	13	30				
Pyrene	92	94	36-142	14	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: 14046WAI026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7364405	78	66	89
7364406	67	49*	80
7364407	77	61*	89
7364408	82	69	92
7364409	75	55*	85
7364410	77	71	85
7364411	79	83	89
Blank	83	92	94
LCS	84	90	97
MS	79	68	91
MSD	81	84	92
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

eurofins | Lancaster Laboratories Environmental

Acct. # 14739 | For Eurofins Lancaster Laboratories Environmental use only: Group # 1453684 Sample # 7364405-11

Instructions on reverse side correspond with circled numbers.

SCR#: _____

1 Client Information

Facility #/SID: Mayflower Pipeline Incident

Site Address: Mayflower AR

ExxonMobil PM: Scott Bushroe | Cost Center/AFE:

Consultant/Office: Arcadis

Consultant PM: Steve Barrick | Consultant Phone #:

Sampler: D. FitzGerald / M. Hamby / Z. Powers

3 Grab / Composite

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

5 Analyses Requested — Preservation Code

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

6 Remarks: 4140 2909

2 Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	PAH 8270
WS-020 (surface) 021214	2/12/14	1035	X		2	X
WS-007 (0.5-1.0) 021214	2/12/14	1410	X		2	X
WS-009 (surface) 021214	2/12/14	1420	X		2	X
WS-001 (0.5-1.0) 021214	2/12/14	1430	X		2	X
WS-021 (surface) 021214	2/12/14	1440	X		2	X
WS-004 (0.5-1.0) 021214	2/12/14	1450	X		2	X
WS-EB-127-021314	2/13/14	1600	X		2	X

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
D. FitzGerald	2/13/14	1700	UPS		

Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____

Received by: _____ Date: 4/14/14 Time: 1400

Temperature Upon Receipt 0.8 °C

Custody Seals Intact? Yes No

9

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Sample Administration Receipt Documentation Log

Doc Log ID: 4763

Group Number(s): 1452684

Client: ExxonMobil

Mayflower Pipeline Incident

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	02/14/2014 14:00
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	AR		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	0
Custody Seal Present:	Yes	Trip Blank Type:	N/A
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 Wesley Miller (2308) at 16:28 on 02/14/2014

Samples Chilled Details: Mayflower Pipeline Incident

Thermometer Types: DT = Digital IR = Infrared

Cooler #	Thermometer ID	Raw Temp (°C)	Corrected Temp (°C)	Thermometer Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	0.8	0.8	DT	Wet	Y	Bagged	N

General Comments:

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.