

State of Colorado
Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY

Document 2526576

OGCC Employee:

Spill Complaint
 Inspection NOAV

Tracking No: 7298

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): Pit closure/tank upgrade

OGCC Operator Number: <u>96705</u>	Contact Name and Telephone: <u>Deborah Watson</u>
Name of Operator: <u>WPX Energy Production, LLC</u>	No: <u>505.333.1880/505.386.9693</u>
Address: <u>PO Box 640/ 721 S Main Street</u>	Fax: <u>505.333.1805</u>
City: <u>Aztec</u> State: <u>NM</u> Zip: <u>87410</u>	

API Number: <u>05-067-05511</u>	County: <u>La Plata</u>
Facility Name: <u>Pit</u>	Facility Number: <u>105405</u>
Well Name: <u>Ignacio 33-8</u>	Well Number: <u>003</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NWSE 2 T33N R8W, NMPM</u> Latitude: <u>37.13008</u> Longitude: <u>-107.68519</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Irrigated

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Bodot Clay 3-10%

Potential receptors (water wells within 1/4 mi, surface waters, etc.): 3 water wells ~ 150 ft. Dry unnamed arroyo ~300 ft south

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	_____	TBD-not anticipated
<input type="checkbox"/> Vegetation	_____	N/A
<input type="checkbox"/> Groundwater	_____	TBD-not likely
<input type="checkbox"/> Surface Water	_____	TBD-not likely

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Assessment of former pit associated with COGCC. Currently buried vessel in proximity of former pit. Soil sampling to be done around perimeter of tank using hand auger or similar sampling method +/- 8 feet below ground surface.

Describe how source is to be removed:

Submit soils for Table 910-1 analysis.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

If soil impact found based on soil sampling, COGCC will be notified and assessment plan/reclamation plan will be developed. If no soil impact is found pit recored will be closed.

[Click here to reset form](#)

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801, Denver, Colorado 80203
(303)894-2100 Fax: (303)894-2109



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

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REMEDIATION WORKPLAN (Cont.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

No impact to groundwater, see laboratory results

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

No seeding or surface restoration is planned until site abandonment

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? Y N If yes, describe:

See attached analytical laboratory report.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 7/31/14 Date Site Investigation Completed: 7/31/14 Date Remediation Plan Submitted: _____
Remediation Start Date: 6/10/16 Anticipated Completion Date: 5/2/16 Actual Completion Date: 7/12/14

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Deborah Watson Signed: Deborah Watson

Title: Environmental Specialist Date: July 11, 2016

OGCC Approved: [Signature] Title: Environmental Protection Specialist Date: 7/15/16



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

July 31, 2014

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

RE: Ignacio 33-8 #003

OrderNo.: 1407567

Dear Buddy Shaw:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/12/2014 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1407567

Date Reported: 7/31/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: North Wall 1A & 1B 37.13007N ✓

Project: Ignacio 33-8 #003

Collection Date: 7/9/2014 12:30:00 PM

Lab ID: 1407567-001

Matrix: SOIL

Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/15/2014 10:34:05 PM	14199
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/15/2014 10:34:05 PM	14199
Surr: DNOP	89.8	57.9-140		%REC	1	7/15/2014 10:34:05 PM	14199
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/15/2014 6:09:48 PM	14206
Surr: BFB	92.7	80-120		%REC	1	7/15/2014 6:09:48 PM	14206
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	7/15/2014 6:09:48 PM	14206
Benzene	ND	0.047		mg/Kg	1	7/15/2014 6:09:48 PM	14206
Toluene	ND	0.047		mg/Kg	1	7/15/2014 6:09:48 PM	14206
Ethylbenzene	ND	0.047		mg/Kg	1	7/15/2014 6:09:48 PM	14206
Xylenes, Total	ND	0.095		mg/Kg	1	7/15/2014 6:09:48 PM	14206
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	7/15/2014 6:09:48 PM	14206
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	7/17/2014 3:58:46 PM	14278
EPA METHOD 7471: MERCURY							Analyst: JLF
Mercury	ND	0.033		mg/Kg	1	7/22/2014 12:52:35 PM	14338
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	5.0		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Barium	220	0.20		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Cadmium	ND	0.20		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Chromium	4.5	0.60		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Copper	7.8	0.60		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Lead	6.9	0.50		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Nickel	7.4	0.99		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Selenium	ND	5.0		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Silver	ND	0.50		mg/Kg	2	7/18/2014 11:08:50 AM	14259
Zinc	35	5.0		mg/Kg	2	7/18/2014 11:08:50 AM	14259
SAR SOLUBLE CATIONS							Analyst: ELS
Sodium Adsorption Ratio	2.8	0			1	7/19/2014 12:19:00 PM	14248
CONDUCTANCE							Analyst: IDC
Specific Conductance	610	1.0		µmhos/cm	1	7/18/2014 11:53:00 AM	R19988
SM4500-H+B: PH							Analyst: TMG
pH	8.29	1.68		pH Units	1	7/23/2014 11:45:00 AM	R20089

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
	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
	O RSD is greater than RSDlimit	P Sample pH greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: West Wall 2A & 2B

Project: Ignacio 33-8 #003

Collection Date: 7/9/2014 12:30:00 PM

Lab ID: 1407567-002

Matrix: SOIL

Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/15/2014 11:04:51 PM	14199
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/15/2014 11:04:51 PM	14199
Surr: DNOP	87.9	57.9-140		%REC	1	7/15/2014 11:04:51 PM	14199
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/15/2014 6:38:28 PM	14206
Surr: BFB	92.5	80-120		%REC	1	7/15/2014 6:38:28 PM	14206
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	7/15/2014 6:38:28 PM	14206
Benzene	ND	0.049		mg/Kg	1	7/15/2014 6:38:28 PM	14206
Toluene	ND	0.049		mg/Kg	1	7/15/2014 6:38:28 PM	14206
Ethylbenzene	ND	0.049		mg/Kg	1	7/15/2014 6:38:28 PM	14206
Xylenes, Total	ND	0.098		mg/Kg	1	7/15/2014 6:38:28 PM	14206
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	7/15/2014 6:38:28 PM	14206
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	7/17/2014 4:11:11 PM	14278
EPA METHOD 7471: MERCURY							Analyst: JLF
Mercury	0.046	0.031		mg/Kg	1	7/22/2014 12:54:25 PM	14338
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	4.9		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Barium	180	0.20		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Cadmium	ND	0.20		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Chromium	4.4	0.59		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Copper	11	0.59		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Lead	7.2	0.49		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Nickel	7.8	0.99		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Selenium	ND	4.9		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Silver	ND	0.49		mg/Kg	2	7/18/2014 11:10:13 AM	14259
Zinc	35	4.9		mg/Kg	2	7/18/2014 11:10:13 AM	14259
SAR SOLUBLE CATIONS							Analyst: ELS
Sodium Adsorption Ratio	1.8	0			1	7/19/2014 12:19:00 PM	14248
CONDUCTANCE							Analyst: IDC
Specific Conductance	580	1.0		µmhos/cm	1	7/18/2014 11:53:00 AM	R19988
SM4500-H+B: PH							Analyst: TMG
pH	8.19	1.68		pH Units	1	7/23/2014 11:45:00 AM	R20089

Refer to the QC Summary report and sample-log-in checklist for flagged QC data and preservation information.

Qualifiers: * Value exceeds Maximum Contaminant Level.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 O RSD is greater than RSDlimit
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 P Sample pH greater than 2.
 RL Reporting Detection Limit

Analytical Report

Lab Order 1407567

Date Reported: 7/31/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: East Wall 3A & 3B ✓

Project: Ignacio 33-8 #003

Collection Date: 7/9/2014 12:30:00 PM

Lab ID: 1407567-003

Matrix: SOIL

Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	54	9.9		mg/Kg	1	7/15/2014 11:35:39 PM	14199
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/15/2014 11:35:39 PM	14199
Surr: DNOP	88.6	57.9-140		%REC	1	7/15/2014 11:35:39 PM	14199
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/15/2014 9:01:29 PM	14206
Surr: BFB	90.8	80-120		%REC	1	7/15/2014 9:01:29 PM	14206
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	7/15/2014 9:01:29 PM	14206
Benzene	ND	0.047		mg/Kg	1	7/15/2014 9:01:29 PM	14206
Toluene	ND	0.047		mg/Kg	1	7/15/2014 9:01:29 PM	14206
Ethylbenzene	ND	0.047		mg/Kg	1	7/15/2014 9:01:29 PM	14206
Xylenes, Total	ND	0.095		mg/Kg	1	7/15/2014 9:01:29 PM	14206
Surr: 4-Bromofluorobenzene	98.9	80-120		%REC	1	7/15/2014 9:01:29 PM	14206
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	7/17/2014 4:48:25 PM	14278
EPA METHOD 7471: MERCURY							Analyst: JLF
Mercury	ND	0.031		mg/Kg	1	7/22/2014 12:56:16 PM	14338
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	4.9		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Barium	260	0.20		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Cadmium	ND	0.20		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Chromium	4.1	0.59		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Copper	6.7	0.59		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Lead	5.7	0.49		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Nickel	7.2	0.98		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Selenium	ND	4.9		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Silver	ND	0.49		mg/Kg	2	7/18/2014 11:11:33 AM	14259
Zinc	34	4.9		mg/Kg	2	7/18/2014 11:11:33 AM	14259
SAR SOLUBLE CATIONS							Analyst: ELS
Sodium Adsorption Ratio	1.9	0			1	7/19/2014 12:19:00 PM	14248
CONDUCTANCE							Analyst: IDC
Specific Conductance	540	1.0		µmhos/cm	1	7/18/2014 11:53:00 AM	R19988
SM4500-H+B: PH							Analyst: TMG
pH	8.24	1.68		pH Units	1	7/23/2014 11:45:00 AM	R20089

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

Qualifiers: * Value exceeds Maximum Contaminant Level.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 O RSD is greater than RSDlimit
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 P Sample pH greater than 2.
 RL Reporting Detection Limit

Analytical Report

Lab Order 1407567

Date Reported: 7/31/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: South Wall 4A & 4B

Project: Ignacio 33-8 #003

Collection Date: 7/9/2014 12:30:00 PM

Lab ID: 1407567-004

Matrix: SOIL

Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/16/2014 12:06:25 AM	14199
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/16/2014 12:06:25 AM	14199
Surr: DNOP	88.9	57.9-140		%REC	1	7/16/2014 12:06:25 AM	14199
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/15/2014 9:30:09 PM	14206
Surr: BFB	89.1	80-120		%REC	1	7/15/2014 9:30:09 PM	14206
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	7/15/2014 9:30:09 PM	14206
Benzene	ND	0.049		mg/Kg	1	7/15/2014 9:30:09 PM	14206
Toluene	ND	0.049		mg/Kg	1	7/15/2014 9:30:09 PM	14206
Ethylbenzene	ND	0.049		mg/Kg	1	7/15/2014 9:30:09 PM	14206
Xylenes, Total	ND	0.097		mg/Kg	1	7/15/2014 9:30:09 PM	14206
Surr: 4-Bromofluorobenzene	96.3	80-120		%REC	1	7/15/2014 9:30:09 PM	14206
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	7/17/2014 5:00:50 PM	14278
EPA METHOD 7471: MERCURY							Analyst: JLF
Mercury	ND	0.031		mg/Kg	1	7/22/2014 12:58:07 PM	14338
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	4.9		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Barium	410	0.19		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Cadmium	ND	0.19		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Chromium	3.3	0.58		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Copper	7.5	0.58		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Lead	6.4	0.49		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Nickel	6.0	0.97		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Selenium	ND	4.9		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Silver	ND	0.49		mg/Kg	2	7/19/2014 3:02:38 PM	14259
Zinc	30	4.9		mg/Kg	2	7/19/2014 3:02:38 PM	14259
SAR SOLUBLE CATIONS							Analyst: ELS
Sodium Adsorption Ratio	0.76	0			1	7/19/2014 12:19:00 PM	14248
CONDUCTANCE							Analyst: IDC
Specific Conductance	580	1.0		µmhos/cm	1	7/18/2014 11:53:00 AM	R19988
SM4500-H+B: PH							Analyst: TMG
pH	8.44	1.68		pH Units	1	7/23/2014 11:45:00 AM	R20089

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

Qualifiers: * Value exceeds Maximum Contaminant Level.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 O RSD is greater than RSDlimit
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 P Sample pH greater than 2.
 RL Reporting Detection Limit

Analytical Report

Lab Order 1407567

Date Reported: 7/31/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: Center of Pit 5A & 5B ✓

Project: Ignacio 33-8 #003

Collection Date: 7/9/2014 12:30:00 PM

Lab ID: 1407567-005

Matrix: SOIL

Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/16/2014 12:37:10 AM	14199
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/16/2014 12:37:10 AM	14199
Surr: DNOP	88.6	57.9-140		%REC	1	7/16/2014 12:37:10 AM	14199
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/15/2014 9:58:50 PM	14206
Surr: BFB	90.1	80-120		%REC	1	7/15/2014 9:58:50 PM	14206
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	7/15/2014 9:58:50 PM	14206
Benzene	ND	0.048		mg/Kg	1	7/15/2014 9:58:50 PM	14206
Toluene	ND	0.048		mg/Kg	1	7/15/2014 9:58:50 PM	14206
Ethylbenzene	ND	0.048		mg/Kg	1	7/15/2014 9:58:50 PM	14206
Xylenes, Total	ND	0.097		mg/Kg	1	7/15/2014 9:58:50 PM	14206
Surr: 4-Bromofluorobenzene	97.0	80-120		%REC	1	7/15/2014 9:58:50 PM	14206
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	7/17/2014 5:13:16 PM	14278
EPA METHOD 7471: MERCURY							Analyst: JLF
Mercury	ND	0.032		mg/Kg	1	7/22/2014 12:59:51 PM	14338
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	4.9		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Barium	1200	0.97		mg/Kg	10	7/19/2014 3:05:24 PM	14259
Cadmium	ND	0.19		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Chromium	4.3	0.58		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Copper	8.7	0.58		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Lead	8.2	0.49		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Nickel	7.3	0.97		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Selenium	ND	4.9		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Silver	ND	0.49		mg/Kg	2	7/18/2014 11:14:17 AM	14259
Zinc	35	4.9		mg/Kg	2	7/18/2014 11:14:17 AM	14259
SAR SOLUBLE CATIONS							Analyst: ELS
Sodium Adsorption Ratio	2.1	0			1	7/19/2014 12:19:00 PM	14248
CONDUCTANCE							Analyst: IDC
Specific Conductance	640	1.0		µmhos/cm	1	7/18/2014 11:53:00 AM	R19988
SM4500-H+B: PH							Analyst: TMG
pH	8.17	1.68		pH Units	1	7/23/2014 11:45:00 AM	R20089

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
	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
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Analytical Report

Lab Order 1407567

Date Reported: 7/31/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: Perm of Site 6A & 6B

Project: Ignacio 33-8 #003

Collection Date: 7/9/2014 12:30:00 PM

Lab ID: 1407567-006

Matrix: SOIL

Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/16/2014 1:07:51 AM	14199
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/16/2014 1:07:51 AM	14199
Surr: DNOP	81.7	57.9-140		%REC	1	7/16/2014 1:07:51 AM	14199
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/15/2014 10:27:26 PM	14206
Surr: BFB	91.0	80-120		%REC	1	7/15/2014 10:27:26 PM	14206
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.093		mg/Kg	1	7/15/2014 10:27:26 PM	14206
Benzene	ND	0.046		mg/Kg	1	7/15/2014 10:27:26 PM	14206
Toluene	ND	0.046		mg/Kg	1	7/15/2014 10:27:26 PM	14206
Ethylbenzene	ND	0.046		mg/Kg	1	7/15/2014 10:27:26 PM	14206
Xylenes, Total	ND	0.093		mg/Kg	1	7/15/2014 10:27:26 PM	14206
Surr: 4-Bromofluorobenzene	98.6	80-120		%REC	1	7/15/2014 10:27:26 PM	14206
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	7/17/2014 5:25:41 PM	14278
EPA METHOD 7471: MERCURY							Analyst: JLF
Mercury	0.31	0.032		mg/Kg	1	7/22/2014 1:01:35 PM	14338
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	4.8		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Barium	420	0.19		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Cadmium	ND	0.19		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Chromium	5.9	0.57		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Copper	9.1	0.57		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Lead	15	0.48		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Nickel	7.7	0.95		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Selenium	ND	4.8		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Silver	ND	0.48		mg/Kg	2	7/18/2014 11:19:48 AM	14259
Zinc	53	4.8		mg/Kg	2	7/18/2014 11:19:48 AM	14259
SAR SOLUBLE CATIONS							Analyst: ELS
Sodium Adsorption Ratio	0.13	0			1	7/19/2014 12:19:00 PM	14248
CONDUCTANCE							Analyst: IDC
Specific Conductance	750	1.0		µmhos/cm	1	7/18/2014 11:53:00 AM	R19988
SM4500-H+B: PH							Analyst: TMG
pH	7.60	1.68		pH Units	1	7/23/2014 11:45:00 AM	R20089

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

Qualifiers: * Value exceeds Maximum Contaminant Level.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 O RSD is greater than RSDlimit
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 P Sample pH greater than 2.
 RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1407567

31-Jul-14

Client: WPX Energy
Project: Ignacio 33-8 #003

Sample ID	MB-14278	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	14278	RunNo:	19973					
Prep Date:	7/17/2014	Analysis Date:	7/17/2014	SeqNo:	580401	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-14278	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	14278	RunNo:	19973					
Prep Date:	7/17/2014	Analysis Date:	7/17/2014	SeqNo:	580402	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- 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
- O RSD is greater than RSDlimit
- P Sample pH greater than 2.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1407567

31-Jul-14

Client: WPX Energy
Project: Ignacio 33-8 #003

Sample ID	MB-14199	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	14199	RunNo:	19860					
Prep Date:	7/14/2014	Analysis Date:	7/14/2014	SeqNo:	577270	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	7.4		10.00		74.4	57.9	140			

Sample ID	LCS-14199	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	14199	RunNo:	19860					
Prep Date:	7/14/2014	Analysis Date:	7/14/2014	SeqNo:	577271	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	52	10	50.00	0	103	68.6	130			
Surr: DNOP	3.8		5.000		75.1	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1407567

31-Jul-14

Client: WPX Energy
Project: Ignacio 33-8 #003

Sample ID	MB-14206	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	14206	RunNo:	19892					
Prep Date:	7/14/2014	Analysis Date:	7/15/2014	SeqNo:	578279	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	880		1000		87.9	80	120			

Sample ID	LCS-14206	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	14206	RunNo:	19892					
Prep Date:	7/14/2014	Analysis Date:	7/15/2014	SeqNo:	578280	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	71.7	134			
Surr: BFB	960		1000		95.6	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1407567

31-Jul-14

Client: WPX Energy
Project: Ignacio 33-8 #003

Sample ID	MB-14206	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	14206	RunNo:	19892					
Prep Date:	7/14/2014	Analysis Date:	7/15/2014	SeqNo:	578328	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	80	120			

Sample ID	LCS-14206	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	14206	RunNo:	19892					
Prep Date:	7/14/2014	Analysis Date:	7/15/2014	SeqNo:	578329	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.2	0.10	1.000	0	116	80	120			
Benzene	1.1	0.050	1.000	0	109	80	120			
Toluene	1.1	0.050	1.000	0	107	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1407567

31-Jul-14

Client: WPX Energy
Project: Ignacio 33-8 #003

Sample ID	MB-14338	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	14338	RunNo:	20060					
Prep Date:	7/21/2014	Analysis Date:	7/22/2014	SeqNo:	583010	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-14338	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	14338	RunNo:	20060					
Prep Date:	7/21/2014	Analysis Date:	7/22/2014	SeqNo:	583011	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	98.8	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- 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
- O RSD is greater than RSDlimit
- P Sample pH greater than 2.
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1407567

31-Jul-14

Client: WPX Energy
Project: Ignacio 33-8 #003

Sample ID: MB-14259	SampType: MBLK	TestCode: EPA Method 6010B: Soil Metals
Client ID: PBS	Batch ID: 14259	RunNo: 19979
Prep Date: 7/16/2014	Analysis Date: 7/18/2014	SeqNo: 580588 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Copper	ND	0.30								
Lead	ND	0.25								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Zinc	ND	2.5								

Sample ID: LCS-14259	SampType: LCS	TestCode: EPA Method 6010B: Soil Metals
Client ID: LCSS	Batch ID: 14259	RunNo: 19979
Prep Date: 7/16/2014	Analysis Date: 7/18/2014	SeqNo: 580589 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.5	25.00	0	97.5	80	120			
Barium	25	0.10	25.00	0	99.3	80	120			
Cadmium	25	0.10	25.00	0	98.8	80	120			
Chromium	25	0.30	25.00	0	99.8	80	120			
Copper	26	0.30	25.00	0	103	80	120			
Lead	24	0.25	25.00	0	94.3	80	120			
Nickel	24	0.50	25.00	0	95.8	80	120			
Selenium	24	2.5	25.00	0	94.1	80	120			
Silver	5.0	0.25	5.000	0	100	80	120			
Zinc	25	2.5	25.00	0	101	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87105
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: WPX ENERGY

Work Order Number: 1407567

ReptNo: 1

Received by/date: AF 07/12/14

Logged By: **Celina Sessa** 7/12/2014 10:40:00 AM *Celina Sessa*

Completed By: **Celina Sessa** 7/14/2014 8:56:40 AM *Celina Sessa*

Reviewed By: MG 07/14/14

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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> 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	3.1	Good	Yes			

Chain-of-Custody Record

Client: WPT Energy

Turn-Around Time: Standard Rush

Project Name: Gracioso 338 #003

Mailing Address: 721 S. Main

Project #: Gracioso 338 #003

Phone #: 505-333-1880

Project Manager: Buddy Drees

email or Fax#: Verossa Fields

QA/QC Package: Buddy Drees System

Verossa Fields

Standard Level 4 (Full Validation)

Accreditation: NELAP Other

Sampler: 140756

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEATING
7/9	12:30	soil	37.12007N 1421B Westwell	7402 Cool		140756
7/11	11:00	soil	37.12007N 1421B Westwell			
7/11	11:00	soil	37.12007N 1421B Westwell			
7/11	11:00	soil	37.12007N 1421B Westwell			
7/11	11:00	soil	37.12007N 1421B Westwell			
7/11	11:00	soil	37.12007N 1421B Westwell			

Date: 7/11/14 Time: 1021 Relinquished by: James

Date: 7/11/14 Time: 1049 Relinquished by: Christine Walker

Date: 7/11/14 Time: 1021 Received by: Christine Walker

Date: 7/12/14 Time: 1010 Received by: [Signature]

Remarks: Test For Co Metals
Chromium, Nickel, Arsenic, Copper
Selenium, Barium, Lead, Silver
Cadmium, Mercury, Zinc



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

Analysis Request	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 See Attachment 5	Antons (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y N)
	1	1	1	1	1	1	X	1	1	1	1	1

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 indicated on the analytical report.



Ignacio 33-8 #003
Pit Sample Location
Section 2, Township 33N, Range 08W
N37.13008, W107.68519
La Plata County, CO