May 1, 2015

Stan Spencer
NW Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
796 Megan Ave, Suite 201,
Rifle, CO 81650

Re: GM 442-20 Historical Impact Closure Request

Dear Mr. Spencer,

Attached are the laboratory reports and the sample location map for soil samples collected from the excavated area and landfarmed material in order to close the historical release that occurred at the GM 442-20 well pad and was discovered on August 6, 2014.
The impacted soil was excavated and five grab confirmation samples were collected from the bottom and walls of the excavation. Due to the pad size constraints, the soil was landfarmed on location in three separate batches. One composite sample was collected from each landfarm batch. All samples were analyzed for an abbreviated list of Table 910-1 analytes which included TPH, BTEX, PAHs, and inorganics. The list was approved by COGCC on February 5, 2015 (Document # 400785233).

As the attached laboratory reports indicate, the constituents of concern listed above, tested below the cleanup requirements. Based on these results, WPX respectfully requests closure of this incident.

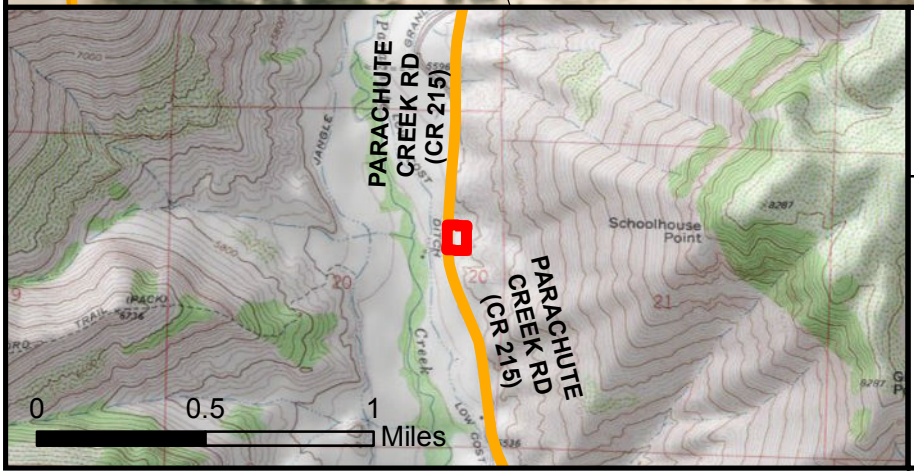
Please do not hesitate to contact me at (970) 683-2295 should you have any questions or concerns regarding this information.

Sincerely,

Karolina Blaney

Karolina Blaney
Environmental Specialist

Attachments (2)
- Sampling Location Map
- Laboratory Reports



Sample Location Map

GM 442-20

39.511476 -108.125784
Section 20, Township 6 South, Range 96 West

- Sample Location
- Spill Location
- Road (from Garfield County)
- Existing Road
- Stream
- Existing Pad
- River

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WPXENERGY

T:\Projects\PIC_MultiProspect\Ongoing\Spill_Mapping\SampleLocation_Map.mxd Atankers 2/12/2015 9:31:08 AM

Contaminant of Concern ↓	COGCC standards	Location →	Bottom 7'	West Wall	North Wall	South Wall	East Wall	Landfarm Batch 1	Landfarm Batch 2	Landfarm Batch 3
		Date Sampled →	2/3/2015	2/3/2015	2/3/2015	2/3/2015	2/3/2015	2/12/2015	3/23/2015	4/6/2015
Organic Compounds in Soil										
TPH (DRO+GRO)	500	mg/kg	ND	ND	19	ND	1.4	133.3	262.0	171.0
DRO		mg/kg	ND	ND	16	ND	1.4	130	72	61
GRO		mg/kg	ND	ND	2.5	ND	ND	3.3	190	110
Benzene	0.17	mg/kg	ND	ND	ND	ND	0.0026	ND	ND	ND
Toluene	85	mg/kg	ND	ND	ND	ND	ND	ND	0.05	ND
Ethylbenzene	100	mg/kg	ND	ND	0.014	ND	0.030	ND	0.04	ND
Xylenes (Total)	175	mg/kg	ND	ND	0.037	ND	0.028	ND	0.88	0.18
Acenaphthene	1,000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	1,000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(A)anthracene	0.22	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(B)fluoranthene	0.22	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(K)fluoranthene	2.2	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(A)pyrene	0.022	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	22	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(A,H)anthracene	0.022	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	1,000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	1,000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	23	mg/kg	ND	ND	ND	ND	ND	0.028	ND	ND
Pyrene	1,000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics in Soil										
EC	<4 or 2 x background	mmhos/cm	1.2	2.7	4.1	1.4	9.2	NT	10	12
SAR	<12		7	3.6	6.2	2.8	12	NT	15	10
pH	6-9		8.8	8.3	8.3	8.2	9.2	NT	8	8

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Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Tuesday February 10, 2015

Report Number: L746967
Samples Received: 02/04/15
Client Project: GM 442-20

Description: GM 442-20

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-01

Site ID : GM 442-20

Project # : GM 442-20

Date Received : February 04, 2015
Description : GM 442-20

Sample ID : BOTTOM 7FT

Collected By :
Collection Date : 02/03/15 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Toluene	BDL	0.025	mg/kg	8021	02/06/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	02/06/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	02/06/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.9		% Rec.	8015	02/06/15	5
a,a,a-Trifluorotoluene(PID)	97.9		% Rec.	8021	02/06/15	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	02/05/15	1
Surrogate recovery(%)						
o-Terphenyl	64.3		% Rec.	3546/DRO	02/05/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	02/05/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Surrogate Recovery						
Nitrobenzene-d5	88.0		% Rec.	8270C-SIM	02/05/15	1
2-Fluorobiphenyl	88.2		% Rec.	8270C-SIM	02/05/15	1
p-Terphenyl-d14	79.1		% Rec.	8270C-SIM	02/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-02

Date Received : February 04, 2015
Description : GM 442-20

Site ID : GM 442-20

Sample ID : BOTTOM 7FT

Project # : GM 442-20

Collected By :
Collection Date : 02/03/15 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.8	0.10	su	9045D	02/05/15	1
Sodium Adsorption Ratio	7.0			Calc.	02/08/15	1
Specific Conductance	1200		umhos/cm	9050AMod	02/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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L746967-02 (PH) - 8.8@22.6c

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-03

Site ID : GM 442-20

Project # : GM 442-20

Date Received : February 04, 2015
Description : GM 442-20

Sample ID : WEST WALL 4FT

Collected By :
Collection Date : 02/03/15 08:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Toluene	BDL	0.025	mg/kg	8021	02/06/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	02/06/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	02/06/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.0		% Rec.	8015	02/06/15	5
a,a,a-Trifluorotoluene(PID)	97.7		% Rec.	8021	02/06/15	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	02/05/15	1
Surrogate recovery(%)						
o-Terphenyl	63.6		% Rec.	3546/DRO	02/05/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	02/05/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Surrogate Recovery						
Nitrobenzene-d5	80.0		% Rec.	8270C-SIM	02/05/15	1
2-Fluorobiphenyl	85.1		% Rec.	8270C-SIM	02/05/15	1
p-Terphenyl-d14	76.8		% Rec.	8270C-SIM	02/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-04

Date Received : February 04, 2015
Description : GM 442-20

Site ID : GM 442-20

Sample ID : WEST WALL 4FT

Project # : GM 442-20

Collected By :
Collection Date : 02/03/15 08:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.3	0.10	su	9045D	02/05/15	1
Sodium Adsorption Ratio	3.6			Calc.	02/08/15	1
Specific Conductance	2700		umhos/cm	9050AMod	02/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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L746967-04 (PH) - 8.3@22.0c

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-05

Site ID : GM 442-20

Project # : GM 442-20

Date Received : February 04, 2015
Description : GM 442-20

Sample ID : NORTH WALL 4FT

Collected By :
Collection Date : 02/03/15 08:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Toluene	BDL	0.025	mg/kg	8021	02/06/15	5
Ethylbenzene	0.014	0.0025	mg/kg	8021	02/06/15	5
Total Xylene	0.037	0.0075	mg/kg	8021	02/06/15	5
TPH (GC/FID) Low Fraction	2.5	0.50	mg/kg	8015	02/06/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.4		% Rec.	8015	02/06/15	5
a,a,a-Trifluorotoluene(PID)	97.2		% Rec.	8021	02/06/15	5
TPH (GC/FID) High Fraction	16.	4.0	mg/kg	3546/DRO	02/05/15	1
Surrogate recovery(%)						
o-Terphenyl	51.2		% Rec.	3546/DRO	02/05/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	02/05/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Surrogate Recovery						
Nitrobenzene-d5	84.8		% Rec.	8270C-SIM	02/05/15	1
2-Fluorobiphenyl	86.6		% Rec.	8270C-SIM	02/05/15	1
p-Terphenyl-d14	89.2		% Rec.	8270C-SIM	02/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-06

Date Received : February 04, 2015
Description : GM 442-20

Site ID : GM 442-20

Sample ID : NORTH WALL 4FT

Project # : GM 442-20

Collected By :
Collection Date : 02/03/15 08:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.3	0.10	su	9045D	02/05/15	1
Sodium Adsorption Ratio	6.2			Calc.	02/08/15	1
Specific Conductance	4100		umhos/cm	9050AMod	02/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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L746967-06 (PH) - 8.3@21.9c

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-07

Site ID : GM 442-20

Project # : GM 442-20

Date Received : February 04, 2015
Description : GM 442-20

Sample ID : SOUTH WALL 4FT

Collected By :
Collection Date : 02/03/15 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Toluene	BDL	0.025	mg/kg	8021	02/06/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	02/06/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	02/06/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.7		% Rec.	8015	02/06/15	5
a,a,a-Trifluorotoluene(PID)	97.2		% Rec.	8021	02/06/15	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	02/05/15	1
Surrogate recovery(%)						
o-Terphenyl	59.4		% Rec.	3546/DRO	02/05/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	02/05/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Surrogate Recovery						
Nitrobenzene-d5	90.8		% Rec.	8270C-SIM	02/05/15	1
2-Fluorobiphenyl	95.3		% Rec.	8270C-SIM	02/05/15	1
p-Terphenyl-d14	98.5		% Rec.	8270C-SIM	02/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-08

Date Received : February 04, 2015
Description : GM 442-20

Site ID : GM 442-20

Sample ID : SOUTH WALL 4FT

Project # : GM 442-20

Collected By :
Collection Date : 02/03/15 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.2	0.10	su	9045D	02/05/15	1
Sodium Adsorption Ratio	2.8			Calc.	02/08/15	1
Specific Conductance	1400		umhos/cm	9050AMod	02/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L746967-08 (PH) - 8.2@21.7c

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REPORT OF ANALYSIS

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WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-09

Site ID : GM 442-20

Project # : GM 442-20

Date Received : February 04, 2015
Description : GM 442-20

Sample ID : EAST WALL 4FT

Collected By :
Collection Date : 02/03/15 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0026	0.0025	mg/kg	8021	02/06/15	5
Toluene	BDL	0.025	mg/kg	8021	02/06/15	5
Ethylbenzene	0.030	0.0025	mg/kg	8021	02/06/15	5
Total Xylene	0.028	0.0075	mg/kg	8021	02/06/15	5
TPH (GC/FID) Low Fraction	1.4	0.50	mg/kg	8015	02/06/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.3		% Rec.	8015	02/06/15	5
a,a,a-Trifluorotoluene(PID)	97.7		% Rec.	8021	02/06/15	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	02/05/15	1
Surrogate recovery(%)						
o-Terphenyl	70.3		% Rec.	3546/DRO	02/05/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	02/05/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/05/15	1
Surrogate Recovery						
Nitrobenzene-d5	83.3		% Rec.	8270C-SIM	02/05/15	1
2-Fluorobiphenyl	84.9		% Rec.	8270C-SIM	02/05/15	1
p-Terphenyl-d14	72.6		% Rec.	8270C-SIM	02/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 02/10/15 14:07 Printed: 02/10/15 14:07

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REPORT OF ANALYSIS

Ms.Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 10, 2015

ESC Sample # : L746967-10

Date Received : February 04, 2015
Description : GM 442-20

Site ID : GM 442-20

Sample ID : EAST WALL 4FT

Project # : GM 442-20

Collected By :
Collection Date : 02/03/15 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	9.2	0.10	su	9045D	02/05/15	1
Sodium Adsorption Ratio	12.			Calc.	02/08/15	1
Specific Conductance	1500		umhos/cm	9050AMod	02/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 02/10/15 14:07 Printed: 02/10/15 14:07
L746967-10 (PH) - 9.2@22.1c

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1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L746967

February 10, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Acenaphthene	< .006	mg/kg			WG768623	02/05/15 13:28
Anthracene	< .006	mg/kg			WG768623	02/05/15 13:28
Benzo(a)anthracene	< .006	mg/kg			WG768623	02/05/15 13:28
Benzo(a)pyrene	< .006	mg/kg			WG768623	02/05/15 13:28
Benzo(b)fluoranthene	< .006	mg/kg			WG768623	02/05/15 13:28
Benzo(k)fluoranthene	< .006	mg/kg			WG768623	02/05/15 13:28
Chrysene	< .006	mg/kg			WG768623	02/05/15 13:28
Dibenz(a,h)anthracene	< .006	mg/kg			WG768623	02/05/15 13:28
Fluoranthene	< .006	mg/kg			WG768623	02/05/15 13:28
Fluorene	< .006	mg/kg			WG768623	02/05/15 13:28
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG768623	02/05/15 13:28
Naphthalene	< .02	mg/kg			WG768623	02/05/15 13:28
Pyrene	< .006	mg/kg			WG768623	02/05/15 13:28
2-Fluorobiphenyl		% Rec.	104.0	38.2-135	WG768623	02/05/15 13:28
Nitrobenzene-d5		% Rec.	96.70	28.4-151	WG768623	02/05/15 13:28
p-Terphenyl-d14		% Rec.	109.0	34.2-141	WG768623	02/05/15 13:28
TPH (GC/FID) High Fraction	< 4	mg/kg			WG768503	02/05/15 18:33
o-Terphenyl		% Rec.	68.40	50-150	WG768503	02/05/15 18:33
Benzene	< .0005	mg/kg			WG768598	02/06/15 12:19
Ethylbenzene	< .0005	mg/kg			WG768598	02/06/15 12:19
Toluene	< .005	mg/kg			WG768598	02/06/15 12:19
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG768598	02/06/15 12:19
Total Xylene	< .0015	mg/kg			WG768598	02/06/15 12:19
a,a,a-Trifluorotoluene(FID)		% Rec.	95.30	59-128	WG768598	02/06/15 12:19
a,a,a-Trifluorotoluene(PID)		% Rec.	99.50	54-144	WG768598	02/06/15 12:19
Specific Conductance	0.760	umhos/cm			WG768942	02/07/15 12:30

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	12.0	12.0	1.68*	1	L746813-01	WG768514
pH	su	4.60	4.60	0.217	1	L746987-06	WG768514
Specific Conductance	umhos/cm	1200	1200	0.0	20	L746967-02	WG768942
Specific Conductance	umhos/cm	3200	3500	7.41	20	L747206-09	WG768942

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	5.9	5.88	99.7	98.3-101.7	WG768514
Acenaphthene	mg/kg	.08	0.0676	84.5	48.7-127	WG768623
Anthracene	mg/kg	.08	0.0804	100.	51.3-136	WG768623
Benzo(a)anthracene	mg/kg	.08	0.0695	86.9	55-126	WG768623
Benzo(a)pyrene	mg/kg	.08	0.0617	77.1	51.9-127	WG768623
Benzo(b)fluoranthene	mg/kg	.08	0.0629	78.6	54-125	WG768623
Benzo(k)fluoranthene	mg/kg	.08	0.0832	104.	53.9-132	WG768623
Chrysene	mg/kg	.08	0.0834	104.	55.7-133	WG768623
Dibenz(a,h)anthracene	mg/kg	.08	0.0856	107.	52.6-137	WG768623
Fluoranthene	mg/kg	.08	0.0728	91.0	54-132	WG768623
Fluorene	mg/kg	.08	0.0666	83.3	48.7-127	WG768623

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Parachute, CO 81635

Quality Assurance Report
Level II

L746967

February 10, 2015

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0857	107.	53.8-138	WG768623
Naphthalene	mg/kg	.08	0.0659	82.4	42-127	WG768623
Pyrene	mg/kg	.08	0.0781	97.6	54-129	WG768623
2-Fluorobiphenyl				89.90	38.2-135	WG768623
Nitrobenzene-d5				87.10	28.4-151	WG768623
p-Terphenyl-d14				92.60	34.2-141	WG768623
TPH (GC/FID) High Fraction	mg/kg	60	41.7	69.5	50-150	WG768503
o-Terphenyl				62.20	50-150	WG768503
Benzene	mg/kg	.05	0.0484	96.7	70-130	WG768598
Ethylbenzene	mg/kg	.05	0.0500	100.	70-130	WG768598
Toluene	mg/kg	.05	0.0485	97.0	70-130	WG768598
Total Xylene	mg/kg	.15	0.153	102.	70-130	WG768598
a,a,a-Trifluorotoluene(PID)				98.20	54-144	WG768598
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.03	91.5	63.5-137	WG768598
a,a,a-Trifluorotoluene(FID)				97.00	59-128	WG768598
Specific Conductance	umhos/cm	759	801.	106.	85-115	WG768942

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	5.89	5.88	100.	98.3-101.7	0.170	20	WG768514
Acenaphthene	mg/kg	0.0715	0.0676	89.0	48.7-127	5.50	20	WG768623
Anthracene	mg/kg	0.0859	0.0804	107.	51.3-136	6.63	20	WG768623
Benzo(a)anthracene	mg/kg	0.0739	0.0695	92.0	55-126	6.15	20	WG768623
Benzo(a)pyrene	mg/kg	0.0638	0.0617	80.0	51.9-127	3.29	20	WG768623
Benzo(b)fluoranthene	mg/kg	0.0663	0.0629	83.0	54-125	5.21	20	WG768623
Benzo(k)fluoranthene	mg/kg	0.0884	0.0832	110.	53.9-132	6.12	20	WG768623
Chrysene	mg/kg	0.0863	0.0834	108.	55.7-133	3.37	20	WG768623
Dibenz(a,h)anthracene	mg/kg	0.0909	0.0856	114.	52.6-137	6.03	20	WG768623
Fluoranthene	mg/kg	0.0791	0.0728	99.0	54-132	8.30	20	WG768623
Fluorene	mg/kg	0.0695	0.0666	87.0	48.7-127	4.26	20	WG768623
Indeno(1,2,3-cd)pyrene	mg/kg	0.0900	0.0857	112.	53.8-138	4.86	20	WG768623
Naphthalene	mg/kg	0.0694	0.0659	87.0	42-127	5.08	20	WG768623
Pyrene	mg/kg	0.0822	0.0781	103.	54-129	5.10	20	WG768623
2-Fluorobiphenyl				95.70	38.2-135			WG768623
Nitrobenzene-d5				92.90	28.4-151			WG768623
p-Terphenyl-d14				98.80	34.2-141			WG768623
TPH (GC/FID) High Fraction	mg/kg	49.0	41.7	82.0	50-150	16.2	20	WG768503
o-Terphenyl				71.80	50-150			WG768503
Benzene	mg/kg	0.0484	0.0484	97.0	70-130	0.170	20	WG768598
Ethylbenzene	mg/kg	0.0497	0.0500	99.0	70-130	0.620	20	WG768598
Toluene	mg/kg	0.0481	0.0485	96.0	70-130	0.850	20	WG768598
Total Xylene	mg/kg	0.151	0.153	101.	70-130	0.930	20	WG768598
a,a,a-Trifluorotoluene(PID)				98.00	54-144			WG768598
TPH (GC/FID) Low Fraction	mg/kg	5.00	5.03	91.0	63.5-137	0.540	20	WG768598
a,a,a-Trifluorotoluene(FID)				95.20	59-128			WG768598

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Quality Assurance Report
Level II

L746967

February 10, 2015

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Specific Conductance	umhos/	796.	801.	105.	85-115	0.626	20	WG768942

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Acenaphthene	mg/kg	0.0707	0.0	.08	88.0	39.4-132	L747000-01	WG768623
Anthracene	mg/kg	0.0895	0.00118	.08	110.	36.7-144	L747000-01	WG768623
Benzo(a)anthracene	mg/kg	0.0837	0.0114	.08	90.0	28-144	L747000-01	WG768623
Benzo(a)pyrene	mg/kg	0.0985	0.0175	.08	100.	23.8-147	L747000-01	WG768623
Benzo(b)fluoranthene	mg/kg	0.0947	0.0202	.08	93.0	18.2-147	L747000-01	WG768623
Benzo(k)fluoranthene	mg/kg	0.0881	0.00975	.08	98.0	26.5-143	L747000-01	WG768623
Chrysene	mg/kg	0.103	0.0137	.08	110.	27.4-150	L747000-01	WG768623
Dibenz(a,h)anthracene	mg/kg	0.0909	0.00250	.08	110.	13.8-150	L747000-01	WG768623
Fluoranthene	mg/kg	0.105	0.0196	.08	110.	23.2-158	L747000-01	WG768623
Fluorene	mg/kg	0.0677	0.0	.08	85.0	30.8-139	L747000-01	WG768623
Indeno(1,2,3-cd)pyrene	mg/kg	0.108	0.0162	.08	110.	10.7-155	L747000-01	WG768623
Naphthalene	mg/kg	0.0691	0.000849	.08	85.0	34.9-133	L747000-01	WG768623
Pyrene	mg/kg	0.106	0.0165	.08	110.	22.6-151	L747000-01	WG768623
2-Fluorobiphenyl					96.10	38.2-135		WG768623
Nitrobenzene-d5					91.80	28.4-151		WG768623
p-Terphenyl-d14					97.70	34.2-141		WG768623
TPH (GC/FID) High Fraction	mg/kg	45.6	0.391	60	75.0	50-150	L746812-10	WG768503
o-Terphenyl					71.90	50-150		WG768503
Benzene	mg/kg	0.207	0.000840	.05	82.0	49.7-127	L746967-01	WG768598
Ethylbenzene	mg/kg	0.208	0.000825	.05	83.0	40.8-141	L746967-01	WG768598
Toluene	mg/kg	0.214	0.00159	.05	85.0	49.8-132	L746967-01	WG768598
Total Xylene	mg/kg	0.638	0.00433	.15	84.0	41.2-140	L746967-01	WG768598
a,a,a-Trifluorotoluene(PID)					96.90	54-144		WG768598
TPH (GC/FID) Low Fraction	mg/kg	20.3	0.0924	5.5	74.0	28.5-138	L746967-01	WG768598
a,a,a-Trifluorotoluene(FID)					96.20	59-128		WG768598

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Acenaphthene	mg/kg	0.0660	0.0707	82.5	39.4-132	6.85	20	L747000-01	WG768623
Anthracene	mg/kg	0.0817	0.0895	101.	36.7-144	9.09	20.7	L747000-01	WG768623
Benzo(a)anthracene	mg/kg	0.0637	0.0837	65.4	28-144	27.2*	24.7	L747000-01	WG768623
Benzo(a)pyrene	mg/kg	0.0699	0.0985	65.5	23.8-147	33.9*	25.3	L747000-01	WG768623
Benzo(b)fluoranthene	mg/kg	0.0617	0.0947	51.9	18.2-147	42.2*	29.5	L747000-01	WG768623
Benzo(k)fluoranthene	mg/kg	0.0683	0.0881	73.2	26.5-143	25.3	26.1	L747000-01	WG768623
Chrysene	mg/kg	0.0750	0.103	76.7	27.4-150	31.5*	25.7	L747000-01	WG768623
Dibenz(a,h)anthracene	mg/kg	0.0729	0.0909	88.0	13.8-150	21.9	25.8	L747000-01	WG768623
Fluoranthene	mg/kg	0.0735	0.105	67.4	23.2-158	35.3*	26	L747000-01	WG768623
Fluorene	mg/kg	0.0637	0.0677	79.6	30.8-139	6.17	20	L747000-01	WG768623
Indeno(1,2,3-cd)pyrene	mg/kg	0.0790	0.108	78.4	10.7-155	30.6*	26.9	L747000-01	WG768623
Naphthalene	mg/kg	0.0669	0.0691	82.5	34.9-133	3.33	20.4	L747000-01	WG768623
Pyrene	mg/kg	0.0761	0.106	74.6	22.6-151	32.5*	25.1	L747000-01	WG768623
2-Fluorobiphenyl				86.60	38.2-135				WG768623
Nitrobenzene-d5				82.30	28.4-151				WG768623
p-Terphenyl-d14				88.30	34.2-141				WG768623
TPH (GC/FID) High Fraction	mg/kg	45.0	45.6	74.4	50-150	1.37	20	L746812-10	WG768503
o-Terphenyl				70.30	50-150				WG768503

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L746967

February 10, 2015

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/kg	0.223	0.207	89.0	49.7-127	7.81	23.5	L746967-01	WG768598
Ethylbenzene	mg/kg	0.217	0.208	86.6	40.8-141	4.48	23.8	L746967-01	WG768598
Toluene	mg/kg	0.219	0.214	86.9	49.8-132	2.18	23.5	L746967-01	WG768598
Total Xylene	mg/kg	0.659	0.638	87.2	41.2-140	3.19	23.7	L746967-01	WG768598
a,a,a-Trifluorotoluene(PID)				96.70	54-144				WG768598
TPH (GC/FID) Low Fraction	mg/kg	20.9	20.3	75.8	28.5-138	2.90	23.6	L746967-01	WG768598
a,a,a-Trifluorotoluene(FID)				94.90	59-128				WG768598

Batch number /Run number / Sample number cross reference

WG768514: R3018382: L746967-02 04 06 08 10
WG768623: R3018468 R3018781: L746967-01 03 05 07 09
WG768503: R3018543: L746967-01 03 05 07 09
WG768598: R3018618: L746967-01 03 05 07 09
WG768850: R3018773: L746967-02 04 06 08 10
WG768942: R3018805: L746967-02 04 06 08 10

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
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Quality Assurance Report
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February 10, 2015

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Est. 1970

Ms. Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Friday February 20, 2015

Report Number: L748902
Samples Received: 02/13/15
Client Project: GM 442-20 BATCH 1

Description: GM 442-20 Batch 1

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Alan Harvill

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 20, 2015

ESC Sample # : L748902-01

Site ID : GM 442-20 BATCH 1

Project # : GM 442-20 BATCH 1

Date Received : February 13, 2015
Description : GM 442-20 Batch 1

Sample ID : GM 442-20 BATCH 1

Collected By :
Collection Date : 02/12/15 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	02/18/15	5
Toluene	BDL	0.025	mg/kg	8021	02/18/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	02/18/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	02/18/15	5
TPH (GC/FID) Low Fraction	3.3	0.50	mg/kg	8015	02/18/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8015	02/18/15	1
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021	02/18/15	1
TPH (GC/FID) High Fraction	130	4.0	mg/kg	3546/DRO	02/19/15	1
Surrogate recovery(%)						
o-Terphenyl	57.7		% Rec.	3546/DRO	02/19/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Naphthalene	0.028	0.020	mg/kg	8270C-SIM	02/19/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/19/15	1
Surrogate Recovery						
Nitrobenzene-d5	119.		% Rec.	8270C-SIM	02/19/15	1
2-Fluorobiphenyl	75.1		% Rec.	8270C-SIM	02/19/15	1
p-Terphenyl-d14	70.1		% Rec.	8270C-SIM	02/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 02/20/15 12:35 Printed: 02/20/15 12:35

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Parachute, CO 81635

Quality Assurance Report
Level II

L748902

February 20, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .0005	mg/kg			WG770847	02/18/15 10:50
Ethylbenzene	< .0005	mg/kg			WG770847	02/18/15 10:50
Toluene	< .005	mg/kg			WG770847	02/18/15 10:50
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG770847	02/18/15 10:50
Total Xylene	< .0015	mg/kg			WG770847	02/18/15 10:50
a,a,a-Trifluorotoluene(FID)		% Rec.	104.0	59-128	WG770847	02/18/15 10:50
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	54-144	WG770847	02/18/15 10:50
Acenaphthene	< .006	mg/kg			WG770962	02/19/15 05:03
Anthracene	< .006	mg/kg			WG770962	02/19/15 05:03
Benzo(a)anthracene	< .006	mg/kg			WG770962	02/19/15 05:03
Benzo(a)pyrene	< .006	mg/kg			WG770962	02/19/15 05:03
Benzo(b)fluoranthene	< .006	mg/kg			WG770962	02/19/15 05:03
Benzo(k)fluoranthene	< .006	mg/kg			WG770962	02/19/15 05:03
Chrysene	< .006	mg/kg			WG770962	02/19/15 05:03
Dibenz(a,h)anthracene	< .006	mg/kg			WG770962	02/19/15 05:03
Fluoranthene	< .006	mg/kg			WG770962	02/19/15 05:03
Fluorene	< .006	mg/kg			WG770962	02/19/15 05:03
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG770962	02/19/15 05:03
Naphthalene	< .02	mg/kg			WG770962	02/19/15 05:03
Pyrene	< .006	mg/kg			WG770962	02/19/15 05:03
2-Fluorobiphenyl		% Rec.	83.40	38.2-135	WG770962	02/19/15 05:03
Nitrobenzene-d5		% Rec.	101.0	28.4-151	WG770962	02/19/15 05:03
p-Terphenyl-d14		% Rec.	76.20	34.2-141	WG770962	02/19/15 05:03
TPH (GC/FID) High Fraction	< 4	mg/kg			WG770800	02/19/15 16:31
o-Terphenyl		% Rec.	77.30	50-150	WG770800	02/19/15 16:31

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/kg	.05	0.0416	83.2	70-130	WG770847
Ethylbenzene	mg/kg	.05	0.0463	92.7	70-130	WG770847
Toluene	mg/kg	.05	0.0455	91.0	70-130	WG770847
Total Xylene	mg/kg	.15	0.148	99.0	70-130	WG770847
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG770847
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.23	95.1	63.5-137	WG770847
a,a,a-Trifluorotoluene(FID)				101.0	59-128	WG770847
Acenaphthene	mg/kg	.08	0.0617	77.1	48.7-127	WG770962
Anthracene	mg/kg	.08	0.0636	79.5	51.3-136	WG770962
Benzo(a)anthracene	mg/kg	.08	0.0619	77.3	55-126	WG770962
Benzo(a)pyrene	mg/kg	.08	0.0472	59.0	51.9-127	WG770962
Benzo(b)fluoranthene	mg/kg	.08	0.0592	74.0	54-125	WG770962
Benzo(k)fluoranthene	mg/kg	.08	0.0674	84.3	53.9-132	WG770962
Chrysene	mg/kg	.08	0.0679	84.9	55.7-133	WG770962
Dibenz(a,h)anthracene	mg/kg	.08	0.0663	82.9	52.6-137	WG770962
Fluoranthene	mg/kg	.08	0.0601	75.2	54-132	WG770962
Fluorene	mg/kg	.08	0.0604	75.5	48.7-127	WG770962
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0665	83.2	53.8-138	WG770962
Naphthalene	mg/kg	.08	0.0701	87.6	42-127	WG770962
Pyrene	mg/kg	.08	0.0692	86.5	54-129	WG770962
2-Fluorobiphenyl				82.50	38.2-135	WG770962
Nitrobenzene-d5				103.0	28.4-151	WG770962
p-Terphenyl-d14				74.20	34.2-141	WG770962

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Parachute, CO 81635

Quality Assurance Report
Level II

L748902

February 20, 2015

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
TPH (GC/FID) High Fraction	mg/kg	60	45.0	75.0	50-150	WG770800
o-Terphenyl				72.30	50-150	WG770800

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/kg	0.0425	0.0416	85.0	70-130	2.04	20	WG770847
Ethylbenzene	mg/kg	0.0471	0.0463	94.0	70-130	1.65	20	WG770847
Toluene	mg/kg	0.0462	0.0455	92.0	70-130	1.45	20	WG770847
Total Xylene	mg/kg	0.151	0.148	101.	70-130	1.78	20	WG770847
a,a,a-Trifluorotoluene(PID)				102.0	54-144			WG770847
TPH (GC/FID) Low Fraction	mg/kg	5.41	5.23	98.0	63.5-137	3.28	20	WG770847
a,a,a-Trifluorotoluene(FID)				102.0	59-128			WG770847
Acenaphthene	mg/kg	0.0588	0.0617	74.0	48.7-127	4.67	20	WG770962
Anthracene	mg/kg	0.0611	0.0636	76.0	51.3-136	3.92	20	WG770962
Benzo(a)anthracene	mg/kg	0.0582	0.0619	73.0	55-126	6.14	20	WG770962
Benzo(a)pyrene	mg/kg	0.0479	0.0472	60.0	51.9-127	1.43	20	WG770962
Benzo(b)fluoranthene	mg/kg	0.0564	0.0592	70.0	54-125	4.83	20	WG770962
Benzo(k)fluoranthene	mg/kg	0.0627	0.0674	78.0	53.9-132	7.19	20	WG770962
Chrysene	mg/kg	0.0642	0.0679	80.0	55.7-133	5.70	20	WG770962
Dibenz(a,h)anthracene	mg/kg	0.0621	0.0663	78.0	52.6-137	6.52	20	WG770962
Fluoranthene	mg/kg	0.0567	0.0601	71.0	54-132	5.93	20	WG770962
Fluorene	mg/kg	0.0572	0.0604	71.0	48.7-127	5.43	20	WG770962
Indeno(1,2,3-cd)pyrene	mg/kg	0.0626	0.0665	78.0	53.8-138	6.10	20	WG770962
Naphthalene	mg/kg	0.0668	0.0701	84.0	42-127	4.84	20	WG770962
Pyrene	mg/kg	0.0655	0.0692	82.0	54-129	5.54	20	WG770962
2-Fluorobiphenyl				77.40	38.2-135			WG770962
Nitrobenzene-d5				98.90	28.4-151			WG770962
p-Terphenyl-d14				68.90	34.2-141			WG770962
TPH (GC/FID) High Fraction	mg/kg	45.5	45.0	76.0	50-150	1.13	20	WG770800
o-Terphenyl				71.90	50-150			WG770800

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/kg	0.181	0.000444	.05	72.0	49.7-127	L748857-02	WG770847
Ethylbenzene	mg/kg	0.189	0.000212	.05	76.0	40.8-141	L748857-02	WG770847
Toluene	mg/kg	0.191	0.000394	.05	76.0	49.8-132	L748857-02	WG770847
Total Xylene	mg/kg	0.601	0.00116	.15	80.0	41.2-140	L748857-02	WG770847
a,a,a-Trifluorotoluene(PID)					101.0	54-144		WG770847
TPH (GC/FID) Low Fraction	mg/kg	20.2	0.0	5.5	73.0	28.5-138	L748857-02	WG770847
a,a,a-Trifluorotoluene(FID)					98.30	59-128		WG770847
Acenaphthene	mg/kg	0.0668	0.00462	.08	78.0	39.4-132	L749279-02	WG770962
Anthracene	mg/kg	0.0835	0.0120	.08	89.0	36.7-144	L749279-02	WG770962
Benzo(a)anthracene	mg/kg	0.112	0.0397	.08	91.0	28-144	L749279-02	WG770962
Benzo(a)pyrene	mg/kg	0.105	0.0387	.08	83.0	23.8-147	L749279-02	WG770962
Benzo(b)fluoranthene	mg/kg	0.114	0.0487	.08	81.0	18.2-147	L749279-02	WG770962
Benzo(k)fluoranthene	mg/kg	0.0733	0.0171	.08	70.0	26.5-143	L749279-02	WG770962
Chrysene	mg/kg	0.111	0.0393	.08	90.0	27.4-150	L749279-02	WG770962
Dibenz(a,h)anthracene	mg/kg	0.0661	0.0	.08	83.0	13.8-150	L749279-02	WG770962
Fluoranthene	mg/kg	0.215	0.101	.08	140.	23.2-158	L749279-02	WG770962
Fluorene	mg/kg	0.0705	0.00669	.08	80.0	30.8-139	L749279-02	WG770962

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L748902

February 20, 2015

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Indeno(1,2,3-cd)pyrene	mg/kg	0.0875	0.00108	.08	110.	10.7-155	L749279-02	WG770962
Naphthalene	mg/kg	0.0658	0.00545	.08	75.0	34.9-133	L749279-02	WG770962
Pyrene	mg/kg	0.164	0.0709	.08	120.	22.6-151	L749279-02	WG770962
2-Fluorobiphenyl					87.20	38.2-135		WG770962
Nitrobenzene-d5					108.0	28.4-151		WG770962
p-Terphenyl-d14					75.10	34.2-141		WG770962
TPH (GC/FID) High Fraction	mg/kg	42.8	0.509	60	70.0	50-150	L748930-02	WG770800
o-Terphenyl					66.90	50-150		WG770800

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/kg	0.203	0.181	81.2	49.7-127	11.9	23.5	L748857-02	WG770847
Ethylbenzene	mg/kg	0.215	0.189	85.8	40.8-141	12.5	23.8	L748857-02	WG770847
Toluene	mg/kg	0.218	0.191	87.0	49.8-132	13.3	23.5	L748857-02	WG770847
Total Xylene	mg/kg	0.677	0.601	90.1	41.2-140	11.9	23.7	L748857-02	WG770847
a,a,a-Trifluorotoluene(PID)				101.0	54-144				WG770847
TPH (GC/FID) Low Fraction	mg/kg	20.8	20.2	75.7	28.5-138	3.13	23.6	L748857-02	WG770847
a,a,a-Trifluorotoluene(FID)				96.70	59-128				WG770847
Acenaphthene	mg/kg	0.0619	0.0668	71.6	39.4-132	7.61	20	L749279-02	WG770962
Anthracene	mg/kg	0.0775	0.0835	81.8	36.7-144	7.48	20.7	L749279-02	WG770962
Benzo(a)anthracene	mg/kg	0.103	0.112	78.6	28-144	9.00	24.7	L749279-02	WG770962
Benzo(a)pyrene	mg/kg	0.101	0.105	77.7	23.8-147	4.39	25.3	L749279-02	WG770962
Benzo(b)fluoranthene	mg/kg	0.104	0.114	69.7	18.2-147	8.48	29.5	L749279-02	WG770962
Benzo(k)fluoranthene	mg/kg	0.0644	0.0733	59.1	26.5-143	12.9	26.1	L749279-02	WG770962
Chrysene	mg/kg	0.105	0.111	82.7	27.4-150	5.14	25.7	L749279-02	WG770962
Dibenz(a,h)anthracene	mg/kg	0.0616	0.0661	77.0	13.8-150	7.09	25.8	L749279-02	WG770962
Fluoranthene	mg/kg	0.187	0.215	107.	23.2-158	13.9	26	L749279-02	WG770962
Fluorene	mg/kg	0.0637	0.0705	71.2	30.8-139	10.1	20	L749279-02	WG770962
Indeno(1,2,3-cd)pyrene	mg/kg	0.0843	0.0875	104.	10.7-155	3.82	26.9	L749279-02	WG770962
Naphthalene	mg/kg	0.0623	0.0658	71.1	34.9-133	5.41	20.4	L749279-02	WG770962
Pyrene	mg/kg	0.145	0.164	92.5	22.6-151	12.5	25.1	L749279-02	WG770962
2-Fluorobiphenyl				84.40	38.2-135				WG770962
Nitrobenzene-d5				103.0	28.4-151				WG770962
p-Terphenyl-d14				76.10	34.2-141				WG770962
TPH (GC/FID) High Fraction	mg/kg	40.7	42.8	67.0	50-150	5.07	20	L748930-02	WG770800
o-Terphenyl				67.30	50-150				WG770800

Batch number /Run number / Sample number cross reference

WG770847: R3020388: L748902-01
WG770962: R3020623 R3020627 R3020742: L748902-01
WG770800: R3020789: L748902-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Parachute, CO 81635

Quality Assurance Report
Level II

L748902

February 20, 2015

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

27-Mar-2015

Karolina Blaney
WPX Energy Rocky Mountain, LLC
1058 Country Rd 215
Parachute, CO 81635

Re: **GM 442-20 Batch 2** Work Order: **15031322**

Dear Karolina,

ALS Environmental received 1 sample on 24-Mar-2015 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 25.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 532786

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 27-Mar-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 442-20 Batch 2
Work Order: **15031322**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
15031322-01	GM 442-20 Batch 2	Soil		3/23/2015 14:30	3/24/2015 09:30	☐

ALS Group USA, Corp

Date: 27-Mar-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 442-20 Batch 2
Work Order: 15031322

Case Narrative

Batch 69005, Method ICP_6010_SOL, Sample 15031322-01B: The metals reporting limits are elevated due to dilution needed to eliminate matrix-related interference.

ALS Group USA, Corp

Date: 27-Mar-15

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: *27-Mar-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 442-20 Batch 2 **Work Order:** 15031322
Sample ID: GM 442-20 Batch 2 **Lab ID:** 15031322-01
Collection Date: 3/23/2015 02:30 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 3/24/15	Analyst: **IT**
DRO (C10-C28)	**72**		**4.5**	**mg/Kg-dry**	1	3/25/2015 01:11 PM
Surr: 4-Terphenyl-d14	*60.7*		*39-133*	*%REC*	1	3/25/2015 01:11 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 3/24/15	Analyst: **IT**
GRO (C6-C10)	**190**		**2.7**	**mg/Kg-dry**	1	3/25/2015 12:13 PM
Surr: Toluene-d8	*116*		*50-150*	*%REC*	1	3/25/2015 12:13 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 3/26/15	Analyst: **JEC**
Calcium	**470**		**5.0**	**mg/L**	10	3/26/2015 04:07 PM
Magnesium	ND		2.0	mg/L	10	3/26/2015 04:07 PM
Sodium	**1,200**		**2.0**	**mg/L**	10	3/26/2015 04:07 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 3/26/15	Analyst: **JEC**
Sodium Adsorption Ratio	**15**		**0.010**	**none**	1	3/26/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 3/26/15	Analyst: **RS**
Acenaphthene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Anthracene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Benzo(a)anthracene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Benzo(a)pyrene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Benzo(b)fluoranthene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Benzo(g,h,i)perylene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Benzo(k)fluoranthene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Chrysene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Dibenzo(a,h)anthracene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Fluoranthene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Fluorene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Indeno(1,2,3-cd)pyrene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Naphthalene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Pyrene	ND		7.1	µg/Kg-dry	1	3/26/2015 08:23 PM
Surr: 2,4,6-Tribromophenol	*73.7*		*34-140*	*%REC*	1	3/26/2015 08:23 PM
Surr: 2-Fluorobiphenyl	*66.8*		*12-100*	*%REC*	1	3/26/2015 08:23 PM
Surr: 2-Fluorophenol	*68.2*		*33-117*	*%REC*	1	3/26/2015 08:23 PM
Surr: 4-Terphenyl-d14	*84.8*		*25-137*	*%REC*	1	3/26/2015 08:23 PM
Surr: Nitrobenzene-d5	*71.6*		*37-107*	*%REC*	1	3/26/2015 08:23 PM
Surr: Phenol-d6	*65.4*		*40-106*	*%REC*	1	3/26/2015 08:23 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 3/24/15	Analyst: **LSY**
Benzene	ND		33	µg/Kg-dry	1	3/24/2015 10:46 PM
Ethylbenzene	**41**		**33**	**µg/Kg-dry**	1	3/24/2015 10:46 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *27-Mar-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 442-20 Batch 2 **Work Order:** 15031322
Sample ID: GM 442-20 Batch 2 **Lab ID:** 15031322-01
Collection Date: 3/23/2015 02:30 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
m,p-Xylene	**800**		**66**	**µg/Kg-dry**	1	3/24/2015 10:46 PM
o-Xylene	**79**		**33**	**µg/Kg-dry**	1	3/24/2015 10:46 PM
Toluene	**52**		**33**	**µg/Kg-dry**	1	3/24/2015 10:46 PM
Xylenes, Total	**880**		**99**	**µg/Kg-dry**	1	3/24/2015 10:46 PM
Surr: 1,2-Dichloroethane-d4	*95.8*		*70-130*	*%REC*	1	3/24/2015 10:46 PM
Surr: 4-Bromofluorobenzene	*101*		*70-130*	*%REC*	1	3/24/2015 10:46 PM
Surr: Dibromofluoromethane	*89.7*		*70-130*	*%REC*	1	3/24/2015 10:46 PM
Surr: Toluene-d8	*106*		*70-130*	*%REC*	1	3/24/2015 10:46 PM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**	Prep: USDA Method 20B / 3/26/15		Analyst: **JB**
Electrical Conductivity @ Saturation	**10**		**0.050**	**mmhos/cm @2**	10	3/26/2015 09:00 PM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**8.7**		**0.050**	**% of sample**	1	3/24/2015 04:40 PM
PH			**SW9045D**	Prep: EXTRACT / 3/24/15		Analyst: **JRF**
pH	**8.0**			**s.u.**	1	3/25/2015 12:30 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **68962** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-68962-68962** Units: **mg/Kg** Analysis Date: **3/25/2015 10:11 AM**

Client ID: Run ID: **GC8_150325A** SeqNo: **3194320** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	*1.662*	0	*2*	0	*83.1*	*39-133*	0			

LCS Sample ID: **DLCSS1-68962-68962** Units: **mg/Kg** Analysis Date: **3/25/2015 10:41 AM**

Client ID: Run ID: **GC8_150325A** SeqNo: **3194321** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	189.7	5.0	200	0	94.9	61-109	0			
Surr: 4-Terphenyl-d14	*1.442*	0	*2*	0	*72.1*	*39-133*	0			

MS Sample ID: **15031217-06B MS** Units: **mg/Kg** Analysis Date: **3/25/2015 11:11 AM**

Client ID: Run ID: **GC8_150325A** SeqNo: **3194323** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	346.2	8.0	318.4	282.3	20.1	48-110	0			S
Surr: 4-Terphenyl-d14	*2.217*	0	*3.184*	0	*69.6*	*39-133*	0			

MSD Sample ID: **15031217-06B MSD** Units: **mg/Kg** Analysis Date: **3/25/2015 11:41 AM**

Client ID: Run ID: **GC8_150325A** SeqNo: **3194325** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	347.2	8.2	328.3	282.3	19.8	48-110	346.2	0.274	30	S
Surr: 4-Terphenyl-d14	*2.182*	0	*3.283*	0	*66.5*	*39-133*	2.217	*1.6*	*30*	

The following samples were analyzed in this batch: 15031322-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69001** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-69001-69001** Units: **µg/Kg** Analysis Date: **3/24/2015 01:41 PM**
Client ID: Run ID: **GC9_150324A** SeqNo: **3193585** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	*4564*	0	*5000*	0	*91.3*	*50-150*	0			

LCS Sample ID: **LCS-69001-69001** Units: **µg/Kg** Analysis Date: **3/24/2015 01:16 PM**
Client ID: Run ID: **GC9_150324A** SeqNo: **3193583** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	453800	2,500	500000	0	90.8	70-130	0			
Surr: Toluene-d8	*4756*	0	*5000*	0	*95.1*	*50-150*	0			

MS Sample ID: **15031300-01B MS** Units: **µg/Kg** Analysis Date: **3/25/2015 03:10 AM**
Client ID: Run ID: **GC9_150324A** SeqNo: **3193596** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	481900	2,500	500000	0	96.4	70-130	0			
Surr: Toluene-d8	*4844*	0	*5000*	0	*96.9*	*50-150*	0			

MSD Sample ID: **15031300-01B MSD** Units: **µg/Kg** Analysis Date: **3/25/2015 03:35 AM**
Client ID: Run ID: **GC9_150324A** SeqNo: **3193598** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	467800	2,500	500000	0	93.6	70-130	481900	2.97	30	
Surr: Toluene-d8	*4646*	0	*5000*	0	*92.9*	*50-150*	4844	*4.15*	*30*	

The following samples were analyzed in this batch: 15031322-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69005** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP Sample ID: **15031245-05ADUP** Units: **none** Analysis Date: **3/26/2015**
Client ID: Run ID: **SAR_150326A** SeqNo: **3196972** Prep Date: **3/26/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	14.36	0.010	0	0	0		15.06	4.78	50	

The following samples were analyzed in this batch: 15031322-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **68975** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-68975-68975** Units: **µg/Kg** Analysis Date: **3/24/2015 07:18 PM**
Client ID: Run ID: **SVMS5_150324A** SeqNo: **3194548** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2,4,6-Tribromophenol	*1012*	0	*1667*	0	*60.7*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1110*	0	*1667*	0	*66.6*	*12-100*	0			
Surr: 2-Fluorophenol	*1183*	0	*1667*	0	*71*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1529*	0	*1667*	0	*91.7*	*25-137*	0			
Surr: Nitrobenzene-d5	*1140*	0	*1667*	0	*68.4*	*37-107*	0			
Surr: Phenol-d6	*1082*	0	*1667*	0	*64.9*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **68975** Instrument ID **SVMS5** Method: **SW846 8270D**

LCS Sample ID: **SLCSS1-68975-68975** Units: **µg/Kg** Analysis Date: **3/24/2015 07:41 PM**
Client ID: Run ID: **SVMS5_150324A** SeqNo: **3194549** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	511	6.7	666.7	0	76.6	45-110	0			
Anthracene	641	6.7	666.7	0	96.1	55-105	0			
Benzo(a)anthracene	615.3	6.7	666.7	0	92.3	50-110	0			
Benzo(a)pyrene	663.7	6.7	666.7	0	99.5	50-110	0			
Benzo(b)fluoranthene	674.3	6.7	666.7	0	101	45-115	0			
Benzo(g,h,i)perylene	604.3	6.7	666.7	0	90.6	40-125	0			
Benzo(k)fluoranthene	683	6.7	666.7	0	102	45-115	0			
Chrysene	638.7	6.7	666.7	0	95.8	55-110	0			
Dibenzo(a,h)anthracene	658.7	6.7	666.7	0	98.8	40-125	0			
Fluoranthene	656.7	6.7	666.7	0	98.5	55-115	0			
Fluorene	568	6.7	666.7	0	85.2	50-110	0			
Indeno(1,2,3-cd)pyrene	610.3	6.7	666.7	0	91.5	40-120	0			
Naphthalene	481.3	6.7	666.7	0	72.2	40-105	0			
Pyrene	670	6.7	666.7	0	100	45-125	0			
Surr: 2,4,6-Tribromophenol	*1352*	0	*1667*	0	*81.1*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1215*	0	*1667*	0	*72.9*	*12-100*	0			
Surr: 2-Fluorophenol	*1246*	0	*1667*	0	*74.8*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1599*	0	*1667*	0	*95.9*	*25-137*	0			
Surr: Nitrobenzene-d5	*1281*	0	*1667*	0	*76.9*	*37-107*	0			
Surr: Phenol-d6	*1239*	0	*1667*	0	*74.3*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **68975** Instrument ID **SVMS5** Method: **SW846 8270D**

MS Sample ID: **15031127-03B MS** Units: **µg/Kg** Analysis Date: **3/24/2015 11:14 PM**
Client ID: Run ID: **SVMS5_150324A** SeqNo: **3194599** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	948.3	13	1282	0	74	45-110	0			
Anthracene	1168	13	1282	7.21	90.6	55-105	0			
Benzo(a)anthracene	1176	13	1282	31.13	89.3	50-110	0			
Benzo(a)pyrene	1273	13	1282	37.69	96.4	50-110	0			
Benzo(b)fluoranthene	1254	13	1282	58.34	93.3	45-115	0			
Benzo(g,h,i)perylene	1078	13	1282	33.1	81.6	40-125	0			
Benzo(k)fluoranthene	1198	13	1282	21.63	91.8	45-115	0			
Chrysene	1187	13	1282	34.74	89.9	55-110	0			
Dibenzo(a,h)anthracene	1218	13	1282	0	95	40-125	0			
Fluoranthene	1257	13	1282	68.17	92.8	55-115	0			
Fluorene	1036	13	1282	3.277	80.6	50-110	0			
Indeno(1,2,3-cd)pyrene	1224	13	1282	34.74	92.8	40-120	0			
Naphthalene	945.1	13	1282	0	73.7	40-105	0			
Pyrene	1296	13	1282	58.66	96.5	45-125	0			
Surr: 2,4,6-Tribromophenol	*2473*	0	*3204*	0	*77.2*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*2387*	0	*3204*	0	*74.5*	*12-100*	0			
Surr: 2-Fluorophenol	*2443*	0	*3204*	0	*76.3*	*33-117*	0			
Surr: 4-Terphenyl-d14	*2922*	0	*3204*	0	*91.2*	*25-137*	0			
Surr: Nitrobenzene-d5	*2555*	0	*3204*	0	*79.8*	*37-107*	0			
Surr: Phenol-d6	*2454*	0	*3204*	0	*76.6*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **68975** Instrument ID **SVMS5** Method: **SW846 8270D**

MSD Sample ID: **15031127-03B MSD** Units: **µg/Kg** Analysis Date: **3/24/2015 11:36 PM**
Client ID: Run ID: **SVMS5_150324A** SeqNo: **3194600** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	989.6	13	1328	0	74.5	45-110	948.3	4.27	30	
Anthracene	1237	13	1328	7.21	92.6	55-105	1168	5.71	30	
Benzo(a)anthracene	1255	13	1328	31.13	92.2	50-110	1176	6.55	30	
Benzo(a)pyrene	1361	13	1328	37.69	99.6	50-110	1273	6.66	30	
Benzo(b)fluoranthene	1360	13	1328	58.34	98	45-115	1254	8.09	30	
Benzo(g,h,i)perylene	1184	13	1328	33.1	86.6	40-125	1078	9.3	30	
Benzo(k)fluoranthene	1262	13	1328	21.63	93.4	45-115	1198	5.24	30	
Chrysene	1239	13	1328	34.74	90.7	55-110	1187	4.29	30	
Dibenzo(a,h)anthracene	1288	13	1328	0	96.9	40-125	1218	5.57	30	
Fluoranthene	1332	13	1328	68.17	95.1	55-115	1257	5.76	30	
Fluorene	1090	13	1328	3.277	81.8	50-110	1036	5.07	30	
Indeno(1,2,3-cd)pyrene	1289	13	1328	34.74	94.4	40-120	1224	5.1	30	
Naphthalene	1006	13	1328	0	75.7	40-105	945.1	6.27	30	
Pyrene	1382	13	1328	58.66	99.6	45-125	1296	6.47	30	
Surr: 2,4,6-Tribromophenol	*2560*	0	*3321*	0	*77.1*	*34-140*	2473	*3.46*	*40*	
Surr: 2-Fluorobiphenyl	*2413*	0	*3321*	0	*72.7*	*12-100*	2387	*1.07*	*40*	
Surr: 2-Fluorophenol	*2472*	0	*3321*	0	*74.4*	*33-117*	2443	*1.18*	*40*	
Surr: 4-Terphenyl-d14	*3065*	0	*3321*	0	*92.3*	*25-137*	2922	*4.77*	*40*	
Surr: Nitrobenzene-d5	*2632*	0	*3321*	0	*79.3*	*37-107*	2555	*2.97*	*40*	
Surr: Phenol-d6	*2503*	0	*3321*	0	*75.4*	*40-106*	2454	*1.99*	*40*	

The following samples were analyzed in this batch: 15031322-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69072** Instrument ID **SVMS4** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-69072-69072** Units: **µg/Kg** Analysis Date: **3/26/2015 05:04 PM**
Client ID: Run ID: **SVMS4_150326B** SeqNo: **3197004** Prep Date: **3/26/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2,4,6-Tribromophenol	*1129*	0	*1667*	0	*67.7*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1262*	0	*1667*	0	*75.7*	*12-100*	0			
Surr: 2-Fluorophenol	*1268*	0	*1667*	0	*76.1*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1402*	0	*1667*	0	*84.1*	*25-137*	0			
Surr: Nitrobenzene-d5	*1191*	0	*1667*	0	*71.5*	*37-107*	0			
Surr: Phenol-d6	*1222*	0	*1667*	0	*73.3*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69072** Instrument ID **SVMS4** Method: **SW846 8270D**

LCS Sample ID: **SLCSS1-69072-69072** Units: **µg/Kg** Analysis Date: **3/26/2015 05:29 PM**
Client ID: Run ID: **SVMS4_150326B** SeqNo: **3197005** Prep Date: **3/26/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	492	6.7	666.7	0	73.8	45-110	0			
Anthracene	578.3	6.7	666.7	0	86.7	55-105	0			
Benzo(a)anthracene	552.7	6.7	666.7	0	82.9	50-110	0			
Benzo(a)pyrene	548	6.7	666.7	0	82.2	50-110	0			
Benzo(b)fluoranthene	579	6.7	666.7	0	86.8	45-115	0			
Benzo(g,h,i)perylene	563	6.7	666.7	0	84.4	40-125	0			
Benzo(k)fluoranthene	583	6.7	666.7	0	87.4	45-115	0			
Chrysene	625.7	6.7	666.7	0	93.8	55-110	0			
Dibenzo(a,h)anthracene	586	6.7	666.7	0	87.9	40-125	0			
Fluoranthene	586.3	6.7	666.7	0	87.9	55-115	0			
Fluorene	516.7	6.7	666.7	0	77.5	50-110	0			
Indeno(1,2,3-cd)pyrene	562.3	6.7	666.7	0	84.3	40-120	0			
Naphthalene	489	6.7	666.7	0	73.3	40-105	0			
Pyrene	547.7	6.7	666.7	0	82.1	45-125	0			
Surr: 2,4,6-Tribromophenol	*1489*	0	*1667*	0	*89.3*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1335*	0	*1667*	0	*80.1*	*12-100*	0			
Surr: 2-Fluorophenol	*1287*	0	*1667*	0	*77.2*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1416*	0	*1667*	0	*85*	*25-137*	0			
Surr: Nitrobenzene-d5	*1288*	0	*1667*	0	*77.3*	*37-107*	0			
Surr: Phenol-d6	*1260*	0	*1667*	0	*75.6*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69072** Instrument ID **SVMS4** Method: **SW846 8270D**

MS Sample ID: **15031250-01A MS** Units: **µg/Kg** Analysis Date: **3/26/2015 05:44 PM**
Client ID: Run ID: **SVMS5_150326A** SeqNo: **3198906** Prep Date: **3/26/2015** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	75660	660	1317	39160	2770	45-110	0			SO
Anthracene	242000	660	1317	117300	9470	55-105	0			SEO
Benzo(a)anthracene	215600	660	1317	114500	7680	50-110	0			SEO
Benzo(a)pyrene	171500	660	1317	95300	5790	50-110	0			SO
Benzo(b)fluoranthene	215300	660	1317	120500	7200	45-115	0			SEO
Benzo(g,h,i)perylene	93960	660	1317	52240	3170	40-125	0			SO
Benzo(k)fluoranthene	93170	660	1317	50960	3210	45-115	0			SO
Chrysene	210200	660	1317	115100	7230	55-110	0			SEO
Dibenzo(a,h)anthracene	11880	660	1317	18650	-514	40-125	0			SO
Fluoranthene	392400	660	1317	176100	16400	55-115	0			SEO
Fluorene	115700	660	1317	56910	4460	50-110	0			SO
Indeno(1,2,3-cd)pyrene	121500	660	1317	68290	4040	40-120	0			SO
Naphthalene	42750	660	1317	17730	1900	40-105	0			SO
Pyrene	307000	660	1317	144000	12400	45-125	0			SEO
Surr: 2,4,6-Tribromophenol	*1810*	0	*3291*	0	*55*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*2337*	0	*3291*	0	*71*	*12-100*	0			
Surr: 2-Fluorophenol	*2501*	0	*3291*	0	*76*	*33-117*	0			
Surr: 4-Terphenyl-d14	*2830*	0	*3291*	0	*86*	*25-137*	0			
Surr: Nitrobenzene-d5	*3357*	0	*3291*	0	*102*	*37-107*	0			
Surr: Phenol-d6	*2370*	0	*3291*	0	*72*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69072** Instrument ID **SVMS4** Method: **SW846 8270D**

MSD Sample ID: **15031250-01A MSD** Units: **µg/Kg** Analysis Date: **3/26/2015 06:06 PM**
Client ID: Run ID: **SVMS5_150326A** SeqNo: **3198907** Prep Date: **3/26/2015** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	42780	640	1270	39160	285	45-110	75660	55.5	30	SRO
Anthracene	140200	640	1270	117300	1800	55-105	242000	53.3	30	SRO
Benzo(a)anthracene	133200	640	1270	114500	1470	50-110	215600	47.2	30	SRO
Benzo(a)pyrene	109500	640	1270	95300	1120	50-110	171500	44.1	30	SRO
Benzo(b)fluoranthene	138100	640	1270	120500	1380	45-115	215300	43.7	30	SRO
Benzo(g,h,i)perylene	59710	640	1270	52240	588	40-125	93960	44.6	30	SRO
Benzo(k)fluoranthene	55480	640	1270	50960	356	45-115	93170	50.7	30	SRO
Chrysene	127300	640	1270	115100	966	55-110	210200	49.1	30	SRO
Dibenzo(a,h)anthracene	20330	640	1270	18650	132	40-125	11880	52.4	30	SRO
Fluoranthene	284600	640	1270	176100	8540	55-115	392400	31.9	30	SREO
Fluorene	63390	640	1270	56910	510	50-110	115700	58.4	30	SRO
Indeno(1,2,3-cd)pyrene	78570	640	1270	68290	809	40-120	121500	42.9	30	SRO
Naphthalene	21250	640	1270	17730	277	40-105	42750	67.2	30	SRO
Pyrene	233700	640	1270	144000	7060	45-125	307000	27.1	30	SEO
Surr: 2,4,6-Tribromophenol	*1779*	0	*3176*	0	*56*	*34-140*	1810	*1.76*	*40*	
Surr: 2-Fluorobiphenyl	*2287*	0	*3176*	0	*72*	*12-100*	2337	*2.16*	*40*	
Surr: 2-Fluorophenol	*2064*	0	*3176*	0	*65*	*33-117*	2501	*19.1*	*40*	
Surr: 4-Terphenyl-d14	*2731*	0	*3176*	0	*86*	*25-137*	2830	*3.56*	*40*	
Surr: Nitrobenzene-d5	*2922*	0	*3176*	0	*92*	*37-107*	3357	*13.9*	*40*	
Surr: Phenol-d6	*1969*	0	*3176*	0	*62*	*40-106*	2370	*18.5*	*40*	

The following samples were analyzed in this batch: 15031322-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69000** Instrument ID **VMS5** Method: **SW8260B**

MBLK Sample ID: **MBLK-69000-69000** Units: **µg/Kg** Analysis Date: **3/25/2015 01:41 AM**
Client ID: Run ID: **VMS5_150324A** SeqNo: **3193919** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*984*	0	*1000*	0	*98.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*982*	0	*1000*	0	*98.2*	*70-130*	0			
Surr: Dibromofluoromethane	*994*	0	*1000*	0	*99.4*	*70-130*	0			
Surr: Toluene-d8	*1010*	0	*1000*	0	*101*	*70-130*	0			

LCS Sample ID: **LCS-69000-69000** Units: **µg/Kg** Analysis Date: **3/25/2015 12:24 PM**
Client ID: Run ID: **VMS5_150324A** SeqNo: **3193921** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1040	30	1000	0	104	75-125	0			
Ethylbenzene	1019	30	1000	0	102	75-125	0			
m,p-Xylene	2054	60	2000	0	103	80-125	0			
o-Xylene	1017	30	1000	0	102	75-125	0			
Toluene	1024	30	1000	0	102	70-125	0			
Xylenes, Total	3071	90	3000	0	102	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1005*	0	*1000*	0	*100*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*991.5*	0	*1000*	0	*99.2*	*70-130*	0			
Surr: Dibromofluoromethane	*1009*	0	*1000*	0	*101*	*70-130*	0			
Surr: Toluene-d8	*990*	0	*1000*	0	*99*	*70-130*	0			

MS Sample ID: **15031062-02A MS** Units: **µg/Kg** Analysis Date: **3/25/2015 09:16 PM**
Client ID: Run ID: **VMS5_150325A** SeqNo: **3195822** Prep Date: **3/24/2015** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19150	600	20000	0	95.8	75-125	0			
Ethylbenzene	21970	600	20000	2910	95.3	75-125	0			
m,p-Xylene	38250	1,200	40000	0	95.6	80-125	0			
o-Xylene	18600	600	20000	0	93	75-125	0			
Toluene	19070	600	20000	0	95.4	70-125	0			
Xylenes, Total	56850	1,800	60000	0	94.8	75-125	0			
Surr: 1,2-Dichloroethane-d4	*19600*	0	*20000*	0	*98*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*20300*	0	*20000*	0	*102*	*70-130*	0			
Surr: Dibromofluoromethane	*20140*	0	*20000*	0	*101*	*70-130*	0			
Surr: Toluene-d8	*20110*	0	*20000*	0	*101*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69000** Instrument ID **VMS5** Method: **SW8260B**

MSD Sample ID: **15031062-02A MSD** Units: **µg/Kg** Analysis Date: **3/25/2015 09:41 PM**
Client ID: Run ID: **VMS5_150325A** SeqNo: **3195823** Prep Date: **3/24/2015** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19840	600	20000	0	99.2	75-125	19150	3.54	30	
Ethylbenzene	23800	600	20000	2910	104	75-125	21970	8	30	
m,p-Xylene	41630	1,200	40000	0	104	80-125	38250	8.46	30	
o-Xylene	20330	600	20000	0	102	75-125	18600	8.89	30	
Toluene	20140	600	20000	0	101	70-125	19070	5.46	30	
Xylenes, Total	61960	1,800	60000	0	103	75-125	56850	8.6	30	
Surr: 1,2-Dichloroethane-d4	*19640*	0	*20000*	0	*98.2*	*70-130*	19600	*0.204*	*30*	
Surr: 4-Bromofluorobenzene	*20290*	0	*20000*	0	*101*	*70-130*	20300	*0.0493*	*30*	
Surr: Dibromofluoromethane	*19710*	0	*20000*	0	*98.6*	*70-130*	20140	*2.16*	*30*	
Surr: Toluene-d8	*19960*	0	*20000*	0	*99.8*	*70-130*	20110	*0.749*	*30*	

The following samples were analyzed in this batch: 15031322-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69005** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP Sample ID: **15031245-05A DUP** Units: **mmhos/cm @25°** Analysis Date: **3/26/2015 09:00 PM**
Client ID: Run ID: **WETCHEM_150326U** SeqNo: **3197335** Prep Date: **3/26/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	8.6	0.050	0	0	0		9.51	10	50	

The following samples were analyzed in this batch: 15031322-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **69010** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-69010-69010** Units: **s.u.** Analysis Date: **3/25/2015 12:30 PM**
Client ID: Run ID: **WETCHEM_150325E** SeqNo: **3194409** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.93	0	4	0	98.2	90-110	0			

DUP Sample ID: **15031172-01B DUP** Units: **s.u.** Analysis Date: **3/25/2015 12:30 PM**
Client ID: Run ID: **WETCHEM_150325E** SeqNo: **3194411** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.61	0	0	0	0	0-0	7.46	1.99	20	

DUP Sample ID: **15031202-01B DUP** Units: **s.u.** Analysis Date: **3/25/2015 12:30 PM**
Client ID: Run ID: **WETCHEM_150325E** SeqNo: **3194418** Prep Date: **3/24/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.14	0	0	0	0	0-0	8.22	0.978	20	

The following samples were analyzed in this batch: 15031322-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15031322
Project: GM 442-20 Batch 2

QC BATCH REPORT

Batch ID: **R159846** Instrument ID **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R159846** Units: **% of sample** Analysis Date: **3/24/2015 04:40 PM**
Client ID: Run ID: **MOIST_150324B** SeqNo: **3193840** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R159846** Units: **% of sample** Analysis Date: **3/24/2015 04:40 PM**
Client ID: Run ID: **MOIST_150324B** SeqNo: **3193839** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **15031217-04B DUP** Units: **% of sample** Analysis Date: **3/24/2015 04:40 PM**
Client ID: Run ID: **MOIST_150324B** SeqNo: **3193814** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.57	0.050	0	0	0		8.06	6.13	20	

DUP Sample ID: **15031322-01A DUP** Units: **% of sample** Analysis Date: **3/24/2015 04:40 PM**
Client ID: **GM 442-20 Batch 2** Run ID: **MOIST_150324B** SeqNo: **3193838** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.85	0.050	0	0	0		8.68	1.94	20	

The following samples were analyzed in this batch: 15031322-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r6

WORKORDER # 15031322

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

SAMPLER	JRM	DATE	
PROJECT NAME	GM 442-20 Batch 2	SITE ID	GM 442-20 Batch 2
TURNAROUND	24 hrs		
PROJECT No.		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy
SEND REPORT TO	Blaney	INVOICE ATTN TO	Karolina Blaney; Leo Braun
ADDRESS		ADDRESS	1058 Co Rd 215
CITY / STATE / ZIP		CITY / STATE / ZIP	Parachure CO 81635
PHONE		PHONE	970-683-2295
FAX		FAX	
E-MAIL	Karolina.blaney@wpxenergy.com; tdobransky@olssonassociates.com	E-MAIL	Karolina.blaney@wpxenergy.com; leo.braun@wpxenergy.com

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO + GRO	BTEX	PAHs	EC, SAR, pH
L	GM 442-20 Batch 2	S	3/23/2015	1450	2	8		x	x	x	x

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 2.6°C @

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Jason McLarty	3/23/2015	1530
RECEIVED BY			3-23-15	1600
RELINQUISHED BY			3-23-15	1690
RECEIVED BY		Diane F. Sha	3/24/15	0930
RELINQUISHED BY				
RECEIVED BY				

From: (616) 298-1033
Nick Martinez
ALS Environmental
127 E. 1st Street

PARACHUTE, CO 81635

Origin ID: RILA

FedEx Express

J151215022303A

Ship Date: 23MAR15
ActWgt: 48.0 LB
CAD: 2264840/INET3610

Dims: 24 X 15 X 15 IN

Delivery Address Bar Code

Ref # 032315-1
Invoice #
PO # Parachute
Dept #

SHIP TO: (616) 399-6070

BILL SENDER

sample receiving
ALS Laboratory Group
3352 128TH AVE

HOLLAND, MI 49424

2 of 3

MPS# 7731 9497 7511

0263

Mstr# 7731 9497 7485

0201

TUE - 24 MAR 10:30A
PRIORITY OVERNIGHT

49424
MI-US
GRR

XX HLMA

537J1/87DAAEE4B

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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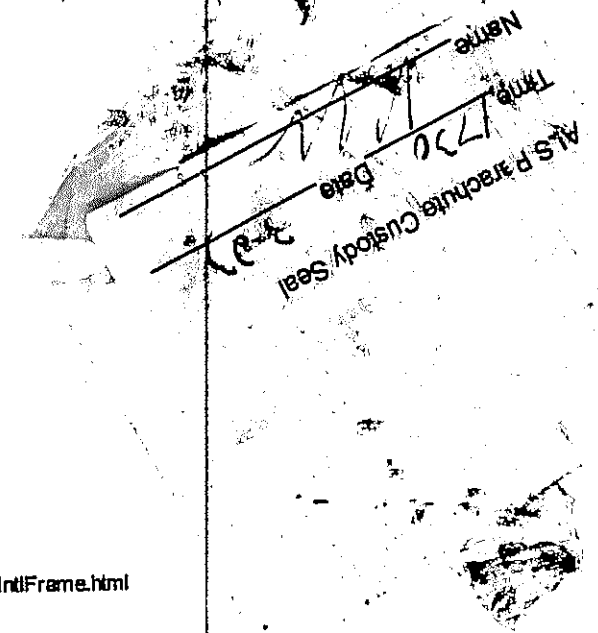

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WPX** Date/Time Received: **24-Mar-15 09:30**

Work Order: **15031322** Received by: **DS**

Checklist completed by Diane Shaw eSignature 24-Mar-15 Date Reviewed by: Chad Whelton eSignature 24-Mar-15 Date

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.6 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	3/24/2015 11:39:48 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

10-Apr-2015

Karolina Blaney
WPX Energy Rocky Mountain, LLC
1058 Country Rd 215
Parachute, CO 81635

Re: **GM 442-20 Batch 3** Work Order: **1504335**

Dear Karolina,

ALS Environmental received 1 sample on 07-Apr-2015 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 16.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 10-Apr-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 442-20 Batch 3
Work Order: **1504335**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1504335-01	GM 442-20 Batch 3	Soil		4/6/2015 13:35	4/7/2015 09:45	☐

ALS Group USA, Corp

Date: 10-Apr-15

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: *10-Apr-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 442-20 Batch 3 **Work Order:** 1504335
Sample ID: GM 442-20 Batch 3 **Lab ID:** 1504335-01
Collection Date: 4/6/2015 01:35 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 4/7/15	Analyst: **IT**
DRO (C10-C28)	**61**		**4.6**	**mg/Kg-dry**	1	4/8/2015 02:51 AM
Surr: 4-Terphenyl-d14	*75.1*		*39-133*	*%REC*	1	4/8/2015 02:51 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 4/7/15	Analyst: **IT**
GRO (C6-C10)	**110**		**2.8**	**mg/Kg-dry**	1	4/8/2015 12:17 PM
Surr: Toluene-d8	*109*		*50-150*	*%REC*	1	4/8/2015 12:17 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 4/9/15	Analyst: **JEC**
Calcium	**740**		**5.0**	**mg/L**	10	4/9/2015 01:43 PM
Magnesium	**200**		**2.0**	**mg/L**	10	4/9/2015 01:43 PM
Sodium	**1,200**		**2.0**	**mg/L**	10	4/9/2015 01:43 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 4/9/15	Analyst: **JEC**
Sodium Adsorption Ratio	**10**		**0.010**	**none**	1	4/9/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 4/7/15	Analyst: **RS**
Acenaphthene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Anthracene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Benzo(a)anthracene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Benzo(a)pyrene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Benzo(b)fluoranthene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Benzo(g,h,i)perylene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Benzo(k)fluoranthene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Chrysene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Dibenzo(a,h)anthracene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Fluoranthene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Fluorene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Indeno(1,2,3-cd)pyrene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Naphthalene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Pyrene	ND		7.4	µg/Kg-dry	1	4/8/2015 12:45 PM
Surr: 2-Fluorobiphenyl	*53.9*		*12-100*	*%REC*	1	4/8/2015 12:45 PM
Surr: 4-Terphenyl-d14	*96.5*		*25-137*	*%REC*	1	4/8/2015 12:45 PM
Surr: Nitrobenzene-d5	*46.0*		*37-107*	*%REC*	1	4/8/2015 12:45 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 4/7/15	Analyst: **LSY**
Benzene	ND		33	µg/Kg-dry	1	4/7/2015 10:43 PM
Ethylbenzene	ND		33	µg/Kg-dry	1	4/7/2015 10:43 PM
m,p-Xylene	**180**		**67**	**µg/Kg-dry**	1	4/7/2015 10:43 PM
o-Xylene	ND		33	µg/Kg-dry	1	4/7/2015 10:43 PM
Toluene	ND		33	µg/Kg-dry	1	4/7/2015 10:43 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *10-Apr-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 442-20 Batch 3 **Work Order:** 1504335
Sample ID: GM 442-20 Batch 3 **Lab ID:** 1504335-01
Collection Date: 4/6/2015 01:35 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Xylenes, Total	**180**		**100**	**µg/Kg-dry**	1	4/7/2015 10:43 PM
Surr: 1,2-Dichloroethane-d4	*112*		*70-130*	*%REC*	1	4/7/2015 10:43 PM
Surr: 4-Bromofluorobenzene	*99.1*		*70-130*	*%REC*	1	4/7/2015 10:43 PM
Surr: Dibromofluoromethane	*88.6*		*70-130*	*%REC*	1	4/7/2015 10:43 PM
Surr: Toluene-d8	*97.0*		*70-130*	*%REC*	1	4/7/2015 10:43 PM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**	Prep: USDA Method 20B / 4/9/15		Analyst: **JB**
Electrical Conductivity @ Saturation	**12**		**0.050**	**mmhos/cm @2**	10	4/9/2015 05:00 PM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**10**		**0.050**	**% of sample**	1	4/7/2015 03:25 PM
PH			**SW9045D**	Prep: EXTRACT / 4/7/15		Analyst: **KF**
pH	**8.0**			**s.u.**	1	4/7/2015 03:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 10-Apr-15

Client: WPX Energy Rocky Mountain, LLC

QC BATCH REPORT

Work Order: 1504335

Project: GM 442-20 Batch 3

Batch ID: **69507** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-69507-69507** Units: **mg/Kg** Analysis Date: **4/7/2015 06:51 PM**

Client ID: Run ID: **GC8_150407A** SeqNo: **3215463** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	*1.667*	0	*2*	0	*83.3*	*39-133*	0			

LCS Sample ID: **DLCSS1-69507-69507** Units: **mg/Kg** Analysis Date: **4/7/2015 07:21 PM**

Client ID: Run ID: **GC8_150407A** SeqNo: **3215464** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	200	5.0	200	0	100	61-109	0			
Surr: 4-Terphenyl-d14	*1.502*	0	*2*	0	*75.1*	*39-133*	0			

MS Sample ID: **1504129-04A MS** Units: **mg/Kg** Analysis Date: **4/7/2015 07:51 PM**

Client ID: Run ID: **GC8_150407A** SeqNo: **3215465** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	321.3	8.2	328.6	0	97.8	48-110	0			
Surr: 4-Terphenyl-d14	*2.387*	0	*3.286*	0	*72.6*	*39-133*	0			

MSD Sample ID: **1504129-04A MSD** Units: **mg/Kg** Analysis Date: **4/7/2015 08:21 PM**

Client ID: Run ID: **GC8_150407A** SeqNo: **3215466** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	304.1	8.2	326.5	0	93.1	48-110	321.3	5.52	30	
Surr: 4-Terphenyl-d14	*2.3*	0	*3.265*	0	*70.4*	*39-133*	2.387	*3.71*	*30*	

The following samples were analyzed in this batch: 1504335-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504335
Project: GM 442-20 Batch 3

QC BATCH REPORT

Batch ID: **69533** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-69533-69533** Units: **µg/Kg** Analysis Date: **4/7/2015 02:42 PM**
Client ID: Run ID: **GC9_150407A** SeqNo: **3215514** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	*5686*	0	*5000*	0	*114*	*50-150*	0			

LCS Sample ID: **LCS-69533-69533** Units: **µg/Kg** Analysis Date: **4/7/2015 02:17 PM**
Client ID: Run ID: **GC9_150407A** SeqNo: **3215512** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	485100	2,500	500000	0	97	70-130	0			
Surr: Toluene-d8	*4488*	0	*5000*	0	*89.8*	*50-150*	0			

MS Sample ID: **1504313-01A MS** Units: **µg/Kg** Analysis Date: **4/7/2015 07:25 PM**
Client ID: Run ID: **GC9_150407A** SeqNo: **3215530** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	427700	2,500	500000	0	85.5	70-130	0			
Surr: Toluene-d8	*4966*	0	*5000*	0	*99.3*	*50-150*	0			

MSD Sample ID: **1504313-01A MSD** Units: **µg/Kg** Analysis Date: **4/7/2015 07:50 PM**
Client ID: Run ID: **GC9_150407A** SeqNo: **3215532** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	435200	2,500	500000	0	87	70-130	427700	1.73	30	
Surr: Toluene-d8	*4109*	0	*5000*	0	*82.2*	*50-150*	4966	*18.9*	*30*	

The following samples were analyzed in this batch: 1504335-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504335
Project: GM 442-20 Batch 3

QC BATCH REPORT

Batch ID: **69537** Instrument ID **ICP2** Method: **SW846 6010C**

DUP Sample ID: **1504335-01BDUP** Units: **mg/L** Analysis Date: **4/9/2015 01:49 PM**
Client ID: **GM 442-20 Batch 3** Run ID: **ICP2_150409A** SeqNo: **3218285** Prep Date: **4/9/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	770.6	5.0	0	0	0	0-0	737.9	4.34		
Magnesium	199.6	2.0	0	0	0	0-0	199.7	0.0892		
Sodium	1213	2.0	0	0	0	0-0	1234	1.74		

DUP Sample ID: **1504335-01BDUP** Units: **none** Analysis Date: **4/9/2015**
Client ID: **GM 442-20 Batch 3** Run ID: **SAR_150409A** SeqNo: **3218365** Prep Date: **4/9/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	10.07	0.010	0	0	0		0			

The following samples were analyzed in this batch: 1504335-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504335
Project: GM 442-20 Batch 3

QC BATCH REPORT

Batch ID: **69508** Instrument ID **SVMS4** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-69508-69508** Units: **µg/Kg** Analysis Date: **4/8/2015 12:17 PM**
Client ID: Run ID: **SVMS4_150407A** SeqNo: **3216225** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	*1325*	0	*1667*	0	*79.5*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2042*	0	*1667*	0	*123*	*25-137*	0			
Surr: Nitrobenzene-d5	*1332*	0	*1667*	0	*79.9*	*37-107*	0			

LCS Sample ID: **SLCSS1-69508-69508** Units: **µg/Kg** Analysis Date: **4/8/2015 12:42 PM**
Client ID: Run ID: **SVMS4_150407A** SeqNo: **3216226** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	424	6.7	666.7	0	63.6	45-110	0			
Anthracene	550.3	6.7	666.7	0	82.5	55-105	0			
Benzo(a)anthracene	530	6.7	666.7	0	79.5	50-110	0			
Benzo(a)pyrene	526.3	6.7	666.7	0	78.9	50-110	0			
Benzo(b)fluoranthene	511.7	6.7	666.7	0	76.7	45-115	0			
Benzo(g,h,i)perylene	610.7	6.7	666.7	0	91.6	40-125	0			
Benzo(k)fluoranthene	534.7	6.7	666.7	0	80.2	45-115	0			
Chrysene	556	6.7	666.7	0	83.4	55-110	0			
Dibenzo(a,h)anthracene	573	6.7	666.7	0	85.9	40-125	0			
Fluoranthene	571	6.7	666.7	0	85.6	55-115	0			
Fluorene	485.3	6.7	666.7	0	72.8	50-110	0			
Indeno(1,2,3-cd)pyrene	570	6.7	666.7	0	85.5	40-120	0			
Naphthalene	362.7	6.7	666.7	0	54.4	40-105	0			
Pyrene	622.3	6.7	666.7	0	93.3	45-125	0			
Surr: 2-Fluorobiphenyl	*1038*	0	*1667*	0	*62.3*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1726*	0	*1667*	0	*104*	*25-137*	0			
Surr: Nitrobenzene-d5	*1072*	0	*1667*	0	*64.3*	*37-107*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504335
Project: GM 442-20 Batch 3

QC BATCH REPORT

Batch ID: **69508** Instrument ID **SVMS4** Method: **SW846 8270D**

MS Sample ID: **1504160-02C MS** Units: **µg/Kg** Analysis Date: **4/8/2015 04:20 AM**
Client ID: Run ID: **SVMS4_150407A** SeqNo: **3216217** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	805	13	1283	0	62.7	45-110	0			
Anthracene	963.4	13	1283	5.28	74.7	55-105	0			
Benzo(a)anthracene	957	13	1283	18.48	73.2	50-110	0			
Benzo(a)pyrene	1042	13	1283	31.68	78.8	50-110	0			
Benzo(b)fluoranthene	1054	13	1283	30.36	79.8	45-115	0			
Benzo(g,h,i)perylene	1141	13	1283	13.53	87.9	40-125	0			
Benzo(k)fluoranthene	1034	13	1283	24.75	78.7	45-115	0			
Chrysene	1007	13	1283	7.59	77.9	55-110	0			
Dibenzo(a,h)anthracene	1016	13	1283	0	79.2	40-125	0			
Fluoranthene	1005	13	1283	17.16	77	55-115	0			
Fluorene	908.9	13	1283	3.3	70.6	50-110	0			
Indeno(1,2,3-cd)pyrene	1083	13	1283	24.75	82.5	40-120	0			
Naphthalene	741.5	13	1283	0	57.8	40-105	0			
Pyrene	1052	13	1283	14.52	80.9	45-125	0			
Surr: 2-Fluorobiphenyl	*2118*	0	*3207*	0	*66*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2926*	0	*3207*	0	*91.2*	*25-137*	0			
Surr: Nitrobenzene-d5	*2194*	0	*3207*	0	*68.4*	*37-107*	0			

MSD Sample ID: **1504160-02C MSD** Units: **µg/Kg** Analysis Date: **4/8/2015 04:45 AM**
Client ID: Run ID: **SVMS4_150407A** SeqNo: **3216219** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	708.3	13	1262	0	56.1	45-110	805	12.8	30	
Anthracene	862.9	13	1262	5.28	68	55-105	963.4	11	30	
Benzo(a)anthracene	872.3	13	1262	18.48	67.7	50-110	957	9.25	30	
Benzo(a)pyrene	908.3	13	1262	31.68	69.5	50-110	1042	13.7	30	
Benzo(b)fluoranthene	907	13	1262	30.36	69.5	45-115	1054	15	30	
Benzo(g,h,i)perylene	1017	13	1262	13.53	79.5	40-125	1141	11.5	30	
Benzo(k)fluoranthene	895	13	1262	24.75	69	45-115	1034	14.4	30	
Chrysene	878	13	1262	7.59	69	55-110	1007	13.7	30	
Dibenzo(a,h)anthracene	947.4	13	1262	0	75.1	40-125	1016	6.99	30	
Fluoranthene	902.6	13	1262	17.16	70.2	55-115	1005	10.7	30	
Fluorene	761.3	13	1262	3.3	60.1	50-110	908.9	17.7	30	
Indeno(1,2,3-cd)pyrene	999.7	13	1262	24.75	77.3	40-120	1083	8.02	30	
Naphthalene	666.7	13	1262	0	52.8	40-105	741.5	10.6	30	
Pyrene	963.8	13	1262	14.52	75.2	45-125	1052	8.74	30	
Surr: 2-Fluorobiphenyl	*1791*	0	*3154*	0	*56.8*	*12-100*	2118	*16.7*	*40*	
Surr: 4-Terphenyl-d14	*2561*	0	*3154*	0	*81.2*	*25-137*	2926	*13.3*	*40*	
Surr: Nitrobenzene-d5	*1913*	0	*3154*	0	*60.7*	*37-107*	2194	*13.7*	*40*	

The following samples were analyzed in this batch: 1504335-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504335
Project: GM 442-20 Batch 3

QC BATCH REPORT

Batch ID: **69537** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP Sample ID: **1504335-01B DUP** Units: **mmhos/cm @25°** Analysis Date: **4/9/2015 05:00 PM**
Client ID: **GM 442-20 Batch 3** Run ID: **WETCHEM_150409M** SeqNo: **3218948** Prep Date: **4/9/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	12.2	0.050	0	0	0		12.07	1.07	50	

The following samples were analyzed in this batch: 1504335-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504335
Project: GM 442-20 Batch 3

QC BATCH REPORT

Batch ID: **69538** Instrument ID **WETCHEM** Method: **SW9045D**

DUP Sample ID: **1504322-01B DUP** Units: **s.u.** Analysis Date: **4/7/2015 03:01 PM**
Client ID: Run ID: **WETCHEM_150407E** SeqNo: **3214338** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.26	0	0	0	0	0-0	7.19	0.969	20	

DUP Sample ID: **1504322-11B DUP** Units: **s.u.** Analysis Date: **4/7/2015 03:01 PM**
Client ID: Run ID: **WETCHEM_150407E** SeqNo: **3214349** Prep Date: **4/7/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.75	0	0	0	0	0-0	7.77	0.258	20	

The following samples were analyzed in this batch: 1504335-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504335
Project: GM 442-20 Batch 3

QC BATCH REPORT

Batch ID: **R160810** Instrument ID **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R160810** Units: **% of sample** Analysis Date: **4/7/2015 03:25 PM**
Client ID: Run ID: **MOIST_150407B** SeqNo: **3216275** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R160810** Units: **% of sample** Analysis Date: **4/7/2015 03:25 PM**
Client ID: Run ID: **MOIST_150407B** SeqNo: **3216274** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1504134-01A DUP** Units: **% of sample** Analysis Date: **4/7/2015 03:25 PM**
Client ID: Run ID: **MOIST_150407B** SeqNo: **3216264** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	98.36	0.050	0	0	0		98.37	0.0102	20	

DUP Sample ID: **1504335-01A DUP** Units: **% of sample** Analysis Date: **4/7/2015 03:25 PM**
Client ID: **GM 442-20 Batch 3** Run ID: **MOIST_150407B** SeqNo: **3216272** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	11.47	0.050	0	0	0		10.3	10.7	20	

The following samples were analyzed in this batch: 1504335-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER # 1504335

PAGE 1 of 1

DISPOSAL: By Lab or Return to Client

PROJECT NAME	GM 442-20 Batch 3	SAMPLER	Jessica Dilka
PROJECT No.		SITE ID	GM 442-20 Batch 3
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy
SEND REPORT TO	Karolina Blaney	INVOICE ATTN TO	Karolina Blaney; Leo Braun
ADDRESS		ADDRESS	1058 Co Rd 215
CITY / STATE / ZIP		CITY / STATE / ZIP	Parachute CO 81635
PHONE		PHONE	970-683-2295
FAX		FAX	
E-MAIL	Karolina.blaney@wpxenergy.com tdobransky@olssonassociates.com	E-MAIL	Karolina.blaney@wpxenergy.com; leo.braun@wpxenergy.com

DATE

TURNAROUND: 24 hours

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO + GRO	BTEX	PAHs	EC, SAR, pH
l	GM 442-20 Batch 3	S	4/6/2015	1335	2	8	x	x	X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

Please send copy data to tdobransky@olssonassociates.com

3.8°C

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Jessica Dilka	4/6/2015	1415
RECEIVED BY			4-6-15	1415
RELINQUISHED BY			4-6-15	1420
RECEIVED BY		Diane F. Shaw	4/7/15	0945
RELINQUISHED BY				
RECEIVED BY				

From: (616) 298-1033
Nick Martinez
ALS Environmental
127 E. 1st Street

PARACHUTE, CO 81635

Origin ID: RILA

FedEx Express

J15121502230Suv

Ship Date: 06APR15
ActWgt: 51.0 LB
CAD: 2264840/INET3610

Dims: 24 X 15 X 15 IN

Delivery Address Bar Code

Ref # 040615-1
Invoice #
PO # Parachute
Dept #

SHIP TO: (616) 399-6070 BILL SENDER

sample receiving
ALS Laboratory Group
3352 128TH AVE

HOLLAND, MI 49424

1 of 3

TRK# 7733 0394 2080
0201

MASTER

XX HLMA

TUE - 07 APR 10:30A
PRIORITY OVERNIGHT

49424
MI-US
GRR

537J2/BFC5/EE4B

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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3.8°C

ALS Parachute Custody Seal
Time 1700 Date 4-6
Name

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WPX** Date/Time Received: **07-Apr-15 09:45**

Work Order: **1504335** Received by: **DS**

Checklist completed by Diane Shaw eSignature 07-Apr-15 Date Reviewed by: Chad Whitten eSignature 07-Apr-15 Date

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.8 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	4/7/2015 11:51:25 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: