District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

OIL CONS. DIV DIST. 3

NOV 28 2016

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: WPX Energy Production	Contact: Deborah Watson
Address: PO Box 640	Telephone No.: 505-333-1880
Facility Name: W Lybrook UT #707H, W Lybrook UT #708H, W Lybrook UT #709H, W Lybrook UT#747H, W Lybrook UT #748H, W Lybrook UT #749H	Facility Type: Well Site

Surface Owner: IA	Mineral Owner: IA/Federal	API No. 30-045-35739, 30-045-35740, 30-045-35741, 30-045-35742, 30-045-35743, 30-045-35744

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	12	23N	09W	790	South	270	East	San Juan

Latitude N36.236505 **Longitude** W107.732568

NATURE OF RELEASE

Type of Release: Fire/Liquids (produced water and crude oil)	Volume of Release: unknown	Volume Recovered: unknown
Source of Release: Tanks	Date and Hour of Occurrence: 07/11/16 10:18 PM	Date and Hour of Discovery: 07/11/16 10:18 PM
Was Immediate Notice Given? Within 24 hours ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Katherina Diemer (BLM-FFO) and Cory Smith (NMOCD)	
By Whom? Deborah Watson	Date and Hour: 07/11/16 @ approximately 10:45 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*N/A

Describe Cause of Problem and Remedial Action Taken.*Based on third party investigation, the cause of the fire was likely equipment failure-evidence suggests the fire initiated at an onsite transfer pump.

Describe Area Affected and Cleanup Action Taken.*

- No injuries.
- All fluids remained on location.
- Impacted soils were excavated and transported to landfarm for disposal.
- Confirmation soil samples were collected from within the fire impacted area. Representatives from BLM-FFO and NMOCD were in attendance for sampling events on July 28 and August 24, 2016. Laboratory results are included within the attached report.
- WPX received approval to backfill the location from BLM-FFO and NMOCD on August 29, 2016.
- Final report is attached.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Deborah Watson	OIL CONSERVATION DIVISION	
Printed Name: Deborah Watson	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date: 1/23/17	Expiration Date:
E-mail Address: Deborah.watson@wpxenergy.com	Conditions of Approval: —	Attached ☐
Date: 11/23/16 Phone: 505-333-1880		

* Attach Additional Sheets If Necessary #NCS 1628627659 3RP-1040

70

West Lybrook Unit #707H Well Pad Release Report
Unit Letter P, Section 12, Township 23N, Range 9W
San Juan County, NM

November 23, 2016

1.0 Introduction

On July 11, 2016, a flash fire and hydrocarbon liquid fire occurred on the W Lybrook Unit #707H Well Pad, located within Unit Letter P, Section 12, Township 23N, Range 9W, San Juan County, New Mexico. The fire impacted 36 temporary storage tanks containing produced water and crude oil; most of the fluids contained in the impacted tanks were consumed by the fire. Fluids not consumed by the fire and released from the tanks remained on the well pad. Cleanup at the site consisted of washing and removal of impacted equipment and excavation and disposal of impacted soil.

A topographic map of the location is included as Figure 1 and an aerial site map is included as Figure 2.

2.0 Release Summary

Location: W Lybrook Unit (WLU) #707H Well Pad
Well(s): WLU #707H, WLU #708H, WLU #709H, WLU #747H, WLU #748H, and WLU #749H
Site Location Description: Unit Letter P, Section 12, Township 23N, Range 9W
Wellhead Latitude/Longitude: N36.236637, W107.732892
Source Point Latitude/Longitude: N36.236505, W107.732568
Cause: Equipment failure at transfer pump
Land Jurisdiction: Indian Allotted, Bureau of Land Management (BLM)
Agency Notification: New Mexico Oil Conservation Division (NMOCD), BLM Farmington Field Office (BLM-FFO), and Federal Indian Minerals Office (FIMO)
Agency Notification Date(s): July 11 and 12, 2016
Source of Release: onsite tanks
Release Contents: produced water and crude oil
Volume Released: undetermined
Volume of Impacted Soil Removed: approximately 7,600 cubic yards
NMOCD Initial Cleanup Site Ranking: 30
NMOCD Updated Site Ranking: 10

3.0 NMOD Site Ranking

In accordance with *New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), this site was initially assigned a ranking score of 30. Based on an initial ranking score of 30, Recommended Remediation Action Levels (RRAL) for impacted soils at the site are as follows: 10 mg/kg benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

- *Groundwater:* Due to lack of data, depth to groundwater was estimated at less than or equal to 50 feet below ground surface (bgs). The estimate was based on the elevation differential between the site and Kimbeto Wash. Following cleanup activities, anode ground beds were installed at the location and groundwater was located at 115 feet bgs. Groundwater data changes the site ranking score from 30 to 10. Based on a ranking score of 10, RRAL are as follows: 10 mg/kg benzene, 50 mg/kg total BTEX, and 1,000 mg/kg TPH (as GRO/DRO).
- *Water Wells:* A review was completed of the New Mexico Office of the State Engineer Online New Mexico Water Rights Reporting System and no water wells were identified within a 1,000 feet radius of the location.

- Surface Water: Kimbeto Wash is located approximately 230 feet from impacted soils.

4.0 Field Activities

Cleanup at the site was completed under the direction of Allied International Emergency (AIE), a third party remediation service company. AIE took control of the location on July 15, 2016. Cleanup activities began on July 21, 2016 and included the following:

- Tanks and equipment were power-washed and cleaned prior to removal from the location. Washing activities were confined to fire impacted areas on location.
- Damaged and cleaned equipment was dismantled and collected by the property owner or transported to a recycling/disposal facility.
- Impacted and residual fluids and tank washout fluids were trucked off location to a disposal facility.
- Fire impacted soils were mechanically excavated and transported to Envirotech landfarm for disposal. Approximately 7,600 cubic yards of impacted soils were removed from an area of excavation measuring approximately 180 to 230 feet wide x 520 feet long x 0.5 to 14 feet deep.

5.0 Soil Sampling

On July 28, 2016, one confirmation soil sample (072816-1 meters) was collected from within the remediated area located beneath the meters. Mr. Cory Smith, NMOCD, was present during collection of the sample. The sample was analyzed for:

- Volatiles per U.S. Environmental Protection Agency (USEPA) Method 8260B, and
- TPH (GRO/DRO/MRO) per USEPA Method 8015M/D, and
- Chlorides per USEPA Method 300.0.

On August 24, 2016, sixteen confirmation soil samples were collected by Heather Woods, Rule Engineering, from within the remediated area. Representatives from BLM-FFO and NMOCD were onsite during collection of the confirmation samples. FIMO was invited to the sampling event but did not have a representative in attendance.

Samples S-1 through S-13 were analyzed for the following:

- Volatiles per USEPA Method 8260B, and
- TPH (GRO/DRO/MRO) per USEPA Method 8015M/D, and
- Chloride per USEPA Method 300.0 (Sample S-4 only).

Samples Metals-1 through Metals-3 were analyzed for the following:

- Arsenic, barium, cadmium, chromium, lead, selenium, and silver per USEPA Method 6010B, and
- Mercury per USEPA Method 7471.

All soil samples composited for laboratory analysis were placed into laboratory supplied glassware, labeled, and shipped on ice to Hall Environmental Analysis Laboratory. Sample locations are presented on Figures 3 and 4.

6.0 Analytical Results

Final laboratory analytical results for soil samples (072816-1 meters, S-1 through S-13) reported benzene and total BTEX below laboratory detection limits. Concentrations of total TPH (GRO/DRO) were reported below 100 mg/kg in all confirmation samples.

Laboratory analytical results are summarized in Table 1 and Table 2. Analytical laboratory reports are attached.

7.0 Conclusions

On July 11, 2016, a flash fire and hydrocarbon liquid fire broke out on the WLU #707H Well Pad, located in Unit Letter P, Section 12, Township 23N, Range 9W, San Juan County, New Mexico. Approximately 7,600 cubic yards of impacted soils were removed from the location. Confirmation samples were collected from within the impacted area. Laboratory analytical results for confirmation samples reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below applicable NMOCD RRAL. On August 29, 2016, WPX received permission from BLM-FFO and NMOCD to backfill the location. Backfilling of the location occurred between August 29 and September 9, 2016.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended. For additional information or questions regarding site conditions, please contact me at 505-333-1880.

Sincerely,

Deborah Watson

Deborah Watson
Environmental Specialist

Attachments
Figure 1. Topographic Map
Figure 2. Aerial Site Map
Figure 3. Soil Sample Locations (072816-1 Meters and S-1 through S-13)
Figure 4. Soil Sample Locations (Metals-1 through Metals-3)
Table 1. Soil Sampling Results-Volatiles, TPH, and Chloride
Table 2. Soil Sampling Results-Metals
Hall Analytical Laboratory Reports (Report #1607F33 and Report #1608E24)

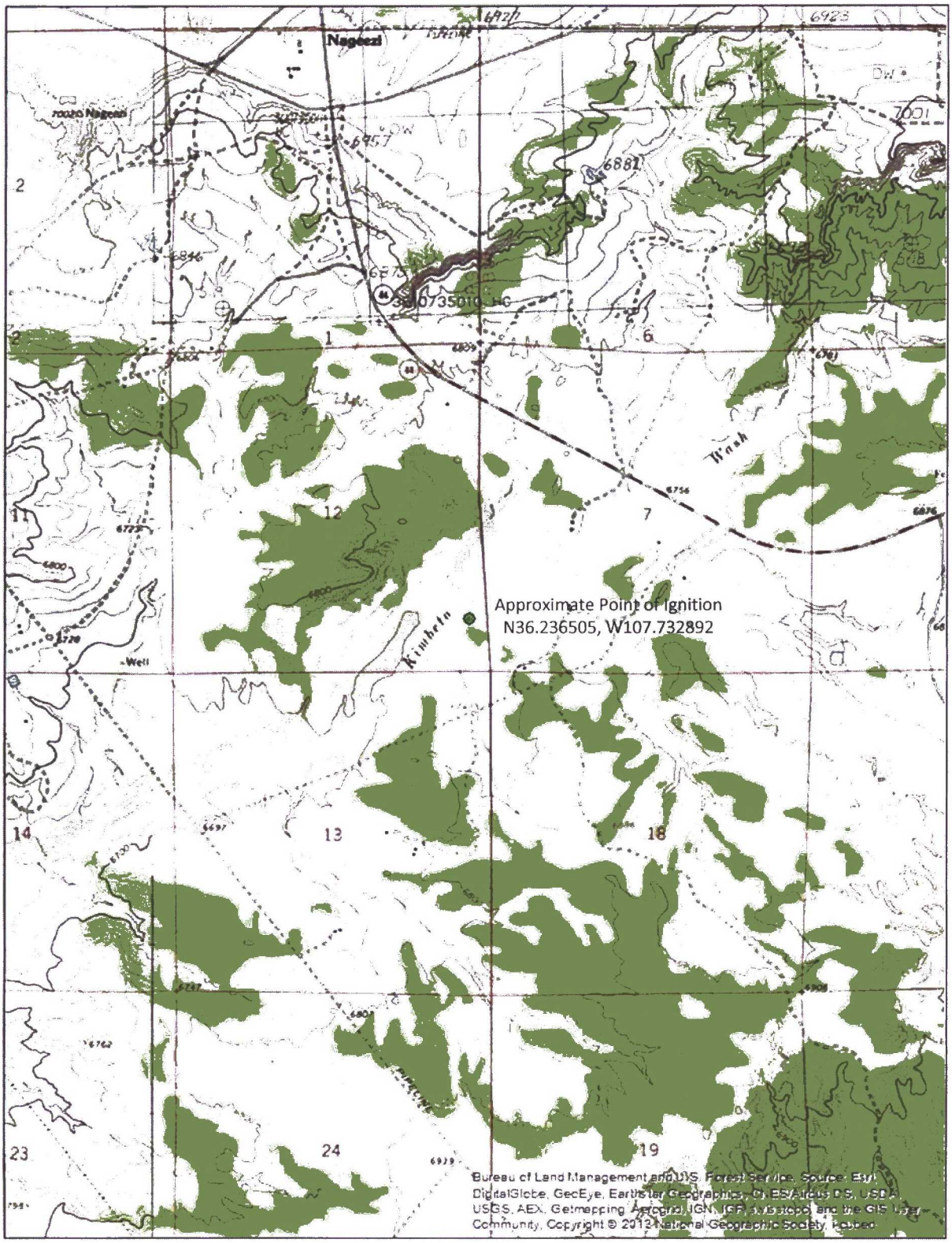

Figure 1. Topographic Map
W Lybrook Unit #707H Well Pad
Section 12, Township 23N, Range 09W
N36.236637, W107.732892
San Juan County, NM
Scale 1:24,000

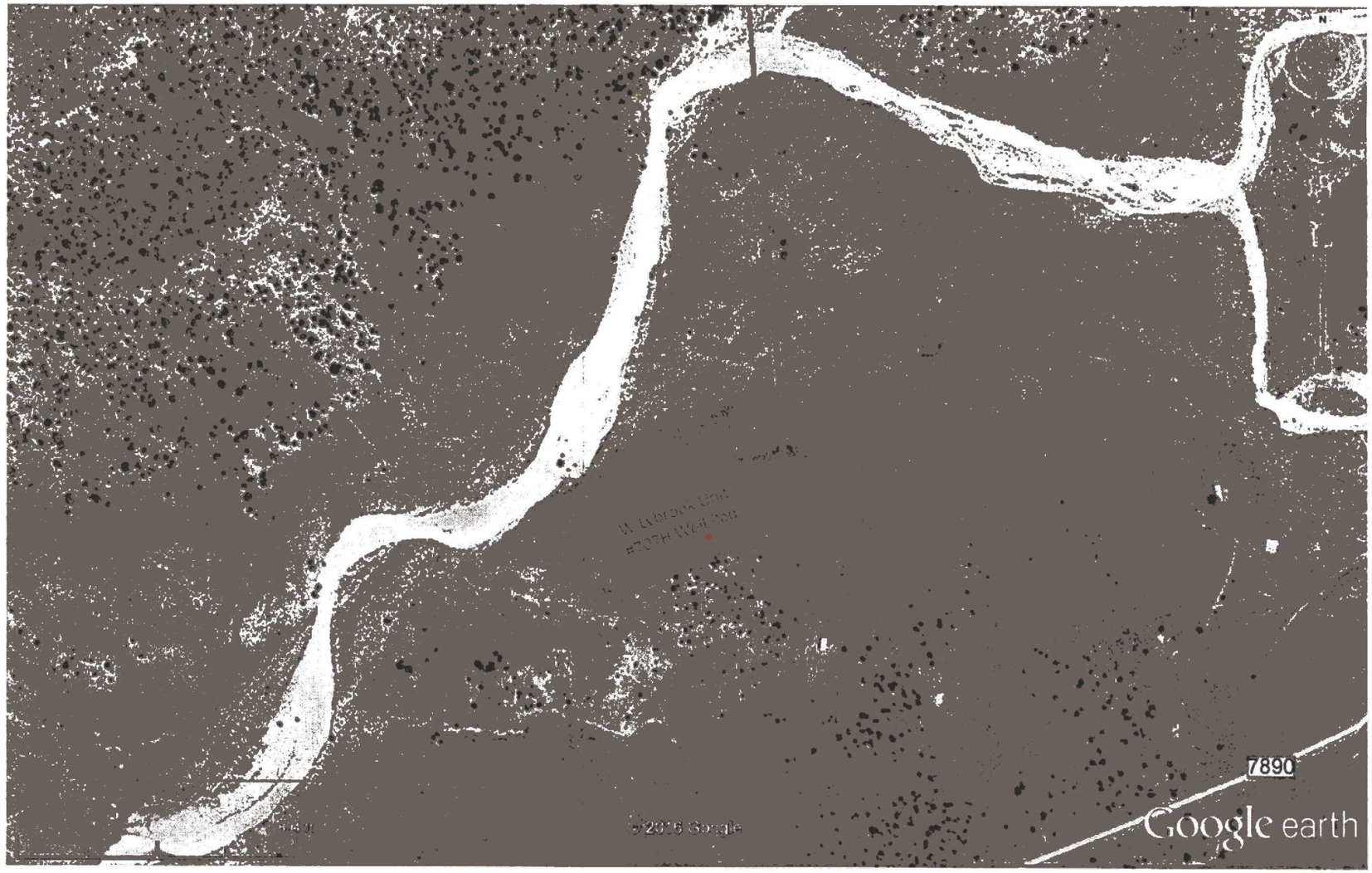

Figure 2. Aerial Site Map
W Lybrook Unit #707H Well Pad
Section 12, Township 23N, Range 09W
N36.236637, W107.732892
San Juan County, NM

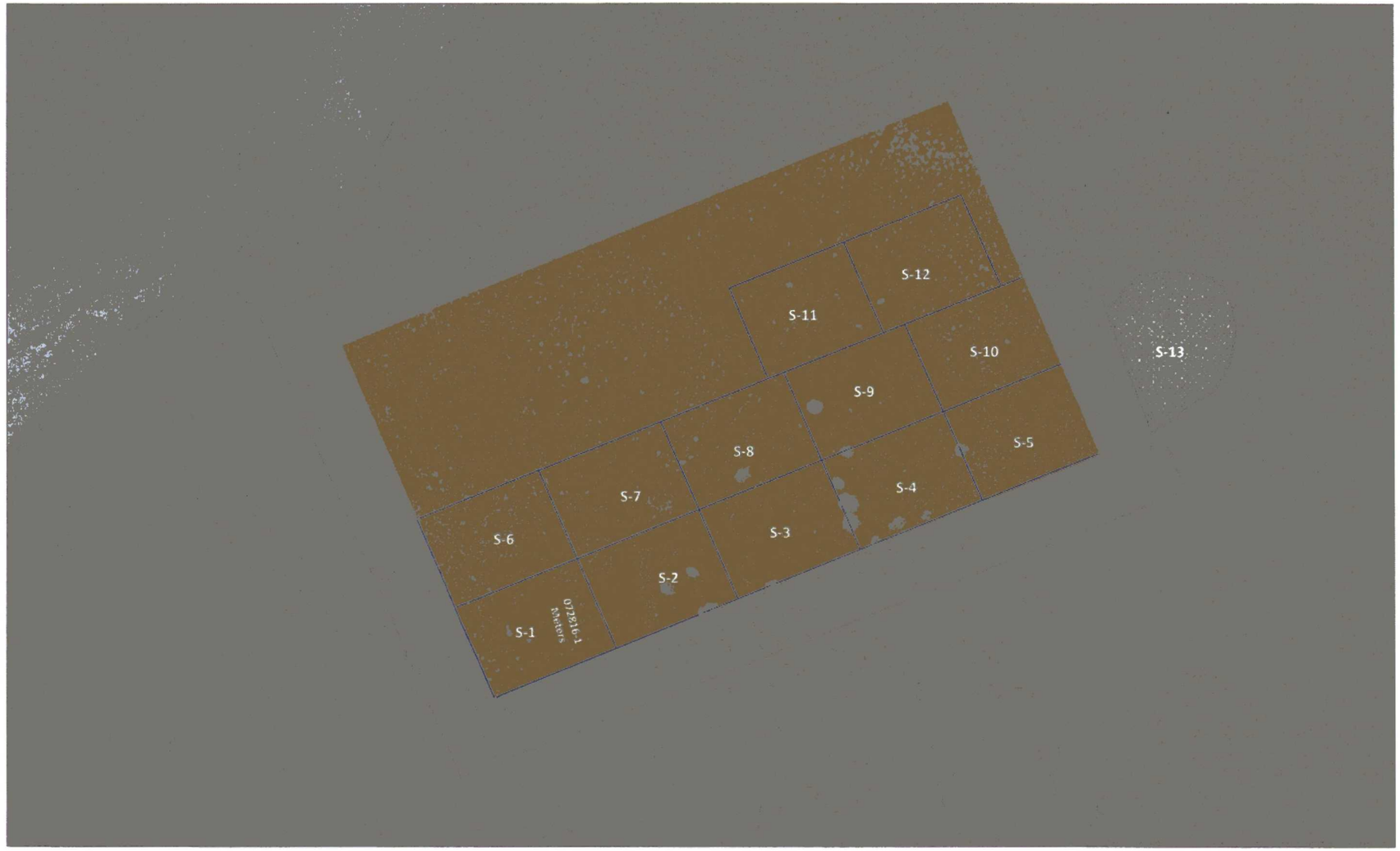

Figure 3. Soil Sample Locations
W Lybrook Unit #707H Well Pad
(072816-1 Meters and S-1 through S-13)
Section 12, Township 23N, Range 09W
N36.236637, W107.732892
San Juan County, NM

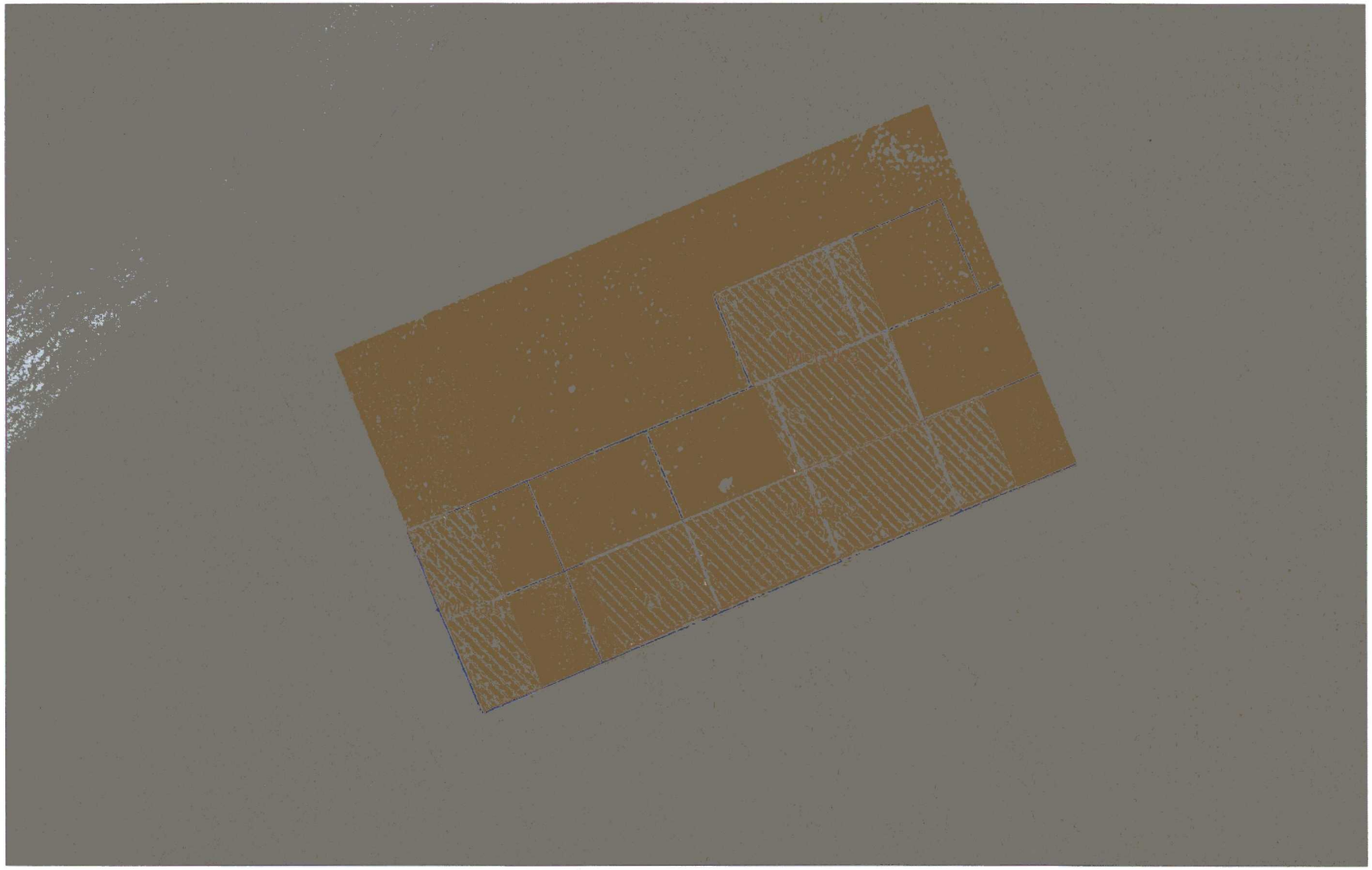

Figure 4. Soil Sample Locations
W Lybrook Unit #707H Well Pad
(Metals-1 through Metals-3)
Section 12, Township 23N, Range 09W
N36.236637, W107.732892
San Juan County, NM

Table 1. Soil Sampling Results Summary
TPH, BTEX, and Chloride
W Lybrook Unit #707H Well Pad

Sample Name	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes mg/kg	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)	Chloride (mg/kg)
NMOCD RRAL-Based on Site Ranking of 30		**10**	**NE**	**NE**	**NE**	**50**	**100**		**NE**	**NE**
NMOCD RRAL-Based on Site Ranking of 10		**10**	**NE**	**NE**	**NE**	**50**	**1,000**		**NE**	**NE**
072816-1(meters)	28-Jul-16	ND	ND	ND	ND	ND	ND	ND	ND	45
S-1	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	58	NA
S-2	24-Aug-16	ND	ND	ND	ND	ND	ND	14	ND	NA
S-3	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	NA
S-4	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	92
S-5	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	NA
S-6	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	63	NA
S-7	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	NA
S-8	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	NA
S-9	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	NA
S-10	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	NA
S-11	24-Aug-16	ND	ND	ND	ND	ND	ND	40	70	NA
S-12	24-Aug-16	ND	ND	ND	ND	ND	ND	14	ND	NA
S-13	24-Aug-16	ND	ND	ND	ND	ND	ND	ND	ND	NA

NE-not established

ND-not detected above laboratory reporting limits

NA-not analyzed

Table 2. Soil Sampling Results
Metals
W Lybrook Unit #707H Well Pad

Sample Name	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Mercury (mg/kg)	Lead (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)
Metals-1	24-Aug-16	ND	180	ND	7.1	ND	6.6	ND	ND
Metals-2	24-Aug-16	ND	210	ND	5.4	ND	4.9	ND	ND
Metals-3	24-Aug-16	ND	360	ND	3.9	ND	4.0	ND	ND

NE-not established

ND-not detected above laboratory reporting limits

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 09, 2016

Debbie Watson

WPX Energy
721 S Main Ave
Aztec, NM 87410
TEL: (505) 333-1880
FAX

RE: WLU 6 Well Pad OrderNo.: 1607F33

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/29/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1607F33**
Date Reported: **8/9/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy
Project: WLU 6 Well Pad
Lab ID: 1607F33-001 **Matrix:** SOIL

Client Sample ID: 072816-1 (meters)
Collection Date: 7/28/2016 9:56:00 AM
Received Date: 7/29/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Chloride	45	30		mg/Kg	20	8/2/2016 7:55:27 PM	26746
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**KJH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/2/2016 10:12:58 PM	26715
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/2/2016 10:12:58 PM	26715
Surr: DNOP	93.6	70-130		%Rec	1	8/2/2016 10:12:58 PM	26715
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/1/2016 10:24:08 AM	26693
Surr: BFB	94.9	49.4-163		%Rec	1	8/1/2016 10:24:08 AM	26693
EPA METHOD 8260B: VOLATILES						Analyst:	**DJF**
Benzene	ND	0.023		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Toluene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Ethylbenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Methyl tert-butyl ether (MTBE)	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2,4-Trimethylbenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,3,5-Trimethylbenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2-Dichloroethane (EDC)	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2-Dibromoethane (EDB)	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Naphthalene	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1-Methylnaphthalene	ND	0.18		mg/Kg	1	8/6/2016 4:20:29 AM	26693
2-Methylnaphthalene	ND	0.18		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Acetone	ND	0.69		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Bromobenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Bromodichloromethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Bromoform	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Bromomethane	ND	0.14		mg/Kg	1	8/6/2016 4:20:29 AM	26693
2-Butanone	ND	0.46		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Carbon disulfide	ND	0.46		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Carbon tetrachloride	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Chlorobenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Chloroethane	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Chloroform	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Chloromethane	ND	0.14		mg/Kg	1	8/6/2016 4:20:29 AM	26693
2-Chlorotoluene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
4-Chlorotoluene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
cis-1,2-DCE	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
cis-1,3-Dichloropropene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2-Dibromo-3-chloropropane	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Dibromochloromethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy
Project: WLU 6 Well Pad
Lab ID: 1607F33-001 **Matrix:** SOIL

Client Sample ID: 072816-1 (meters)
Collection Date: 7/28/2016 9:56:00 AM
Received Date: 7/29/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Dibromomethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2-Dichlorobenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,3-Dichlorobenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,4-Dichlorobenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Dichlorodifluoromethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,1-Dichloroethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,1-Dichloroethene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2-Dichloropropane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,3-Dichloropropane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
2,2-Dichloropropane	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,1-Dichloropropene	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Hexachlorobutadiene	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
2-Hexanone	ND	0.46		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Isopropylbenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
4-Isopropyltoluene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
4-Methyl-2-pentanone	ND	0.46		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Methylene chloride	ND	0.14		mg/Kg	1	8/6/2016 4:20:29 AM	26693
n-Butylbenzene	ND	0.14		mg/Kg	1	8/6/2016 4:20:29 AM	26693
n-Propylbenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
sec-Butylbenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Styrene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
tert-Butylbenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,1,1,2-Tetrachloroethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,1,2,2-Tetrachloroethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Tetrachloroethene (PCE)	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
trans-1,2-DCE	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
trans-1,3-Dichloropropene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2,3-Trichlorobenzene	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2,4-Trichlorobenzene	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,1,1-Trichloroethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,1,2-Trichloroethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Trichloroethene (TCE)	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Trichlorofluoromethane	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
1,2,3-Trichloropropane	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Vinyl chloride	ND	0.046		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Xylenes, Total	ND	0.092		mg/Kg	1	8/6/2016 4:20:29 AM	26693
Surr: Dibromofluoromethane	95.0	70-130		%Rec	1	8/6/2016 4:20:29 AM	26693
Surr: 1,2-Dichloroethane-d4	90.3	70-130		%Rec	1	8/6/2016 4:20:29 AM	26693
Surr: Toluene-d8	107	70-130		%Rec	1	8/6/2016 4:20:29 AM	26693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy
Project: WLU 6 Well Pad
Lab ID: 1607F33-001 **Matrix:** SOIL

Client Sample ID: 072816-1 (meters)
Collection Date: 7/28/2016 9:56:00 AM
Received Date: 7/29/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	8/6/2016 4:20:29 AM	26693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607F33**

09-Aug-16

Client: WPX Energy

Project: WLU 6 Well Pad

Sample ID **MB-26746**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **26746**	RunNo: **36161**							
Prep Date: **8/2/2016**	Analysis Date: **8/2/2016**	SeqNo: **1119923**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID **LCS-26746**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **26746**	RunNo: **36161**							
Prep Date: **8/2/2016**	Analysis Date: **8/2/2016**	SeqNo: **1119924**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.1	90	110			

Sample ID **MB-26746**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **26746**	RunNo: **36168**							
Prep Date: **8/2/2016**	Analysis Date: **8/2/2016**	SeqNo: **1120448**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID **LCS-26746**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **26746**	RunNo: **36168**							
Prep Date: **8/2/2016**	Analysis Date: **8/2/2016**	SeqNo: **1120449**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607F33**

09-Aug-16

Client: WPX Energy

Project: WLU 6 Well Pad

Sample ID **LCS-26715** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **26715** RunNo: **36150**
Prep Date: **8/1/2016** Analysis Date: **8/2/2016** SeqNo: **1120060** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	82.4	62.6	124			
Surr: DNOP	5.1		5.000		102	70	130			

Sample ID **LCS-26722** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **26722** RunNo: **36150**
Prep Date: **8/1/2016** Analysis Date: **8/2/2016** SeqNo: **1120062** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	70	130			

Sample ID **MB-26715** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **26715** RunNo: **36150**
Prep Date: **8/1/2016** Analysis Date: **8/2/2016** SeqNo: **1120063** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		110	70	130			

Sample ID **MB-26722** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **26722** RunNo: **36150**
Prep Date: **8/1/2016** Analysis Date: **8/2/2016** SeqNo: **1120065** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1		10.00		91.2	70	130			

Sample ID **1607F33-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **072816-1 (meters)** Batch ID: **26715** RunNo: **36151**
Prep Date: **8/1/2016** Analysis Date: **8/2/2016** SeqNo: **1120659** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.3	46.73	8.493	105	33.9	141			
Surr: DNOP	4.6		4.673		97.8	70	130			

Sample ID **1607F33-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **072816-1 (meters)** Batch ID: **26715** RunNo: **36151**
Prep Date: **8/1/2016** Analysis Date: **8/2/2016** SeqNo: **1120660** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.5	47.30	8.493	87.1	33.9	141	14.4	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607F33**

09-Aug-16

Client: WPX Energy

Project: WLU 6 Well Pad

Sample ID	**1607F33-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**072816-1 (meters)**	Batch ID:	**26715**		RunNo:	**36151**				
Prep Date:	**8/1/2016**	Analysis Date:	**8/2/2016**		SeqNo:	**1120660**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		4.730		88.4	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607F33**

09-Aug-16

Client: WPX Energy

Project: WLU 6 Well Pad

Sample ID **MB-26693**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **26693**	RunNo: **36141**
Prep Date: **7/29/2016**	Analysis Date: **8/1/2016**	SeqNo: **1119291** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		93.5	49.4	163			

Sample ID **LCS-26693**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **26693**	RunNo: **36141**
Prep Date: **7/29/2016**	Analysis Date: **8/1/2016**	SeqNo: **1119292** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	80	120			
Surr: BFB	1000		1000		105	49.4	163			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607F33**

09-Aug-16

Client: WPX Energy

Project: WLU 6 Well Pad

Sample ID **mb-26693**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **26693**	RunNo: **36260**
Prep Date: **7/29/2016**	Analysis Date: **8/6/2016**	SeqNo: **1124080** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
yl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607F33**

09-Aug-16

Client: WPX Energy

Project: WLU 6 Well Pad

Sample ID **mb-26693**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **26693**	RunNo: **36260**
Prep Date: **7/29/2016**	Analysis Date: **8/6/2016**	SeqNo: **1124080** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		97.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		86.6	70	130			
Surr: Toluene-d8	0.55		0.5000		111	70	130			
Surr: 4-Bromofluorobenzene	0.61		0.5000		122	70	130			

Sample ID **lcs-26693**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **26693**	RunNo: **36260**
Prep Date: **7/29/2016**	Analysis Date: **8/6/2016**	SeqNo: **1124081** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.5	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607F33**

09-Aug-16

Client: WPX Energy

Project: WLU 6 Well Pad

Sample ID **lcs-26693** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **LCSS** Batch ID: **26693** RunNo: **36260**

Prep Date: **7/29/2016** Analysis Date: **8/6/2016** SeqNo: **1124081** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	102	70	130			
Trichloroethene (TCE)	0.93	0.050	1.000	0	92.8	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.2	70	130			
Surr: Toluene-d8	0.54		0.5000		107	70	130			
Surr: 4-Bromofluorobenzene	0.59		0.5000		118	70	130			

Sample ID **1607f33-001ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **072816-1 (meters)** Batch ID: **26693** RunNo: **36260**

Prep Date: **7/29/2016** Analysis Date: **8/6/2016** SeqNo: **1124083** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	0.9970	0	87.2	49.2	155			
Toluene	0.95	0.050	0.9970	0	95.1	52	154			
Chlorobenzene	0.96	0.050	0.9970	0	95.9	53.2	150			
1,1-Dichloroethene	0.90	0.050	0.9970	0	90.1	34.2	163			
Trichloroethene (TCE)	0.89	0.050	0.9970	0	89.6	48.2	151			
Surr: Dibromofluoromethane	0.48		0.4985		95.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.44		0.4985		88.7	70	130			
Surr: Toluene-d8	0.53		0.4985		106	70	130			
Surr: 4-Bromofluorobenzene	0.59		0.4985		118	70	130			

Sample ID **1607f33-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **072816-1 (meters)** Batch ID: **26693** RunNo: **36260**

Prep Date: **7/29/2016** Analysis Date: **8/6/2016** SeqNo: **1124084** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.024	0.9434	0	88.9	49.2	155	3.59	20	
Toluene	0.91	0.047	0.9434	0	96.0	52	154	4.57	20	
Chlorobenzene	0.92	0.047	0.9434	0	97.3	53.2	150	4.06	20	
1,1-Dichloroethene	0.85	0.047	0.9434	0	89.9	34.2	163	5.76	20	
Trichloroethene (TCE)	0.88	0.047	0.9434	0	93.7	48.2	151	1.07	20	
Surr: Dibromofluoromethane	0.49		0.4717		104	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.44		0.4717		94.1	70	130	0	0	
Surr: Toluene-d8	0.51		0.4717		108	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.56		0.4717		119	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: WPX ENERGY | Work Order Number: 1607F33 | RcptNo 1

Received by/date: 07/29/16

Logged By: Lindsay Mangin 7/29/2016 7:30:00 AM

Completed By: Lindsay Mangin 7/29/2016 8:55:57 AM

Reviewed By: IO 7/29/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.2	Good	Yes			

Chain-of-Custody Record

Client:	WPX Energy
Mailing Address:	PO Box 640, Aztec, NM 87410
Phone #:	505-333-1880/505-386-9693
email or Fax#:	deborah.watson@wpxenergy.com
QA/QC Package:	X Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ NELAP ☐ Other ☐ EDD (Type)
Turn-Around Time:	X Standard ☐ Rush
Project Name:	WLU 6 Well Pad
Project #:	
Project Manager:	D. Watson
Sampler:	D Watson
On Ice:	☑ Yes ☐ No
Sample Temperature:	4.2-1.0=3.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1607F33	VOCs (8260)	TPH (8015) GRO/DRO/MRO	Chlorides	Air Bubbles (Y or N)
7/28/2016	9:56	soil	072816-1 (meters)	1-8 oz/1-4oz	cold	-001	X	X	X	

Date	Time	Relinquished by:	Received by:	Date	Time
7/28/16	1540	Deborah Watson			
7/28/16	1920			07/29/16	0720

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 30, 2016

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: WPX WLU 707H Well Pad OrderNo.: 1608E24

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 16 sample(s) on 8/25/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1608E24**
Date Reported: **8/30/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-1
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:18:00 AM
Lab ID: 1608E24-001
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	8/25/2016 10:41:58 AM	R36762
Surr: BFB	101	70-130		%Rec	1	8/25/2016 10:41:58 AM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/25/2016 12:42:56 PM	27162
Motor Oil Range Organics (MRO)	58	50		mg/Kg	1	8/25/2016 12:42:56 PM	27162
Surr: DNOP	93.0	70-130		%Rec	1	8/25/2016 12:42:56 PM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.018		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Toluene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Ethylbenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2,4-Trimethylbenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,3,5-Trimethylbenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2-Dichloroethane (EDC)	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2-Dibromoethane (EDB)	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Naphthalene	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1-Methylnaphthalene	ND	0.15		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
2-Methylnaphthalene	ND	0.15		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Acetone	ND	0.55		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Bromobenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Bromodichloromethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Bromoform	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Bromomethane	ND	0.11		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
2-Butanone	ND	0.37		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Carbon disulfide	ND	0.37		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Carbon tetrachloride	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Chlorobenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Chloroethane	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Chloroform	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Chloromethane	ND	0.11		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
2-Chlorotoluene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
4-Chlorotoluene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
cis-1,2-DCE	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
cis-1,3-Dichloropropene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Dibromochloromethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Dibromomethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2-Dichlorobenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-1
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:18:00 AM
Lab ID: 1608E24-001
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,4-Dichlorobenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Dichlorodifluoromethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,1-Dichloroethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,1-Dichloroethene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2-Dichloropropane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,3-Dichloropropane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
2,2-Dichloropropane	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,1-Dichloropropene	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Hexachlorobutadiene	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
2-Hexanone	ND	0.37		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Isopropylbenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
4-Isopropyltoluene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
4-Methyl-2-pentanone	ND	0.37		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Methylene chloride	ND	0.11		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
n-Butylbenzene	ND	0.11		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
n-Propylbenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
sec-Butylbenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Styrene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
tert-Butylbenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Tetrachloroethene (PCE)	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
trans-1,2-DCE	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
trans-1,3-Dichloropropene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2,3-Trichlorobenzene	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2,4-Trichlorobenzene	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,1,1-Trichloroethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,1,2-Trichloroethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Trichloroethene (TCE)	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Trichlorofluoromethane	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
1,2,3-Trichloropropane	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Vinyl chloride	ND	0.037		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Xylenes, Total	ND	0.073		mg/Kg	1	8/25/2016 10:41:58 AM	MKS367
Surr: Dibromofluoromethane	106	70-130		%Rec	1	8/25/2016 10:41:58 AM	MKS367
Surr: 1,2-Dichloroethane-d4	95.6	70-130		%Rec	1	8/25/2016 10:41:58 AM	MKS367
Surr: Toluene-d8	94.6	70-130		%Rec	1	8/25/2016 10:41:58 AM	MKS367
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/25/2016 10:41:58 AM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-2
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:38:00 AM
Lab ID: 1608E24-002
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	8/25/2016 11:10:27 AM	R36762
Surr: BFB	97.7	70-130		%Rec	1	8/25/2016 11:10:27 AM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	14	9.8		mg/Kg	1	8/25/2016 10:06:57 AM	27162
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2016 10:06:57 AM	27162
Surr: DNOP	93.2	70-130		%Rec	1	8/25/2016 10:06:57 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.018		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Toluene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Ethylbenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2,4-Trimethylbenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,3,5-Trimethylbenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2-Dichloroethane (EDC)	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2-Dibromoethane (EDB)	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Naphthalene	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1-Methylnaphthalene	ND	0.14		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
2-Methylnaphthalene	ND	0.14		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Acetone	ND	0.53		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Bromobenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Bromodichloromethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Bromoform	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Bromomethane	ND	0.11		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
2-Butanone	ND	0.35		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Carbon disulfide	ND	0.35		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Carbon tetrachloride	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Chlorobenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Chloroethane	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Chloroform	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Chloromethane	ND	0.11		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
2-Chlorotoluene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
4-Chlorotoluene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
cis-1,2-DCE	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
cis-1,3-Dichloropropene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Dibromochloromethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Dibromomethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2-Dichlorobenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-2
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:38:00 AM
Lab ID: 1608E24-002
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,4-Dichlorobenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Dichlorodifluoromethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,1-Dichloroethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,1-Dichloroethene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2-Dichloropropane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,3-Dichloropropane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
2,2-Dichloropropane	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,1-Dichloropropene	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Hexachlorobutadiene	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
2-Hexanone	ND	0.35		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Isopropylbenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
4-Isopropyltoluene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
4-Methyl-2-pentanone	ND	0.35		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Methylene chloride	ND	0.11		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
n-Butylbenzene	ND	0.11		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
n-Propylbenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
sec-Butylbenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Styrene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
tert-Butylbenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Tetrachloroethene (PCE)	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
trans-1,2-DCE	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
trans-1,3-Dichloropropene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2,3-Trichlorobenzene	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2,4-Trichlorobenzene	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,1,1-Trichloroethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,1,2-Trichloroethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Trichloroethene (TCE)	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Trichlorofluoromethane	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
1,2,3-Trichloropropane	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Vinyl chloride	ND	0.035		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Xylenes, Total	ND	0.071		mg/Kg	1	8/25/2016 11:10:27 AM	MKS367
Surr: Dibromofluoromethane	113	70-130		%Rec	1	8/25/2016 11:10:27 AM	MKS367
Surr: 1,2-Dichloroethane-d4	99.5	70-130		%Rec	1	8/25/2016 11:10:27 AM	MKS367
Surr: Toluene-d8	96.6	70-130		%Rec	1	8/25/2016 11:10:27 AM	MKS367
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	8/25/2016 11:10:27 AM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-3
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:48:00 AM
Lab ID: 1608E24-003
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	8/25/2016 11:39:00 AM	R36762
Surr: BFB	96.2	70-130		%Rec	1	8/25/2016 11:39:00 AM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/25/2016 10:28:50 AM	27162
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2016 10:28:50 AM	27162
Surr: DNOP	97.0	70-130		%Rec	1	8/25/2016 10:28:50 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.019		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Toluene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Ethylbenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2,4-Trimethylbenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,3,5-Trimethylbenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2-Dichloroethane (EDC)	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2-Dibromoethane (EDB)	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Naphthalene	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1-Methylnaphthalene	ND	0.15		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
2-Methylnaphthalene	ND	0.15		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Acetone	ND	0.57		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Bromobenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Bromodichloromethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Bromoform	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Bromomethane	ND	0.11		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
2-Butanone	ND	0.38		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Carbon disulfide	ND	0.38		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Carbon tetrachloride	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Chlorobenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Chloroethane	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Chloroform	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Chloromethane	ND	0.11		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
2-Chlorotoluene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
4-Chlorotoluene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
cis-1,2-DCE	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
cis-1,3-Dichloropropene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Dibromochloromethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Dibromomethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2-Dichlorobenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-3
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:48:00 AM
Lab ID: 1608E24-003
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,4-Dichlorobenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Dichlorodifluoromethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,1-Dichloroethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,1-Dichloroethene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2-Dichloropropane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,3-Dichloropropane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
2,2-Dichloropropane	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,1-Dichloropropene	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Hexachlorobutadiene	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
2-Hexanone	ND	0.38		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Isopropylbenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
4-Isopropyltoluene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
4-Methyl-2-pentanone	ND	0.38		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Methylene chloride	ND	0.11		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
n-Butylbenzene	ND	0.11		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
n-Propylbenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
sec-Butylbenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Styrene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
tert-Butylbenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Tetrachloroethene (PCE)	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
trans-1,2-DCE	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
trans-1,3-Dichloropropene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2,3-Trichlorobenzene	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2,4-Trichlorobenzene	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,1,1-Trichloroethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,1,2-Trichloroethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Trichloroethene (TCE)	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Trichlorofluoromethane	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
1,2,3-Trichloropropane	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Vinyl chloride	ND	0.038		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Xylenes, Total	ND	0.076		mg/Kg	1	8/25/2016 11:39:00 AM	MKS367
Surr: Dibromofluoromethane	111	70-130		%Rec	1	8/25/2016 11:39:00 AM	MKS367
Surr: 1,2-Dichloroethane-d4	93.1	70-130		%Rec	1	8/25/2016 11:39:00 AM	MKS367
Surr: Toluene-d8	93.3	70-130		%Rec	1	8/25/2016 11:39:00 AM	MKS367
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	8/25/2016 11:39:00 AM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-4
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:53:00 AM
Lab ID: 1608E24-004
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	92	30		mg/Kg	20	8/26/2016 10:34:15 AM	27203
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	8/25/2016 12:07:30 PM	R36762
Surr: BFB	99.2	70-130		%Rec	1	8/25/2016 12:07:30 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/25/2016 11:59:08 AM	27162
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/25/2016 11:59:08 AM	27162
Surr: DNOP	88.6	70-130		%Rec	1	8/25/2016 11:59:08 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.020		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Toluene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Ethylbenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Naphthalene	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
2-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Acetone	ND	0.61		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Bromobenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Bromodichloromethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Bromoform	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Bromomethane	ND	0.12		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
2-Butanone	ND	0.41		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Carbon disulfide	ND	0.41		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Carbon tetrachloride	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Chlorobenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Chloroethane	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Chloroform	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Chloromethane	ND	0.12		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
2-Chlorotoluene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
4-Chlorotoluene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
cis-1,2-DCE	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
cis-1,3-Dichloropropene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Dibromochloromethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-4
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:53:00 AM
Lab ID: 1608E24-004
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Dibromomethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2-Dichlorobenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,3-Dichlorobenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,4-Dichlorobenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Dichlorodifluoromethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,1-Dichloroethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,1-Dichloroethene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2-Dichloropropane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,3-Dichloropropane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
2,2-Dichloropropane	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,1-Dichloropropene	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Hexachlorobutadiene	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
2-Hexanone	ND	0.41		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Isopropylbenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
4-Isopropyltoluene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
4-Methyl-2-pentanone	ND	0.41		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Methylene chloride	ND	0.12		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
n-Butylbenzene	ND	0.12		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
n-Propylbenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
sec-Butylbenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Styrene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
tert-Butylbenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Tetrachloroethene (PCE)	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
trans-1,2-DCE	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
trans-1,3-Dichloropropene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,1,1-Trichloroethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,1,2-Trichloroethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Trichloroethene (TCE)	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Trichlorofluoromethane	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
1,2,3-Trichloropropane	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Vinyl chloride	ND	0.041		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Xylenes, Total	ND	0.081		mg/Kg	1	8/25/2016 12:07:30 PM	MKS367
Surr: Dibromofluoromethane	108	70-130		%Rec	1	8/25/2016 12:07:30 PM	MKS367
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%Rec	1	8/25/2016 12:07:30 PM	MKS367
Surr: Toluene-d8	95.7	70-130		%Rec	1	8/25/2016 12:07:30 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-4
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:53:00 AM
Lab ID: 1608E24-004
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	8/25/2016 12:07:30 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-5
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:59:00 AM
Lab ID: 1608E24-005
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	8/25/2016 12:36:04 PM	R36762
Surr: BFB	101	70-130		%Rec	1	8/25/2016 12:36:04 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/25/2016 12:20:56 PM	27162
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/25/2016 12:20:56 PM	27162
Surr: DNOP	87.2	70-130		%Rec	1	8/25/2016 12:20:56 PM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.022		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Toluene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Ethylbenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Naphthalene	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1-Methylnaphthalene	ND	0.18		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
2-Methylnaphthalene	ND	0.18		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Acetone	ND	0.66		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Bromobenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Bromodichloromethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Bromoform	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Bromomethane	ND	0.13		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
2-Butanone	ND	0.44		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Carbon disulfide	ND	0.44		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Carbon tetrachloride	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Chlorobenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Chloroethane	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Chloroform	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Chloromethane	ND	0.13		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
2-Chlorotoluene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
4-Chlorotoluene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
cis-1,2-DCE	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
cis-1,3-Dichloropropene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Dibromochloromethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Dibromomethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2-Dichlorobenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-5
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:59:00 AM
Lab ID: 1608E24-005
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,4-Dichlorobenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Dichlorodifluoromethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,1-Dichloroethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,1-Dichloroethene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2-Dichloropropane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,3-Dichloropropane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
2,2-Dichloropropane	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,1-Dichloropropene	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Hexachlorobutadiene	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
2-Hexanone	ND	0.44		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Isopropylbenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
4-Isopropyltoluene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
4-Methyl-2-pentanone	ND	0.44		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Methylene chloride	ND	0.13		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
n-Butylbenzene	ND	0.13		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
n-Propylbenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
sec-Butylbenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Styrene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
tert-Butylbenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Tetrachloroethene (PCE)	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
trans-1,2-DCE	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
trans-1,3-Dichloropropene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,1,1-Trichloroethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,1,2-Trichloroethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Trichloroethene (TCE)	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Trichlorofluoromethane	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
1,2,3-Trichloropropane	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Vinyl chloride	ND	0.044		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Xylenes, Total	ND	0.089		mg/Kg	1	8/25/2016 12:36:04 PM	MKS367
Surr: Dibromofluoromethane	109	70-130		%Rec	1	8/25/2016 12:36:04 PM	MKS367
Surr: 1,2-Dichloroethane-d4	93.7	70-130		%Rec	1	8/25/2016 12:36:04 PM	MKS367
Surr: Toluene-d8	94.2	70-130		%Rec	1	8/25/2016 12:36:04 PM	MKS367
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	8/25/2016 12:36:04 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-6
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:51:00 AM
Lab ID: 1608E24-006
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	8/25/2016 1:04:34 PM	R36762
Surr: BFB	97.0	70-130		%Rec	1	8/25/2016 1:04:34 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/25/2016 12:42:25 PM	27162
Motor Oil Range Organics (MRO)	63	49		mg/Kg	1	8/25/2016 12:42:25 PM	27162
Surr: DNOP	82.8	70-130		%Rec	1	8/25/2016 12:42:25 PM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.021		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Toluene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Ethylbenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Naphthalene	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1-Methylnaphthalene	ND	0.17		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
2-Methylnaphthalene	ND	0.17		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Acetone	ND	0.64		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Bromobenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Bromodichloromethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Bromoform	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Bromomethane	ND	0.13		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
2-Butanone	ND	0.43		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Carbon disulfide	ND	0.43		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Carbon tetrachloride	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Chlorobenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Chloroethane	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Chloroform	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Chloromethane	ND	0.13		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
2-Chlorotoluene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
4-Chlorotoluene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
cis-1,2-DCE	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
cis-1,3-Dichloropropene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Dibromochloromethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Dibromomethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2-Dichlorobenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-6
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:51:00 AM
Lab ID: 1608E24-006
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,4-Dichlorobenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Dichlorodifluoromethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,1-Dichloroethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,1-Dichloroethene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2-Dichloropropane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,3-Dichloropropane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
2,2-Dichloropropane	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,1-Dichloropropene	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Hexachlorobutadiene	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
2-Hexanone	ND	0.43		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Isopropylbenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
4-Isopropyltoluene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
4-Methyl-2-pentanone	ND	0.43		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Methylene chloride	ND	0.13		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
n-Butylbenzene	ND	0.13		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
n-Propylbenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
sec-Butylbenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Styrene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
tert-Butylbenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Tetrachloroethene (PCE)	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
trans-1,2-DCE	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
trans-1,3-Dichloropropene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,1,1-Trichloroethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,1,2-Trichloroethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Trichloroethene (TCE)	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Trichlorofluoromethane	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
1,2,3-Trichloropropane	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Vinyl chloride	ND	0.043		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Xylenes, Total	ND	0.085		mg/Kg	1	8/25/2016 1:04:34 PM	MKS367
Surr: Dibromofluoromethane	110	70-130		%Rec	1	8/25/2016 1:04:34 PM	MKS367
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%Rec	1	8/25/2016 1:04:34 PM	MKS367
Surr: Toluene-d8	91.4	70-130		%Rec	1	8/25/2016 1:04:34 PM	MKS367
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	8/25/2016 1:04:34 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-7
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:47:00 AM
Lab ID: 1608E24-007
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	8/25/2016 1:33:07 PM	R36762
Surr: BFB	96.8	70-130		%Rec	1	8/25/2016 1:33:07 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/25/2016 10:08:45 AM	27162
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2016 10:08:45 AM	27162
Surr: DNOP	82.7	70-130		%Rec	1	8/25/2016 10:08:45 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.018		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Toluene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Ethylbenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Naphthalene	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1-Methylnaphthalene	ND	0.14		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
2-Methylnaphthalene	ND	0.14		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Acetone	ND	0.53		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Bromobenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Bromodichloromethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Bromoform	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Bromomethane	ND	0.11		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
2-Butanone	ND	0.36		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Carbon disulfide	ND	0.36		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Carbon tetrachloride	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Chlorobenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Chloroethane	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Chloroform	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Chloromethane	ND	0.11		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
2-Chlorotoluene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
4-Chlorotoluene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
cis-1,2-DCE	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
cis-1,3-Dichloropropene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Dibromochloromethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Dibromomethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2-Dichlorobenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-7
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:47:00 AM
Lab ID: 1608E24-007
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,4-Dichlorobenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Dichlorodifluoromethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,1-Dichloroethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,1-Dichloroethene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2-Dichloropropane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,3-Dichloropropane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
2,2-Dichloropropane	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,1-Dichloropropene	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Hexachlorobutadiene	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
2-Hexanone	ND	0.36		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Isopropylbenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
4-Isopropyltoluene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
4-Methyl-2-pentanone	ND	0.36		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Methylene chloride	ND	0.11		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
n-Butylbenzene	ND	0.11		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
n-Propylbenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
sec-Butylbenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Styrene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
tert-Butylbenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Tetrachloroethene (PCE)	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
trans-1,2-DCE	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
trans-1,3-Dichloropropene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,1,1-Trichloroethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,1,2-Trichloroethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Trichloroethene (TCE)	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Trichlorofluoromethane	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
1,2,3-Trichloropropane	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Vinyl chloride	ND	0.036		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Xylenes, Total	ND	0.071		mg/Kg	1	8/25/2016 1:33:07 PM	MKS367
Surr: Dibromofluoromethane	110	70-130		%Rec	1	8/25/2016 1:33:07 PM	MKS367
Surr: 1,2-Dichloroethane-d4	91.3	70-130		%Rec	1	8/25/2016 1:33:07 PM	MKS367
Surr: Toluene-d8	94.6	70-130		%Rec	1	8/25/2016 1:33:07 PM	MKS367
Surr: 4-Bromofluorobenzene	97.6	70-130		%Rec	1	8/25/2016 1:33:07 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-8
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:39:00 AM
Lab ID: 1608E24-008
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	8/25/2016 2:01:44 PM	R36762
Surr: BFB	96.8	70-130		%Rec	1	8/25/2016 2:01:44 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/25/2016 10:30:45 AM	27162
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2016 10:30:45 AM	27162
Surr: DNOP	85.0	70-130		%Rec	1	8/25/2016 10:30:45 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.020		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Toluene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Ethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Naphthalene	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
2-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Acetone	ND	0.59		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Bromobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Bromodichloromethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Bromoform	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Bromomethane	ND	0.12		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
2-Butanone	ND	0.40		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Carbon disulfide	ND	0.40		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Carbon tetrachloride	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Chlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Chloroethane	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Chloroform	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Chloromethane	ND	0.12		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
2-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
4-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
cis-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
cis-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Dibromochloromethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Dibromomethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-8
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:39:00 AM
Lab ID: 1608E24-008
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,4-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Dichlorodifluoromethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,1-Dichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,1-Dichloroethene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,3-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
2,2-Dichloropropane	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,1-Dichloropropene	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Hexachlorobutadiene	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
2-Hexanone	ND	0.40		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Isopropylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
4-Isopropyltoluene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
4-Methyl-2-pentanone	ND	0.40		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Methylene chloride	ND	0.12		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
n-Butylbenzene	ND	0.12		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
n-Propylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
sec-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Styrene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
tert-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Tetrachloroethene (PCE)	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
trans-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
trans-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,1,1-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,1,2-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Trichloroethene (TCE)	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Trichlorofluoromethane	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
1,2,3-Trichloropropane	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Vinyl chloride	ND	0.040		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Xylenes, Total	ND	0.079		mg/Kg	1	8/25/2016 2:01:44 PM	MKS367
Surr: Dibromofluoromethane	105	70-130		%Rec	1	8/25/2016 2:01:44 PM	MKS367
Surr: 1,2-Dichloroethane-d4	91.5	70-130		%Rec	1	8/25/2016 2:01:44 PM	MKS367
Surr: Toluene-d8	97.8	70-130		%Rec	1	8/25/2016 2:01:44 PM	MKS367
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	8/25/2016 2:01:44 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-9
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:33:00 AM
Lab ID: 1608E24-009
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	8/25/2016 2:30:16 PM	R36762
Surr: BFB	99.8	70-130		%Rec	1	8/25/2016 2:30:16 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/25/2016 11:58:27 AM	27162
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/25/2016 11:58:27 AM	27162
Surr: DNOP	84.5	70-130		%Rec	1	8/25/2016 11:58:27 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.020		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Toluene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Ethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Naphthalene	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
2-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Acetone	ND	0.60		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Bromobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Bromodichloromethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Bromoform	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Bromomethane	ND	0.12		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
2-Butanone	ND	0.40		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Carbon disulfide	ND	0.40		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Carbon tetrachloride	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Chlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Chloroethane	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Chloroform	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Chloromethane	ND	0.12		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
2-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
4-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
cis-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
cis-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Dibromochloromethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Dibromomethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-9
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:33:00 AM
Lab ID: 1608E24-009
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,4-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Dichlorodifluoromethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,1-Dichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,1-Dichloroethene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,3-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
2,2-Dichloropropane	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,1-Dichloropropene	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Hexachlorobutadiene	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
2-Hexanone	ND	0.40		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Isopropylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
4-Isopropyltoluene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
4-Methyl-2-pentanone	ND	0.40		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Methylene chloride	ND	0.12		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
n-Butylbenzene	ND	0.12		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
n-Propylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
sec-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Styrene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
tert-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Tetrachloroethene (PCE)	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
trans-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
trans-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,1,1-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,1,2-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Trichloroethene (TCE)	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Trichlorofluoromethane	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
1,2,3-Trichloropropane	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Vinyl chloride	ND	0.040		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Xylenes, Total	ND	0.080		mg/Kg	1	8/25/2016 2:30:16 PM	MKS367
Surr: Dibromofluoromethane	102	70-130		%Rec	1	8/25/2016 2:30:16 PM	MKS367
Surr: 1,2-Dichloroethane-d4	88.2	70-130		%Rec	1	8/25/2016 2:30:16 PM	MKS367
Surr: Toluene-d8	96.0	70-130		%Rec	1	8/25/2016 2:30:16 PM	MKS367
Surr: 4-Bromofluorobenzene	96.5	70-130		%Rec	1	8/25/2016 2:30:16 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-10
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:12:00 AM
Lab ID: 1608E24-010
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/25/2016 2:58:50 PM	R36762
Surr: BFB	96.5	70-130		%Rec	1	8/25/2016 2:58:50 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/25/2016 12:20:21 PM	27162
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2016 12:20:21 PM	27162
Surr: DNOP	85.3	70-130		%Rec	1	8/25/2016 12:20:21 PM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.020		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Toluene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Ethylbenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Naphthalene	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
2-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Acetone	ND	0.59		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Bromobenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Bromodichloromethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Bromoform	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Bromomethane	ND	0.12		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
2-Butanone	ND	0.39		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Carbon disulfide	ND	0.39		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Carbon tetrachloride	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Chlorobenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Chloroethane	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Chloroform	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Chloromethane	ND	0.12		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
2-Chlorotoluene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
4-Chlorotoluene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
cis-1,2-DCE	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
cis-1,3-Dichloropropene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Dibromochloromethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Dibromomethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2-Dichlorobenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-10
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:12:00 AM
Lab ID: 1608E24-010
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,4-Dichlorobenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Dichlorodifluoromethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,1-Dichloroethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,1-Dichloroethene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2-Dichloropropane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,3-Dichloropropane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
2,2-Dichloropropane	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,1-Dichloropropene	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Hexachlorobutadiene	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
2-Hexanone	ND	0.39		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Isopropylbenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
4-Isopropyltoluene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
4-Methyl-2-pentanone	ND	0.39		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Methylene chloride	ND	0.12		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
n-Butylbenzene	ND	0.12		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
n-Propylbenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
sec-Butylbenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Styrene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
tert-Butylbenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Tetrachloroethene (PCE)	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
trans-1,2-DCE	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
trans-1,3-Dichloropropene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,1,1-Trichloroethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,1,2-Trichloroethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Trichloroethene (TCE)	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Trichlorofluoromethane	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
1,2,3-Trichloropropane	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Vinyl chloride	ND	0.039		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Xylenes, Total	ND	0.079		mg/Kg	1	8/25/2016 2:58:50 PM	MKS367
Surr: Dibromofluoromethane	101	70-130		%Rec	1	8/25/2016 2:58:50 PM	MKS367
Surr: 1,2-Dichloroethane-d4	87.6	70-130		%Rec	1	8/25/2016 2:58:50 PM	MKS367
Surr: Toluene-d8	93.3	70-130		%Rec	1	8/25/2016 2:58:50 PM	MKS367
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	8/25/2016 2:58:50 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-11
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:27:00 AM
Lab ID: 1608E24-011
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	8/25/2016 3:27:20 PM	R36762
Surr: BFB	97.3	70-130		%Rec	1	8/25/2016 3:27:20 PM	R36762
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	40	10		mg/Kg	1	8/25/2016 11:11:54 AM	27162
Motor Oil Range Organics (MRO)	70	50		mg/Kg	1	8/25/2016 11:11:54 AM	27162
Surr: DNOP	94.0	70-130		%Rec	1	8/25/2016 11:11:54 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.021		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Toluene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Ethylbenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Methyl tert-butyl ether (MTBE)	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2,4-Trimethylbenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,3,5-Trimethylbenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2-Dichloroethane (EDC)	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2-Dibromoethane (EDB)	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Naphthalene	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1-Methylnaphthalene	ND	0.17		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
2-Methylnaphthalene	ND	0.17		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Acetone	ND	0.63		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Bromobenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Bromodichloromethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Bromoform	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Bromomethane	ND	0.13		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
2-Butanone	ND	0.42		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Carbon disulfide	ND	0.42		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Carbon tetrachloride	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Chlorobenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Chloroethane	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Chloroform	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Chloromethane	ND	0.13		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
2-Chlorotoluene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
4-Chlorotoluene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
cis-1,2-DCE	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
cis-1,3-Dichloropropene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2-Dibromo-3-chloropropane	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Dibromochloromethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Dibromomethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2-Dichlorobenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-11
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:27:00 AM
Lab ID: 1608E24-011
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,4-Dichlorobenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Dichlorodifluoromethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,1-Dichloroethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,1-Dichloroethene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2-Dichloropropane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,3-Dichloropropane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
2,2-Dichloropropane	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,1-Dichloropropene	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Hexachlorobutadiene	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
2-Hexanone	ND	0.42		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Isopropylbenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
4-Isopropyltoluene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
4-Methyl-2-pentanone	ND	0.42		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Methylene chloride	ND	0.13		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
n-Butylbenzene	ND	0.13		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
n-Propylbenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
sec-Butylbenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Styrene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
tert-Butylbenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,1,1,2-Tetrachloroethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,1,2,2-Tetrachloroethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Tetrachloroethene (PCE)	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
trans-1,2-DCE	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
trans-1,3-Dichloropropene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2,3-Trichlorobenzene	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2,4-Trichlorobenzene	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,1,1-Trichloroethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,1,2-Trichloroethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Trichloroethene (TCE)	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Trichlorofluoromethane	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
1,2,3-Trichloropropane	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Vinyl chloride	ND	0.042		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Xylenes, Total	ND	0.084		mg/Kg	1	8/25/2016 3:27:20 PM	MKS367
Surr: Dibromofluoromethane	107	70-130		%Rec	1	8/25/2016 3:27:20 PM	MKS367
Surr: 1,2-Dichloroethane-d4	93.1	70-130		%Rec	1	8/25/2016 3:27:20 PM	MKS367
Surr: Toluene-d8	94.9	70-130		%Rec	1	8/25/2016 3:27:20 PM	MKS367
Surr: 4-Bromofluorobenzene	96.9	70-130		%Rec	1	8/25/2016 3:27:20 PM	MKS367

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-12
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:18:00 AM
Lab ID: 1608E24-012
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	8/25/2016 2:55:01 PM	A36763
Surr: BFB	99.6	70-130		%Rec	1	8/25/2016 2:55:01 PM	A36763
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	14	10		mg/Kg	1	8/25/2016 10:16:51 AM	27162
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2016 10:16:51 AM	27162
Surr: DNOP	92.7	70-130		%Rec	1	8/25/2016 10:16:51 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	0.020		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Toluene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Ethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Methyl tert-butyl ether (MTBE)	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2,4-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,3,5-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2-Dichloroethane (EDC)	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2-Dibromoethane (EDB)	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Naphthalene	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
2-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Acetone	ND	0.60		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Bromobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Bromodichloromethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Bromoform	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Bromomethane	ND	0.12		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
2-Butanone	ND	0.40		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Carbon disulfide	ND	0.40		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Carbon tetrachloride	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Chlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Chloroethane	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Chloroform	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Chloromethane	ND	0.12		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
2-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
4-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
cis-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
cis-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2-Dibromo-3-chloropropane	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Dibromochloromethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Dibromomethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-12
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:18:00 AM
Lab ID: 1608E24-012
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
1,3-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,4-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Dichlorodifluoromethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,1-Dichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,1-Dichloroethene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,3-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
2,2-Dichloropropane	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,1-Dichloropropene	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Hexachlorobutadiene	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
2-Hexanone	ND	0.40		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Isopropylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
4-Isopropyltoluene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
4-Methyl-2-pentanone	ND	0.40		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Methylene chloride	ND	0.12		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
n-Butylbenzene	ND	0.12		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
n-Propylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
sec-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Styrene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
tert-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,1,1,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,1,2,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Tetrachloroethene (PCE)	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
trans-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
trans-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2,3-Trichlorobenzene	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2,4-Trichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,1,1-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,1,2-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Trichloroethene (TCE)	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Trichlorofluoromethane	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
1,2,3-Trichloropropane	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Vinyl chloride	ND	0.040		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Xylenes, Total	ND	0.080		mg/Kg	1	8/25/2016 2:55:01 PM	R36763
Surr: Dibromofluoromethane	104	70-130		%Rec	1	8/25/2016 2:55:01 PM	R36763
Surr: 1,2-Dichloroethane-d4	98.9	70-130		%Rec	1	8/25/2016 2:55:01 PM	R36763
Surr: Toluene-d8	96.1	70-130		%Rec	1	8/25/2016 2:55:01 PM	R36763
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	8/25/2016 2:55:01 PM	R36763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-13
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:05:00 AM
Lab ID: 1608E24-013
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	8/25/2016 3:23:46 PM	A36763
Surr: BFB	107	70-130		%Rec	1	8/25/2016 3:23:46 PM	A36763
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/25/2016 10:44:29 AM	27162
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/25/2016 10:44:29 AM	27162
Surr: DNOP	92.2	70-130		%Rec	1	8/25/2016 10:44:29 AM	27162
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	0.020		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Toluene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Ethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Methyl tert-butyl ether (MTBE)	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2,4-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,3,5-Trimethylbenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2-Dichloroethane (EDC)	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2-Dibromoethane (EDB)	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Naphthalene	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
2-Methylnaphthalene	ND	0.16		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Acetone	ND	0.60		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Bromobenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Bromodichloromethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Bromoform	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Bromomethane	ND	0.12		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
2-Butanone	ND	0.40		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Carbon disulfide	ND	0.40		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Carbon tetrachloride	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Chlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Chloroethane	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Chloroform	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Chloromethane	ND	0.12		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
2-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
4-Chlorotoluene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
cis-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
cis-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2-Dibromo-3-chloropropane	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Dibromochloromethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Dibromomethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: S-13
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:05:00 AM
Lab ID: 1608E24-013
Matrix: MEOH (SOIL)
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
1,3-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,4-Dichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Dichlorodifluoromethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,1-Dichloroethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,1-Dichloroethene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,3-Dichloropropane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
2,2-Dichloropropane	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,1-Dichloropropene	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Hexachlorobutadiene	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
2-Hexanone	ND	0.40		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Isopropylbenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
4-Isopropyltoluene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
4-Methyl-2-pentanone	ND	0.40		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Methylene chloride	ND	0.12		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
n-Butylbenzene	ND	0.12		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
n-Propylbenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
sec-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Styrene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
tert-Butylbenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,1,1,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,1,2,2-Tetrachloroethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Tetrachloroethene (PCE)	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
trans-1,2-DCE	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
trans-1,3-Dichloropropene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2,3-Trichlorobenzene	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2,4-Trichlorobenzene	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,1,1-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,1,2-Trichloroethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Trichloroethene (TCE)	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Trichlorofluoromethane	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
1,2,3-Trichloropropane	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Vinyl chloride	ND	0.040		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Xylenes, Total	ND	0.080		mg/Kg	1	8/25/2016 3:23:46 PM	R36763
Surr: Dibromofluoromethane	106	70-130		%Rec	1	8/25/2016 3:23:46 PM	R36763
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%Rec	1	8/25/2016 3:23:46 PM	R36763
Surr: Toluene-d8	98.2	70-130		%Rec	1	8/25/2016 3:23:46 PM	R36763
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	8/25/2016 3:23:46 PM	R36763

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Metals-1
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:15:00 AM
Lab ID: 1608E24-014
Matrix: SOIL
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	8/26/2016 9:56:58 AM	27172
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	ND	12		mg/Kg	5	8/29/2016 10:30:36 AM	27170
Barium	180	0.50		mg/Kg	5	8/29/2016 10:30:36 AM	27170
Cadmium	ND	0.50		mg/Kg	5	8/29/2016 10:30:36 AM	27170
Chromium	7.1	1.5		mg/Kg	5	8/29/2016 10:30:36 AM	27170
Lead	6.6	1.2		mg/Kg	5	8/29/2016 10:30:36 AM	27170
Selenium	ND	12		mg/Kg	5	8/29/2016 10:30:36 AM	27170
Silver	ND	1.2		mg/Kg	5	8/29/2016 10:30:36 AM	27170

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Metals-2
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 10:54:00 AM
Lab ID: 1608E24-015
Matrix: SOIL
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	8/26/2016 10:02:23 AM	27172
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	ND	5.0		mg/Kg	2	8/26/2016 9:31:03 AM	27170
Barium	210	0.20		mg/Kg	2	8/26/2016 9:31:03 AM	27170
Cadmium	ND	0.20		mg/Kg	2	8/26/2016 9:31:03 AM	27170
Chromium	5.4	0.60		mg/Kg	2	8/26/2016 9:31:03 AM	27170
Lead	4.9	0.50		mg/Kg	2	8/26/2016 9:31:03 AM	27170
Selenium	ND	5.0		mg/Kg	2	8/26/2016 9:31:03 AM	27170
Silver	ND	0.50		mg/Kg	2	8/26/2016 9:31:03 AM	27170

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Metals-3
Project: WPX WLU 707H Well Pad
Collection Date: 8/24/2016 11:34:00 AM
Lab ID: 1608E24-016
Matrix: SOIL
Received Date: 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.032		mg/Kg	1	8/26/2016 10:04:10 AM	27172
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	ND	5.0		mg/Kg	2	8/26/2016 9:34:02 AM	27170
Barium	360	0.20		mg/Kg	2	8/26/2016 9:34:02 AM	27170
Cadmium	ND	0.20		mg/Kg	2	8/26/2016 9:34:02 AM	27170
Chromium	3.9	0.60		mg/Kg	2	8/26/2016 9:34:02 AM	27170
Lead	4.0	0.50		mg/Kg	2	8/26/2016 9:34:02 AM	27170
Selenium	ND	5.0		mg/Kg	2	8/26/2016 9:34:02 AM	27170
Silver	ND	0.50		mg/Kg	2	8/26/2016 9:34:02 AM	27170

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID	**MB-27203**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**27203**		RunNo:	**36827**					
Prep Date:	**8/26/2016**	Analysis Date:	**8/26/2016**		SeqNo:	**1141597**	Units:	**mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								

Sample ID	**LCS-27203**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**27203**		RunNo:	**36827**					
Prep Date:	**8/26/2016**	Analysis Date:	**8/26/2016**		SeqNo:	**1141598**	Units:	**mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **LCS-27162** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **27162** RunNo: **36745**

Prep Date: **8/25/2016** Analysis Date: **8/25/2016** SeqNo: **1138933** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.7	62.6	124			
Surr: DNOP	4.2		5.000		83.5	70	130			

Sample ID **MB-27162** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **27162** RunNo: **36745**

Prep Date: **8/25/2016** Analysis Date: **8/25/2016** SeqNo: **1138934** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		89.3	70	130			

Sample ID **1608E24-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-1** Batch ID: **27162** RunNo: **36745**

Prep Date: **8/25/2016** Analysis Date: **8/25/2016** SeqNo: **1139346** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.76	5.554	78.4	33.9	141			
Surr: DNOP	4.7		5.076		91.9	70	130			

Sample ID **1608E24-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-1** Batch ID: **27162** RunNo: **36745**

Prep Date: **8/25/2016** Analysis Date: **8/25/2016** SeqNo: **1139347** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	49.90	5.554	68.8	33.9	141	12.9	20	
Surr: DNOP	4.5		4.990		90.1	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **MKS36762**	RunNo: **36762**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139805** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **MKS36762**	RunNo: **36762**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139805** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.54		0.5000		109	70	130			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.7	70	130			
Surr: Toluene-d8	0.49		0.5000		97.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.3	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **MKS36762**	RunNo: **36762**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139806** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	118	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC
Project: WPX WLU 707H Well Pad

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **MKS36762** RunNo: **36762**
Prep Date: Analysis Date: **8/25/2016** SeqNo: **1139806** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.1	0.050	1.000	0	105	70	130			
Trichloroethene (TCE)	1.1	0.050	1.000	0	108	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.2	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.47		0.5000		93.9	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.3	70	130			

Sample ID **1608e24-002ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **S-2** Batch ID: **MKS36762** RunNo: **36762**
Prep Date: Analysis Date: **8/25/2016** SeqNo: **1139807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.018	0.7082	0	122	49.2	155			
Toluene	0.75	0.035	0.7082	0	106	52	154			
Chlorobenzene	0.74	0.035	0.7082	0	105	53.2	150			
1,1-Dichloroethene	0.82	0.035	0.7082	0	115	34.2	163			
Trichloroethene (TCE)	0.79	0.035	0.7082	0	112	48.2	151			
Surr: Dibromofluoromethane	0.37		0.3541		105	70	130			
Surr: 1,2-Dichloroethane-d4	0.33		0.3541		92.3	70	130			
Surr: Toluene-d8	0.35		0.3541		97.6	70	130			
Surr: 4-Bromofluorobenzene	0.36		0.3541		102	70	130			

Sample ID **1608e24-002amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **S-2** Batch ID: **MKS36762** RunNo: **36762**
Prep Date: Analysis Date: **8/25/2016** SeqNo: **1139808** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.018	0.7082	0	113	49.2	155	7.71	20	
Toluene	0.72	0.035	0.7082	0	102	52	154	3.74	20	
Chlorobenzene	0.72	0.035	0.7082	0	102	53.2	150	2.45	20	
1,1-Dichloroethene	0.74	0.035	0.7082	0	104	34.2	163	10.5	20	
Trichloroethene (TCE)	0.73	0.035	0.7082	0	103	48.2	151	7.97	20	
Surr: Dibromofluoromethane	0.38		0.3541		106	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.30		0.3541		85.6	70	130	0	0	
Surr: Toluene-d8	0.34		0.3541		96.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.33		0.3541		94.4	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139834** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	99.6	70	130			
Toluene	0.96	0.050	1.000	0	95.8	70	130			
Chlorobenzene	0.91	0.050	1.000	0	90.6	70	130			
1,1-Dichloroethene	1.0	0.050	1.000	0	101	70	130			
Trichloroethene (TCE)	0.90	0.050	1.000	0	89.8	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		101	70	130			
Surr: Toluene-d8	0.49		0.5000		98.0	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.8	70	130			

Sample ID **rb3**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139835** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **rb3**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139835** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **rb3** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **PBS** Batch ID: **R36763** RunNo: **36763**

Prep Date: Analysis Date: **8/25/2016** SeqNo: **1139835** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.1	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.4	70	130			

Sample ID **1608E24-013AMS** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **S-13** Batch ID: **R36763** RunNo: **36763**

Prep Date: Analysis Date: **8/25/2016** SeqNo: **1139841** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.020	0.7974	0	103	49.2	155			
Toluene	0.76	0.040	0.7974	0	95.1	52	154			
Chlorobenzene	0.76	0.040	0.7974	0	94.7	53.2	150			
1,1-Dichloroethene	0.88	0.040	0.7974	0	111	34.2	163			
Trichloroethene (TCE)	0.76	0.040	0.7974	0	95.9	48.2	151			
Surr: Dibromofluoromethane	0.41		0.3987		104	70	130			
Surr: 1,2-Dichloroethane-d4	0.41		0.3987		102	70	130			
Surr: Toluene-d8	0.38		0.3987		95.3	70	130			
Surr: 4-Bromofluorobenzene	0.40		0.3987		100	70	130			

Sample ID **1608E24-013AMSD** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **S-13** Batch ID: **R36763** RunNo: **36763**

Prep Date: Analysis Date: **8/25/2016** SeqNo: **1139842** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.77	0.020	0.7974	0	96.0	49.2	155	6.70	20	
Toluene	0.71	0.040	0.7974	0	88.6	52	154	7.16	20	
Chlorobenzene	0.69	0.040	0.7974	0	86.7	53.2	150	8.85	20	
1,1-Dichloroethene	0.82	0.040	0.7974	0	103	34.2	163	6.77	20	
Trichloroethene (TCE)	0.73	0.040	0.7974	0	91.5	48.2	151	4.61	20	
Surr: Dibromofluoromethane	0.40		0.3987		101	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.42		0.3987		104	70	130	0	0	
Surr: Toluene-d8	0.37		0.3987		93.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.38		0.3987		95.6	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **MB-27172**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS**	Batch ID: **27172**	RunNo: **36781**
Prep Date: **8/25/2016**	Analysis Date: **8/26/2016**	SeqNo: **1140167** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID **LCS-27172**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS**	Batch ID: **27172**	RunNo: **36781**
Prep Date: **8/25/2016**	Analysis Date: **8/26/2016**	SeqNo: **1140168** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	98.6	80	120			

Sample ID **1608E24-014AMS**	SampType: **MS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **Metals-1**	Batch ID: **27172**	RunNo: **36781**
Prep Date: **8/25/2016**	Analysis Date: **8/26/2016**	SeqNo: **1140170** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1687	0.01048	99.9	75	125			

Sample ID **1608E24-014AMSD**	SampType: **MSD**	TestCode: **EPA Method 7471: Mercury**
Client ID: **Metals-1**	Batch ID: **27172**	RunNo: **36781**
Prep Date: **8/25/2016**	Analysis Date: **8/26/2016**	SeqNo: **1140171** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1685	0.01048	103	75	125	3.19	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **1608E24-014AMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **Metals-1** Batch ID: **27170** RunNo: **36817**

Prep Date: **8/25/2016** Analysis Date: **8/29/2016** SeqNo: **1141434** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	12	24.93	0	101	75	125			
Barium	200	0.50	24.93	182.5	70.5	75	125			S
Cadmium	23	0.50	24.93	0	92.9	75	125			
Chromium	31	1.5	24.93	7.112	95.0	75	125			
Lead	28	1.2	24.93	6.614	85.7	75	125			
Selenium	18	12	24.93	0	73.1	75	125			S
Silver	4.7	1.2	4.985	0	94.0	75	125			

Sample ID **1608E24-014AMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **Metals-1** Batch ID: **27170** RunNo: **36817**

Prep Date: **8/25/2016** Analysis Date: **8/29/2016** SeqNo: **1141435** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	12	24.77	0	97.3	75	125	4.71	20	
Barium	170	0.50	24.77	182.5	-70.1	75	125	19.1	20	S
Cadmium	23	0.50	24.77	0	93.9	75	125	0.445	20	
Chromium	30	1.5	24.77	7.112	93.5	75	125	1.66	20	
Lead	27	1.2	24.77	6.614	82.7	75	125	3.14	20	
Selenium	16	12	24.77	0	65.1	75	125	12.2	20	S
Silver	4.7	1.2	4.954	0	94.4	75	125	0.202	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R36762**	RunNo: **36762**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139810** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		100	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R36762**	RunNo: **36762**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.3	62.9	123			
Surr: BFB	500		500.0		101	70	130			

Sample ID **1608E24-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **S-1**	Batch ID: **R36762**	RunNo: **36762**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139812** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.7	18.37	0	92.2	52.3	132			
Surr: BFB	370		367.4		99.8	70	130			

Sample ID **1608E24-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **S-1**	Batch ID: **R36762**	RunNo: **36762**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139813** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.7	18.37	0	93.6	52.3	132	1.46	20	
Surr: BFB	370		367.4		101	70	130	0	0	

Sample ID **1608E24-013AMS**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **S-13**	Batch ID: **A36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139847** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	4.0	19.94	0.9968	74.7	52.3	132			
Surr: BFB	410		398.7		103	70	130			

Sample ID **1608E24-013AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **S-13**	Batch ID: **A36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139848** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608E24**

30-Aug-16

Client: Rule Engineering LLC

Project: WPX WLU 707H Well Pad

Sample ID **1608E24-013AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **S-13**	Batch ID: **A36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1139848** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	15	4.0	19.94	0.9968	70.3	52.3	132	5.68	20	
Surr: BFB	400		398.7		100	70	130	0	0	

Sample ID **2.5ug lcs gro**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **A36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1140140** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	77.4	62.9	123			
Surr: BFB	500		500.0		101	70	130			

Sample ID **rb3**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R36763**	RunNo: **36763**
Prep Date:	Analysis Date: **8/25/2016**	SeqNo: **1140463** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	490		500.0		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1608E24 RcptNo: 1

Received by/date: AG 08/25/16

Logged By: Ashley Gallegos 8/25/2016 8:00:00 AM AG

Completed By: Ashley Gallegos 8/25/2016 8:25:17 AM AG

Reviewed By: JC 08/25/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Rule Engineering, LLC
Mailing Address: 501 Airport Drive, Ste 205
Farmington, NM 87401
Phone #: (505) 716-2787
Email or Fax#: Deborah.Watson@wpxenergy.com hwoods@ruleengineering.com
QA/QC Package: Standard ☐ Level 4 (Full Validation)
Accreditation: NELAP ☐ Other
EDD (Type)

Turn-Around Time: ☐ Standard ☒ Rush Same Day
Project Name: WPX WLU #707H Well Pad
Project #:
Project Manager: Heather Woods
Sampler: Heather Woods
On Ice: ☒ Yes ☐ No
Sample Temperature: 3.5

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608634	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)						Air Bubbles (Y or N)
8/24/16	1018	Soil	S-1	(2) 4oz Glass	Cold	-001			X							X							
8/24/16	1038	Soil	S-2	(2) 4oz Glass	Cold	-002			X							X							
8/24/16	1048	Soil	S-3	(2) 4oz Glass	Cold	-003			X							X							
8/24/16	1053	Soil	S-4	(2) 4oz Glass	Cold	-004			X					X		X							
8/24/16	1059	Soil	S-5	(2) 4oz Glass	Cold	-005			X							X							
8/24/16	1151	Soil	S-6	(2) 4oz Glass	Cold	-006			X							X							
8/24/16	1147	Soil	S-7	(2) 4oz Glass	Cold	-007			X							X							
8/24/16	1139	Soil	S-8	(2) 4oz Glass	Cold	-008			X							X							
8/24/16	1133	Soil	S-9	(2) 4oz Glass	Cold	-009			X							X							
8/24/16	1112	Soil	S-10	(2) 4oz Glass	Cold	-010			X							X							
8/24/16	1127	Soil	S-11	(2) 4oz Glass	Cold	-011			X							X							
8/24/16	1118	Soil	S-12	(2) 4oz Glass	Cold	-012			X							X							

Date	Time	Relinquished by:	Received by:	Date	Time
8/24/16	1830	Heather M. Woods	Christine Walters	8/24/16	1830
8/24/16	2031	Christine Walters		08/25/16	0800

Remarks:
Direct Bill to WPX
Attn: Deborah Watson

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Ruele Engineering, LLC
Mailing Address: 501 Airport Drive, Ste 205
Farmington, NM 87401
Phone #: (505) 716-2787
Email or Fax#: Deborah.Watson@bpxenergy.com hwoods@ruleengineering.com
QA/QC Package: Standard ☐ Level 4 (Full Validation)
Accreditation: NELAP ☐ Other
EDD (Type)

Turn-Around Time: ☐ Standard ☒ Rush Same Day
Project Name: WPX WLU #707H Well Pad
Project #:
Project Manager: Heather Woods
Sampler: Heather Woods
On Ice: ☒ Yes ☐ No
Sample Temperature: 3.5

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608E24	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
8/24/16	1105	Soil	S-13	(2) 4oz Glass	Cold	-013			X							X		
8/24/16	1015	Soil	Metals-1	(2) 4oz Glass	Cold	-014							X					
8/24/16	1054	Soil	Metals-2	(2) 4oz Glass	Cold	-015							X					
8/24/16	1134	Soil	Metals-3	(2) 4oz Glass	Cold	-016							X					

NES HW

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/24/16	1830	Heather M. Woods	Christy Walters	8/24/16	1830
8/25/16	0831	Christy Walters		08/25/16	0830

Remarks:
Direct Bill to WPX
Attn: Deborah Watson