



September 2, 2015

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

Re: GV 2-31 produced water spill closure request

Dear Mr. Spencer,

On July 24, 2015, WPX discovered a leak on the 4" waterline located in Starkey Gulch near the GV 2-31 well pad. The line has been used to transport water from pads in Starkey gulch to the main water system. Upon discovery of the leak, the line was shut in, drained, and excavated for repair. Internal corrosion was found to be the root cause of the hole in the pipe. Because of the amount of internal corrosion, WPX have decided not to place the line back in service at this time; water will trucked out of the area. If a determination is made to use the 4" line for the water transfer, WPX will install a 2" flex pipe inside of the 4" line and pressure test it prior to operations.

In order to close the produced water spill, attached are the laboratory results and the sample location map for soil samples collected from the impacted area.

Soil samples were collected from the excavated area and excavated material. Samples were analyzed for a reduced list of analytes which included organic compounds and inorganics listed in COGCC Table 910-1. The abbreviated list of analytes was approved by COGCC via supplemental Form 19. A background sample was collected of the nearby non-impacted native soil and analyzed for inorganics.

As the attached lab reports indicate, all organic compounds listed in the COGCC Table 910-1 are in compliance with the cleanup requirements. The excavated area was backfilled with the excavated material. The impacted area will be amended with nutrients as needed and reseeded.

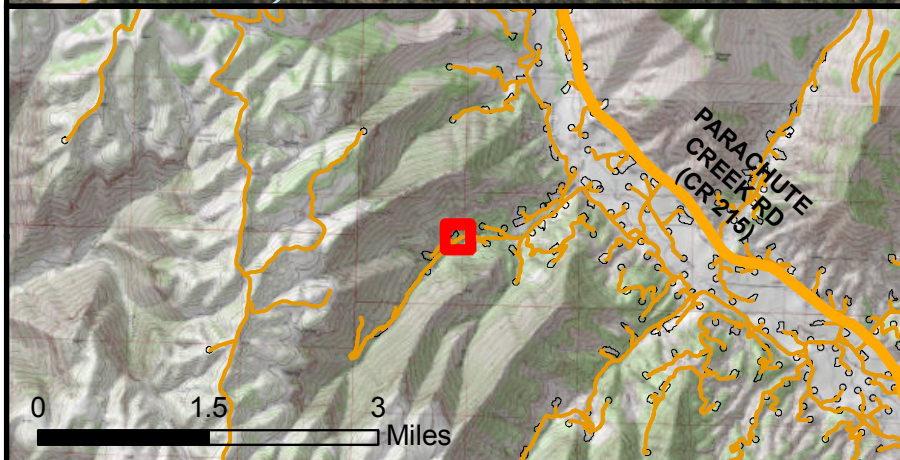
Please do not hesitate to contact me at (970) 683-2295 should you have any questions or concerns regarding this information.

Sincerely,

Karolina Blaney
Environmental Specialist

Attachments (2)

- Sampling Location Map
- Laboratory Reports



Spill Closure Map

GV 2-31

39.482035, -108.141518
Section 32, Township 6 South, Range 96 West

- Sample Location
- ▨ Impacted Area
- Road (from Garfield County)
- Existing Road
- Stream
- Existing Pad
- River



		Location	GV 2-31 SS 1	GV 2-31 SS 2	GV 2-31 LF 1	BKGD 1
Contaminant of Concern ↓	COGCC standards	Date	8/6/2015	8/6/2015	8/6/2015	8/6/2015
Organic Compounds in Soil						
TPH (DRO+GRO)	500	mg/kg	24	23	122	
DRO			24	23	85	
GRO			ND	ND	37	
Benzene	0.17	mg/kg	ND	ND	ND	
Toluene	85	mg/kg	ND	ND	ND	
Ethylbenzene	100	mg/kg	ND	ND	ND	
Xylenes (Total)	175	mg/kg	ND	ND	0.36	
Acenaphthene	1,000	mg/kg	ND	ND	ND	
Anthracene	1,000	mg/kg	ND	ND	ND	
Benzo(A)anthracene	0.22	mg/kg	ND	ND	ND	
Benzo(B)fluoranthene	0.22	mg/kg	ND	ND	ND	
Benzo(K)fluoranthene	2.2	mg/kg	ND	ND	ND	
Benzo(A)pyrene	0.022	mg/kg	ND	ND	ND	
Chrysene	22	mg/kg	ND	ND	ND	
Dibenzo(A,H)anthracene	0.022	mg/kg	ND	ND	ND	
Fluoranthene	1,000	mg/kg	ND	ND	ND	
Fluorene	1,000	mg/kg	ND	ND	0.021	
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND	ND	ND	
Naphthalene	23	mg/kg	ND	ND	ND	
Pyrene	1,000	mg/kg	ND	ND	ND	
Inorganics in Soil						
EC	<4 or 2 x background	mmhos/cm	32	30	16	1.5
SAR	<12		48	22	8.2	0.36
pH	6-9		8.1	8.3	8	8.5

Note:

ND = Non Detect

mg/Kg = milligrams per kilogram = parts per million

Exceeds COGCC standards



14-Aug-2015

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

Re: **GV 2-31 Spill**

Work Order: **1508361**

Dear Karolina,

ALS Environmental received 3 samples on 07-Aug-2015 10:00 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 21.

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

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Client: WPX Energy Rocky Mountain, LLC
Project: GV 2-31 Spill
Work Order: 1508361

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1508361-01	GV 2-31 SS1	Soil		8/6/2015 12:20	8/7/2015 10:00	<input type="checkbox"/>
1508361-02	GV 2-31 SS2	Soil		8/6/2015 12:30	8/7/2015 10:00	<input type="checkbox"/>
1508361-03	GV 2-31 LF1	Soil		8/6/2015 13:00	8/7/2015 10:00	<input type="checkbox"/>

<u>Qualifier</u>	<u>Description</u>
*	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.

<u>Acronym</u>	<u>Description</u>
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

<u>Units Reported</u>	<u>Description</u>
% 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: 14-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GV 2-31 Spill
Sample ID: GV 2-31 SS1
Collection Date: 8/6/2015 12:20 PM

Work Order: 1508361
Lab ID: 1508361-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 8/10/15	Analyst: IT
DRO (C10-C28)	24		4.7	mg/Kg-dry	1	8/11/2015 03:25 PM
Surr: 4-Terphenyl-d14	64.1		39-133	%REC	1	8/11/2015 03:25 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D			Analyst: IT
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	8/7/2015 06:13 PM
Surr: Toluene-d8	102		50-150	%REC	1	8/7/2015 06:13 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/10/15	Analyst: JEC
Calcium	410		5.0	mg/L	10	8/11/2015 10:33 AM
Magnesium	430		2.0	mg/L	10	8/11/2015 10:33 AM
Sodium	5,800		20	mg/L	100	8/11/2015 11:14 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 8/10/15	Analyst: JEC
Sodium Adsorption Ratio	48		0.010	none	1	8/11/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/10/15	Analyst: RS
Acenaphthene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Anthracene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Benzo(a)anthracene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Benzo(a)pyrene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Benzo(b)fluoranthene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Benzo(g,h,i)perylene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Benzo(k)fluoranthene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Chrysene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Dibenzo(a,h)anthracene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Fluoranthene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Fluorene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Naphthalene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Pyrene	ND		7.6	µg/Kg-dry	1	8/10/2015 06:39 PM
Surr: 2-Fluorobiphenyl	50.3		12-100	%REC	1	8/10/2015 06:39 PM
Surr: 4-Terphenyl-d14	87.8		25-137	%REC	1	8/10/2015 06:39 PM
Surr: Nitrobenzene-d5	46.9		37-107	%REC	1	8/10/2015 06:39 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 8/7/15	Analyst: LSY
Benzene	ND		34	µg/Kg-dry	1	8/8/2015 07:03 AM
Ethylbenzene	ND		34	µg/Kg-dry	1	8/8/2015 07:03 AM
m,p-Xylene	ND		69	µg/Kg-dry	1	8/8/2015 07:03 AM
o-Xylene	ND		34	µg/Kg-dry	1	8/8/2015 07:03 AM
Toluene	ND		34	µg/Kg-dry	1	8/8/2015 07:03 AM

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

ALS Group USA, Corp**Date:** 14-Aug-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GV 2-31 Spill**Work Order:** 1508361**Sample ID:** GV 2-31 SS1**Lab ID:** 1508361-01**Collection Date:** 8/6/2015 12:20 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Xylenes, Total	ND		100	µg/Kg-dry	1	8/8/2015 07:03 AM
Surr: 1,2-Dichloroethane-d4	111		70-130	%REC	1	8/8/2015 07:03 AM
Surr: 4-Bromofluorobenzene	90.2		70-130	%REC	1	8/8/2015 07:03 AM
Surr: Dibromofluoromethane	108		70-130	%REC	1	8/8/2015 07:03 AM
Surr: Toluene-d8	98.8		70-130	%REC	1	8/8/2015 07:03 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO			Prep: USDA Method 20B / 8/10/15
Electrical Conductivity @ Saturation	32		0.050	mmhos/cm @2	10	Analyst: JB 8/10/2015 03:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	13		0.050	% of sample	1	8/7/2015 06:16 PM
PH			SW9045D			Prep: EXTRACT / 8/12/15
pH	8.1			s.u.	1	Analyst: JB 8/12/2015 01:00 PM

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

ALS Group USA, Corp

Date: 14-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GV 2-31 Spill
Sample ID: GV 2-31 SS2
Collection Date: 8/6/2015 12:30 PM

Work Order: 1508361
Lab ID: 1508361-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 8/10/15	Analyst: IT
DRO (C10-C28)	23		4.6	mg/Kg-dry	1	8/11/2015 03:55 PM
Surr: 4-Terphenyl-d14	59.2		39-133	%REC	1	8/11/2015 03:55 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D			Analyst: IT
GRO (C6-C10)	ND		2.8	mg/Kg-dry	1	8/7/2015 06:37 PM
Surr: Toluene-d8	105		50-150	%REC	1	8/7/2015 06:37 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/10/15	Analyst: JEC
Calcium	440		5.0	mg/L	10	8/11/2015 10:38 AM
Magnesium	350		2.0	mg/L	10	8/11/2015 10:38 AM
Sodium	3,400		2.0	mg/L	10	8/11/2015 10:38 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 8/10/15	Analyst: JEC
Sodium Adsorption Ratio	30		0.010	none	1	8/11/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/10/15	Analyst: RS
Acenaphthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Anthracene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Benzo(a)anthracene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Benzo(a)pyrene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Benzo(b)fluoranthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Benzo(g,h,i)perylene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Benzo(k)fluoranthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Chrysene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Dibenzo(a,h)anthracene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Fluoranthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Fluorene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Indeno(1,2,3-cd)pyrene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Naphthalene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Pyrene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:02 PM
Surr: 2-Fluorobiphenyl	56.7		12-100	%REC	1	8/10/2015 07:02 PM
Surr: 4-Terphenyl-d14	78.8		25-137	%REC	1	8/10/2015 07:02 PM
Surr: Nitrobenzene-d5	52.6		37-107	%REC	1	8/10/2015 07:02 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 8/7/15	Analyst: LSY
Benzene	ND		34	µg/Kg-dry	1	8/8/2015 06:13 AM
Ethylbenzene	ND		34	µg/Kg-dry	1	8/8/2015 06:13 AM
m,p-Xylene	ND		67	µg/Kg-dry	1	8/8/2015 06:13 AM
o-Xylene	ND		34	µg/Kg-dry	1	8/8/2015 06:13 AM
Toluene	ND		34	µg/Kg-dry	1	8/8/2015 06:13 AM

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

ALS Group USA, Corp**Date:** 14-Aug-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GV 2-31 Spill**Work Order:** 1508361**Sample ID:** GV 2-31 SS2**Lab ID:** 1508361-02**Collection Date:** 8/6/2015 12:30 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Xylenes, Total	ND		100	µg/Kg-dry	1	8/8/2015 06:13 AM
Surr: 1,2-Dichloroethane-d4	109		70-130	%REC	1	8/8/2015 06:13 AM
Surr: 4-Bromofluorobenzene	87.8		70-130	%REC	1	8/8/2015 06:13 AM
Surr: Dibromofluoromethane	109		70-130	%REC	1	8/8/2015 06:13 AM
Surr: Toluene-d8	98.7		70-130	%REC	1	8/8/2015 06:13 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 8/10/15		Analyst: JB
Electrical Conductivity @ Saturation	22		0.050	mmhos/cm @2	10	8/10/2015 03:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	10		0.050	% of sample	1	8/7/2015 06:16 PM
PH			SW9045D	Prep: EXTRACT / 8/12/15		Analyst: JB
pH	8.3			s.u.	1	8/12/2015 01:00 PM

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

ALS Group USA, Corp

Date: 14-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GV 2-31 Spill
Sample ID: GV 2-31 LF1
Collection Date: 8/6/2015 01:00 PM

Work Order: 1508361
Lab ID: 1508361-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 8/10/15	Analyst: IT
DRO (C10-C28)	85		4.6	mg/Kg-dry	1	8/11/2015 04:22 PM
Surr: 4-Terphenyl-d14	61.5		39-133	%REC	1	8/11/2015 04:22 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D			Analyst: IT
GRO (C6-C10)	37		2.8	mg/Kg-dry	1	8/7/2015 07:01 PM
Surr: Toluene-d8	99.5		50-150	%REC	1	8/7/2015 07:01 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/10/15	Analyst: JEC
Calcium	510		5.0	mg/L	10	8/10/2015 01:53 PM
Magnesium	240		2.0	mg/L	10	8/10/2015 01:53 PM
Sodium	2,300		2.0	mg/L	10	8/10/2015 01:53 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 8/10/15	Analyst: JEC
Sodium Adsorption Ratio	21		0.010	none	1	8/10/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/10/15	Analyst: RS
Acenaphthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Anthracene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Benzo(a)anthracene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Benzo(a)pyrene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Benzo(b)fluoranthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Benzo(g,h,i)perylene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Benzo(k)fluoranthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Chrysene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Dibenzo(a,h)anthracene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Fluoranthene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Fluorene	21		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Indeno(1,2,3-cd)pyrene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Naphthalene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Pyrene	ND		7.4	µg/Kg-dry	1	8/10/2015 07:25 PM
Surr: 2-Fluorobiphenyl	59.6		12-100	%REC	1	8/10/2015 07:25 PM
Surr: 4-Terphenyl-d14	75.3		25-137	%REC	1	8/10/2015 07:25 PM
Surr: Nitrobenzene-d5	53.1		37-107	%REC	1	8/10/2015 07:25 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 8/7/15	Analyst: LSY
Benzene	ND		34	µg/Kg-dry	1	8/8/2015 06:38 AM
Ethylbenzene	ND		34	µg/Kg-dry	1	8/8/2015 06:38 AM
m,p-Xylene	210		67	µg/Kg-dry	1	8/8/2015 06:38 AM
o-Xylene	160		34	µg/Kg-dry	1	8/8/2015 06:38 AM
Toluene	ND		34	µg/Kg-dry	1	8/8/2015 06:38 AM

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

ALS Group USA, Corp

Date: 14-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GV 2-31 Spill
Sample ID: GV 2-31 LF1
Collection Date: 8/6/2015 01:00 PM

Work Order: 1508361
Lab ID: 1508361-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Xylenes, Total	360		100	µg/Kg-dry	1	8/8/2015 06:38 AM
Surr: 1,2-Dichloroethane-d4	112		70-130	%REC	1	8/8/2015 06:38 AM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1	8/8/2015 06:38 AM
Surr: Dibromofluoromethane	107		70-130	%REC	1	8/8/2015 06:38 AM
Surr: Toluene-d8	96.3		70-130	%REC	1	8/8/2015 06:38 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 8/10/15		Analyst: JB
Electrical Conductivity @ Saturation	16		0.050	mmhos/cm @2	10	8/10/2015 03:00 PM
MOISTURE			E160.3M			Analyst: EVB
Moisture	11		0.050	% of sample	1	8/7/2015 06:16 PM
PH			SW9045D	Prep: EXTRACT / 8/12/15		Analyst: JB
pH	8.2			s.u.	1	8/12/2015 01:00 PM

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

ALS Group USA, Corp

Date: 14-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74598** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-74598-74598				Units: mg/Kg		Analysis Date: 8/10/2015 07:36 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3411361		Prep Date: 8/10/2015		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 1.476 0 2 0 73.8 39-133 0

LCS		Sample ID: DLCSS1-74598-74598				Units: mg/Kg		Analysis Date: 8/10/2015 08:06 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3411365		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 137.7 5.0 200 0 68.9 61-109 0
Surr: 4-Terphenyl-d14 1.442 0 2 0 72.1 39-133 0

MS		Sample ID: 1508383-05C MS				Units: mg/Kg		Analysis Date: 8/10/2015 08:37 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3411368		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 338.3 11 435.2 6.904 76.1 48-110 0
Surr: 4-Terphenyl-d14 3.828 0 4.352 0 88 39-133 0

MSD		Sample ID: 1508383-05C MSD				Units: mg/Kg		Analysis Date: 8/10/2015 09:07 PM		
Client ID:		Run ID: GC8_150810B				SeqNo: 3411370		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 318.5 11 429.6 6.904 72.5 48-110 338.3 6.05 30
Surr: 4-Terphenyl-d14 3.651 0 4.296 0 85 39-133 3.828 4.75 30

The following samples were analyzed in this batch: 1508361-01A 1508361-02A 1508361-03A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74547a** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-74547-74547a				Units: µg/Kg		Analysis Date: 8/7/2015 01:43 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408701		Prep Date: 8/7/2015		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								
<i>Surr: Toluene-d8</i>	5035	0	5000	0	101	50-150	0			

LCS		Sample ID: LCS-74547-74547a				Units: µg/Kg		Analysis Date: 8/7/2015 01:18 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408700		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	547700	2,500	500000	0	110	70-130	0			
<i>Surr: Toluene-d8</i>	4950	0	5000	0	99	50-150	0			

MS		Sample ID: 1508198-01A MS				Units: µg/Kg		Analysis Date: 8/7/2015 03:47 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408703		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	544100	2,500	500000	0	109	70-130	0			
<i>Surr: Toluene-d8</i>	4829	0	5000	0	96.6	50-150	0			

MSD		Sample ID: 1508198-01A MSD				Units: µg/Kg		Analysis Date: 8/7/2015 04:11 PM		
Client ID:		Run ID: GC10_150807B				SeqNo: 3408704		Prep Date: 8/7/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	550900	2,500	500000	0	110	70-130	544100	1.24	30	
<i>Surr: Toluene-d8</i>	4987	0	5000	0	99.7	50-150	4829	3.22	30	

The following samples were analyzed in this batch:

1508361-01A	1508361-02A	1508361-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74586** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1508361-03BDUP				Units: mg/L		Analysis Date: 8/10/2015 01:59 PM		
Client ID: GV 2-31 LF1		Run ID: ICP2_150810A				SeqNo: 3410199		Prep Date: 8/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	505.6	5.0	0	0	0	0-0	507.4	0.362		
Magnesium	226.2	2.0	0	0	0	0-0	242.6	6.97		
Sodium	2140	2.0	0	0	0	0-0	2302	7.31		

DUP		Sample ID: 1508361-03BDUP				Units: none		Analysis Date: 8/10/2015		
Client ID: GV 2-31 LF1		Run ID: SAR_150810A				SeqNo: 3410269		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	19.88	0.010	0	0	0		21.04	5.7	50	

The following samples were analyzed in this batch:

1508361-01B

1508361-02B

1508361-03B

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74597** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-74597-74597				Units: µg/Kg		Analysis Date: 8/10/2015 04:43 PM		
Client ID:		Run ID: SVMS5_150810A				SeqNo: 3410916		Prep Date: 8/10/2015		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								
<i>Surr: 2-Fluorobiphenyl</i>	1325	0	1667	0	79.5	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1580	0	1667	0	94.8	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1389	0	1667	0	83.4	37-107	0			

LCS		Sample ID: SLCSS1-74597-74597				Units: µg/Kg		Analysis Date: 8/10/2015 05:05 PM		
Client ID:		Run ID: SVMS5_150810A				SeqNo: 3410917		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	548.3	6.7	666.7	0	82.2	45-110	0			
Anthracene	625.3	6.7	666.7	0	93.8	55-105	0			
Benzo(a)anthracene	639.7	6.7	666.7	0	95.9	50-110	0			
Benzo(a)pyrene	657.3	6.7	666.7	0	98.6	50-110	0			
Benzo(b)fluoranthene	662	6.7	666.7	0	99.3	45-115	0			
Benzo(g,h,i)perylene	646	6.7	666.7	0	96.9	40-125	0			
Benzo(k)fluoranthene	655.7	6.7	666.7	0	98.3	45-115	0			
Chrysene	621	6.7	666.7	0	93.1	55-110	0			
Dibenzo(a,h)anthracene	688	6.7	666.7	0	103	40-125	0			
Fluoranthene	652.7	6.7	666.7	0	97.9	55-115	0			
Fluorene	591	6.7	666.7	0	88.6	50-110	0			
Indeno(1,2,3-cd)pyrene	672	6.7	666.7	0	101	40-120	0			
Naphthalene	521	6.7	666.7	0	78.1	40-105	0			
Pyrene	654.3	6.7	666.7	0	98.1	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1284	0	1667	0	77	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1524	0	1667	0	91.4	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1378	0	1667	0	82.7	37-107	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74597** Instrument ID **SVMS5** Method: **SW846 8270D**

MS				Sample ID: 1508383-05C MS			Units: µg/Kg		Analysis Date: 8/10/2015 05:28 PM	
Client ID:				Run ID: SVMS5_150810A			SeqNo: 3412571		Prep Date: 8/10/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1480	18	1844	0	80.2	45-110	0			
Anthracene	1754	18	1844	0	95.1	55-105	0			
Benzo(a)anthracene	1769	18	1844	4.247	95.7	50-110	0			
Benzo(a)pyrene	1799	18	1844	14.7	96.7	50-110	0			
Benzo(b)fluoranthene	1861	18	1844	13.39	100	45-115	0			
Benzo(g,h,i)perylene	1767	18	1844	13.72	95.1	40-125	0			
Benzo(k)fluoranthene	1827	18	1844	5.553	98.8	45-115	0			
Chrysene	1718	18	1844	6.86	92.8	55-110	0			
Dibenzo(a,h)anthracene	1876	18	1844	0	102	40-125	0			
Fluoranthene	1815	18	1844	14.05	97.7	55-115	0			
Fluorene	1639	18	1844	0	88.9	50-110	0			
Indeno(1,2,3-cd)pyrene	1892	18	1844	36.26	101	40-120	0			
Naphthalene	1231	18	1844	0	66.7	40-105	0			
Pyrene	1850	18	1844	14.7	99.5	45-125	0			
Surr: 2-Fluorobiphenyl	3288	0	4610	0	71.3	12-100	0			
Surr: 4-Terphenyl-d14	4301	0	4610	0	93.3	25-137	0			
Surr: Nitrobenzene-d5	3194	0	4610	0	69.3	37-107	0			

MSD				Sample ID: 1508383-05C MSD			Units: µg/Kg		Analysis Date: 8/10/2015 05:52 PM	
Client ID:				Run ID: SVMS5_150810A			SeqNo: 3412572		Prep Date: 8/10/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1671	20	1969	0	84.8	45-110	1480	12.1	30	
Anthracene	1880	20	1969	0	95.5	55-105	1754	6.94	30	
Benzo(a)anthracene	1886	20	1969	4.247	95.6	50-110	1769	6.41	30	
Benzo(a)pyrene	1934	20	1969	14.7	97.4	50-110	1799	7.23	30	
Benzo(b)fluoranthene	1975	20	1969	13.39	99.6	45-115	1861	5.92	30	
Benzo(g,h,i)perylene	1921	20	1969	13.72	96.8	40-125	1767	8.33	30	
Benzo(k)fluoranthene	1949	20	1969	5.553	98.7	45-115	1827	6.47	30	
Chrysene	1852	20	1969	6.86	93.7	55-110	1718	7.48	30	
Dibenzo(a,h)anthracene	2003	20	1969	0	102	40-125	1876	6.52	30	
Fluoranthene	1963	20	1969	14.05	99	55-115	1815	7.83	30	
Fluorene	1773	20	1969	0	90	50-110	1639	7.85	30	
Indeno(1,2,3-cd)pyrene	2043	20	1969	36.26	102	40-120	1892	7.68	30	
Naphthalene	1561	20	1969	0	79.2	40-105	1231	23.6	30	
Pyrene	2003	20	1969	14.7	101	45-125	1850	7.9	30	
Surr: 2-Fluorobiphenyl	3780	0	4923	0	76.8	12-100	3288	13.9	40	
Surr: 4-Terphenyl-d14	4557	0	4923	0	92.6	25-137	4301	5.8	40	
Surr: Nitrobenzene-d5	4063	0	4923	0	82.5	37-107	3194	23.9	40	

The following samples were analyzed in this batch:

1508361-01A 1508361-02A 1508361-03A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74561** Instrument ID **VMS6** Method: **SW8260B**

MBLK				Sample ID: MBLK-74561-74561				Units: µg/Kg			Analysis Date: 8/7/2015 04:18 PM			
Client ID:				Run ID: VMS6_150807A				SeqNo: 3409737			Prep Date: 8/7/2015		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	1020	0	1000	0	102	70-130		0						
Surr: 4-Bromofluorobenzene	965.5	0	1000	0	96.6	70-130		0						
Surr: Dibromofluoromethane	1038	0	1000	0	104	70-130		0						
Surr: Toluene-d8	989.5	0	1000	0	99	70-130		0						

LCS				Sample ID: LCS-74561-74561			Units: µg/Kg		Analysis Date: 8/7/2015 02:43 PM		
Client ID:			Run ID: VMS6_150807A			SeqNo: 3409735		Prep Date: 8/7/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1008	30	1000	0	101	75-125	0				
Ethylbenzene	971.5	30	1000	0	97.2	75-125	0				
m,p-Xylene	1946	60	2000	0	97.3	80-125	0				
o-Xylene	931	30	1000	0	93.1	75-125	0				
Toluene	974	30	1000	0	97.4	70-125	0				
Xylenes, Total	2876	90	3000	0	95.9	75-125	0				
Surr: 1,2-Dichloroethane-d4	994.5	0	1000	0	99.4	70-130	0				
Surr: 4-Bromofluorobenzene	981.5	0	1000	0	98.2	70-130	0				
Surr: Dibromofluoromethane	994.5	0	1000	0	99.4	70-130	0				
Surr: Toluene-d8	971	0	1000	0	97.1	70-130	0				

MS				Sample ID: 1508361-02A MS			Units: µg/Kg		Analysis Date: 8/8/2015 09:11 AM		
Client ID: GV 2-31 SS2			Run ID: VMS9_150807B		SeqNo: 3409550		Prep Date: 8/7/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1078	30	1000	0	108	75-125	0				
Ethylbenzene	999	30	1000	0	99.9	75-125	0				
m,p-Xylene	1886	60	2000	0	94.3	80-125	0				
o-Xylene	904.5	30	1000	0	90.4	75-125	0				
Toluene	1045	30	1000	0	104	70-125	0				
Xylenes, Total	2791	90	3000	0	93	75-125	0				
Surr: 1,2-Dichloroethane-d4	1086	0	1000	0	109	70-130	0				
Surr: 4-Bromofluorobenzene	1070	0	1000	0	107	70-130	0				
Surr: Dibromofluoromethane	1057	0	1000	0	106	70-130	0				
Surr: Toluene-d8	993	0	1000	0	99.3	70-130	0				

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74561** Instrument ID **VMS6** Method: **SW8260B**

MSD				Sample ID: 1508361-02A MSD			Units: µg/Kg		Analysis Date: 8/8/2015 09:36 AM	
Client ID: GV 2-31 SS2				Run ID: VMS9_150807B			SeqNo: 3409551		Prep Date: 8/7/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1096	30	1000	0	110	75-125	1078	1.61	30	
Ethylbenzene	1066	30	1000	0	107	75-125	999	6.49	30	
m,p-Xylene	2008	60	2000	0	100	80-125	1886	6.24	30	
o-Xylene	945	30	1000	0	94.5	75-125	904.5	4.38	30	
Toluene	1102	30	1000	0	110	70-125	1045	5.26	30	
Xylenes, Total	2953	90	3000	0	98.4	75-125	2791	5.64	30	
Surr: 1,2-Dichloroethane-d4	1052	0	1000	0	105	70-130	1086	3.13	30	
Surr: 4-Bromofluorobenzene	1084	0	1000	0	108	70-130	1070	1.21	30	
Surr: Dibromofluoromethane	1020	0	1000	0	102	70-130	1057	3.61	30	
Surr: Toluene-d8	1003	0	1000	0	100	70-130	993	1	30	

The following samples were analyzed in this batch:

1508361-01A	1508361-02A	1508361-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74586** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1508361-03B DUP				Units: mmhos/cm @25°		Analysis Date: 8/10/2015 03:00 PM		
Client ID: GV 2-31 LF1		Run ID: WETCHEM_150810E				SeqNo: 3410508		Prep Date: 8/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	15.27	0.050	0	0	0		16.22	6.03	50	

The following samples were analyzed in this batch:

1508361-01B	1508361-02B	1508361-03B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74708** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-74708-74708				Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:		Run ID: WETCHEM_150812H				SeqNo: 3414137		Prep Date: 8/12/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 3.95 0 4 0 98.8 90-110 0

DUP				Sample ID: 1508361-01A DUP				Units: s.u.			Analysis Date: 8/12/2015 01:00 PM			
Client ID: GV 2-31 SS1				Run ID: WETCHEM_150812H				SeqNo: 3414139			Prep Date: 8/12/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH 8.25 0 0 0 0 0-0 8.13 1.47 20

DUP		Sample ID: 1508443-05A DUP					Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:			Run ID: WETCHEM_150812H			SeqNo: 3414147		Prep Date: 8/12/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH 8.13 0 0 0 0 0-0 8.19 0.735 20

The following samples were analyzed in this batch:

1508361-01A 1508361-02A 1508361-03A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508361
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **R169302** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R169302				Units: % of sample		Analysis Date: 8/7/2015 06:16 PM		
Client ID:		Run ID: MOIST_150807B				SeqNo: 3409784		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-R169302				Units: % of sample		Analysis Date: 8/7/2015 06:16 PM		
Client ID:		Run ID: MOIST_150807B				SeqNo: 3409783		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: 1508153-02B DUP				Units: % of sample		Analysis Date: 8/7/2015 06:16 PM		
Client ID:		Run ID: MOIST_150807B				SeqNo: 3409762		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.65 0.050 0 0 0 11.58 16.4 20

DUP		Sample ID: 1508366-02A DUP				Units: % of sample		Analysis Date: 8/7/2015 06:16 PM		
Client ID:		Run ID: MOIST_150807B				SeqNo: 3409780		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 18.28 0.050 0 0 0 17.58 3.9 20

The following samples were analyzed in this batch:

1508361-01A	1508361-02A	1508361-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.



ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 20218

WORKORDER #

1508361

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DISPOSAL

By Lab or Return to Client

PROJECT NAME	GV 2-31 Spill	SAMPLER	Jessica Dilka	DATE	8/6/15	TURNAROUND	5 Day
PROJECT No.		SITE ID	GV 2-31 Spill				
		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				
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
1	GV 2-31 SS1	S	8/6/15	1220	2	8	x
2	GV 2-31 SS2	S	8/6/15	1230	2	8	x
3	GV 2-31 LF1	S	8/6/15	1300	2	8	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:	QC PACKAGE (check below)
Please send copy data to tdobransky@olssonassociates.com	X LEVEL II (Standard QC)
Table 910-1 list for anions and PAH's	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	8/6/15	1340
RECEIVED BY		8-6-15	1340
RELINQUISHED BY		8-6-15	1400
RECEIVED BY	Keith W. ERENCA	8/7/15	1000
RELINQUISHED BY			
RECEIVED BY			

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **07-Aug-15 10:00**

Work Order: **1508361**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

07-Aug-15
Date

Reviewed by: Chad Whelton
eSignature

07-Aug-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): 2.4/2.4 C SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 8/7/2015 12:04:56 PM

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:



14-Aug-2015

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

Re: **GV 2-31 Spill**

Work Order: **1508363**

Dear Karolina,

ALS Environmental received 3 samples on 07-Aug-2015 10:00 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 13.

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

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy Rocky Mountain, LLC
Project: GV 2-31 Spill
Work Order: 1508363

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1508363-01	GV 2-31 - B-1	Soil		8/6/2015 12:10	8/7/2015 10:00	<input type="checkbox"/>
1508363-02	GV 2-31 - B-2	Soil		8/6/2015 12:15	8/7/2015 10:00	<input type="checkbox"/>
1508363-03	GV 2-31 - B-3	Soil		8/6/2015 13:05	8/7/2015 10:00	<input type="checkbox"/>

<u>Qualifier</u>	<u>Description</u>
*	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.

<u>Acronym</u>	<u>Description</u>
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

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
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: 14-Aug-15

Client: WPX Energy Rocky Mountain, LLC
 Project: GV 2-31 Spill
 Sample ID: GV 2-31 - B-1
 Collection Date: 8/6/2015 12:10 PM

Work Order: 1508363
 Lab ID: 1508363-01
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	12		SW846 6010C 0.43	mg/L-dry	Prep: SW3050B / 8/10/15 1	Analyst: JEC 8/12/2015 04:06 PM
SOLUBLE CATIONS FOR SAR						
Calcium	210		SW846 6010C 5.0	mg/L	Prep: USDA Method 20B / 8/10/15 10	Analyst: JEC 8/11/2015 10:44 AM
Magnesium	36		2.0	mg/L	10	8/11/2015 10:44 AM
Sodium	21		2.0	mg/L	10	8/11/2015 10:44 AM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.36		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 8/10/15 1	Analyst: JEC 8/11/2015
ELECTRICAL CONDUCTIVITY (SAR)						
Electrical Conductivity @ Saturation	1.5		USDA H60 METHO 0.050	mmhos/cm @2	Prep: USDA Method 20B / 8/10/15 10	Analyst: JB 8/10/2015 03:00 PM
MOISTURE						
Moisture	5.3		E160.3M 0.050	% of sample	1	Analyst: EVB 8/12/2015 01:50 PM
PH						
pH	8.5		SW9045D	s.u.	Prep: EXTRACT / 8/12/15 1	Analyst: JB 8/12/2015 01:00 PM

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

ALS Group USA, Corp**Date:** 14-Aug-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GV 2-31 Spill**Work Order:** 1508363**Sample ID:** GV 2-31 - B-2**Lab ID:** 1508363-02**Collection Date:** 8/6/2015 12:15 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	13		SW846 6010C 0.43	mg/L-dry	Prep: SW3050B / 8/10/15 1	Analyst: JEC 8/12/2015 04:12 PM
MOISTURE						
Moisture	11		E160.3M 0.050	% of sample	1	Analyst: EVB 8/12/2015 01:50 PM

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

ALS Group USA, Corp**Date:** 14-Aug-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GV 2-31 Spill**Work Order:** 1508363**Sample ID:** GV 2-31 - B-3**Lab ID:** 1508363-03**Collection Date:** 8/6/2015 01:05 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	13		SW846 6010C 0.46	mg/L-dry	1	Prep: SW3050B / 8/10/15 Analyst: JEC 8/12/2015 04:18 PM
MOISTURE						
Moisture	10		E160.3M 0.050	% of sample	1	Analyst: EVB 8/12/2015 01:50 PM

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

ALS Group USA, Corp

Date: 14-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508363
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74586** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1508361-03BDUP				Units: mg/L		Analysis Date: 8/10/2015 01:59 PM		
Client ID:		Run ID: ICP2_150810A				SeqNo: 3410199		Prep Date: 8/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	505.6	5.0	0	0	0	0-0	507.4	0.362		
Magnesium	226.2	2.0	0	0	0	0-0	242.6	6.97		
Sodium	2140	2.0	0	0	0	0-0	2302	7.31		

DUP		Sample ID: 1508361-03BDUP				Units: none		Analysis Date: 8/10/2015		
Client ID:		Run ID: SAR_150810A				SeqNo: 3410269		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	19.88	0.010	0	0	0		21.04	5.7	50	

The following samples were analyzed in this batch:

1508363-01B

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508363
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74606** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-74606-74606				Units: mg/Kg		Analysis Date: 8/10/2015 02:05 PM		
Client ID:		Run ID: ICP2_150810A				SeqNo: 3410200		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic ND 0.25

LCS		Sample ID: LCS-74606-74606				Units: mg/Kg		Analysis Date: 8/10/2015 02:11 PM		
Client ID:		Run ID: ICP2_150810A				SeqNo: 3410201		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 5.244 0.25 5 0 105 80-120 0

MS		Sample ID: 1508443-04AMS				Units: mg/Kg		Analysis Date: 8/10/2015 02:28 PM		
Client ID:		Run ID: ICP2_150810A				SeqNo: 3410204		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 20.3 0.41 8.251 10.46 119 75-125 0

MSD		Sample ID: 1508443-04AMSD				Units: mg/Kg		Analysis Date: 8/10/2015 02:33 PM		
Client ID:		Run ID: ICP2_150810A				SeqNo: 3410205		Prep Date: 8/10/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 20.04 0.41 8.251 10.46 116 75-125 20.3 1.28 20

The following samples were analyzed in this batch:

1508363-01A	1508363-02A	1508363-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508363
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74586** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1508361-03B DUP				Units: mmhos/cm @25°		Analysis Date: 8/10/2015 03:00 PM		
Client ID:		Run ID: WETCHEM_150810E				SeqNo: 3410508		Prep Date: 8/10/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	15.27	0.050	0	0	0		16.22	6.03	50	

The following samples were analyzed in this batch:

1508363-01B

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508363
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **74708** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-74708-74708					Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:		Run ID: WETCHEM_150812H					SeqNo: 3414137		Prep Date: 8/12/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	3.95	0	4	0	98.8	90-110	0			
----	------	---	---	---	------	--------	---	--	--	--

DUP		Sample ID: 1508361-01A DUP				Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:		Run ID: WETCHEM_150812H				SeqNo: 3414139		Prep Date: 8/12/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	8.25	0	0	0	0	0-0	8.13	1.47	20	
----	------	---	---	---	---	-----	------	------	----	--

DUP		Sample ID: 1508443-05A DUP					Units: s.u.		Analysis Date: 8/12/2015 01:00 PM		
Client ID:			Run ID: WETCHEM_150812H			SeqNo: 3414147		Prep Date: 8/12/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	8.13	0	0	0	0	0-0	8.19	0.735	20	
----	------	---	---	---	---	-----	------	-------	----	--

The following samples were analyzed in this batch:

1508363-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508363
Project: GV 2-31 Spill

QC BATCH REPORT

Batch ID: **R169565** Instrument ID **MOIST** Method: **E160.3M**

MBLK				Sample ID: WBLKS-R169565				Units: % of sample			Analysis Date: 8/12/2015 01:50 PM			
Client ID:				Run ID: MOIST_150812A				SeqNo: 3415572			Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Moisture		0.03	0.050								J			

LCS		Sample ID: LCS-R169565				Units: % of sample		Analysis Date: 8/12/2015 01:50 PM		
Client ID:		Run ID: MOIST_150812A			SeqNo: 3415571		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: 1508376-01A DUP				Units: % of sample		Analysis Date: 8/12/2015 01:50 PM		
Client ID:		Run ID: MOIST_150812A			SeqNo: 3415555		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	12.44	0.050	0	0	0		13.12	5.32	20	

DUP				Sample ID: 1508376-11A DUP				Units: % of sample			Analysis Date: 8/12/2015 01:50 PM			
Client ID:				Run ID: MOIST_150812A				SeqNo: 3415569			Prep Date:		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture				12.1	0.050	0	0	0		12	0.83	20		

The following samples were analyzed in this batch:

1508363-01A	1508363-02A	1508363-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

WORKORDER
#

1508363

PAGE

1 of 1

DISPOSAL





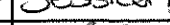

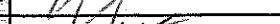
By Lab or Return to Client

[illegible]

*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: <div style="text-align: right;">2.4°C</div>		QC PACKAGE (check below)	
Please send copy data to tdobransky@olssonassociates.com		<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
Table 910-1 list for anions and PAH's		<input type="checkbox"/>	LEVEL III (Std QC + forms)
		<input type="checkbox"/>	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 Dilcar	8/6/15	1340
RECEIVED BY			8-6-15	1340
RELINQUISHED BY			8-6-15	1400
RECEIVED BY		Kenna Wilkerson	8/7/15	1000
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **07-Aug-15 10:00**

Work Order: **1508363**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

07-Aug-15
Date

Reviewed by: Chad Whelton
eSignature

07-Aug-15
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.4/2.4 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>8/7/2015 12:07:50 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: