# 3R-1012

# Release Report/ General Correspondence

**Enterprise RA** 

Date: Apr-Jun 2015

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

APR 17 2015

OIL CONS. DIV DIST. 3

Form C-141 Revised August 8, 2011

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

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

				Sail	ila re	e, INIVI O	303									
		F	Releas	e Notifica	ation	and C	orrective	Acti	on							
					OP	ERATOR	3	$\boxtimes$	Initial F	Report		Final Re	por			
Name of C	ompany: I	Enterprise I	Field Ser	vices LLC	(	Contact: Thomas Long										
		Ave, Farmin	gton, NN	1 87401			No. 505-599-									
Facility Na	me: Latera	al K-7			F	Facility Typ	e: Natural Ga	s Gat	hering Pi	peline						
Surface Ov	wner: BLM			Mineral O	wner:	BLM			API No.							
				LOCA	TION	ON OF RELEASE										
Unit Letter	Section	Township	Range	Feet from		South	Feet from	East	West	County						
L	22	26N	7W	the <b>1295</b>	Line		the 1120	Line		Rio Arri	ba					
			1		OEAA	Longitud		1								
			L				le <u>-107.56842</u>	<u> </u>								
Type of Rele	ease: Natur	al Gas and N	Natural Ga		JKE	OF RELI	EASE f Release Unkn	own	Volume I	Recovered	d: Non	ie				
Source of R						Date and	Hour of Occurre		Date and	Hour of E	Discov					
Was Immed	iate Notice	Given?					1:00 p.m. Whom? Courte	esy Not		@ 1:30 p.r		MOCD: Sh	nari			
vvas iiiiiica	iate ivolice		s 🗌 No	Not Requ	uired	Ketcham		csy ivot	illication –	oory on in	.11 — 111	vicob, oi	iaii			
By Whom?						Date and Time 3/23/15 at 3:23 p.m.										
Was a Wate	ercourse Re					If YES, Vo	olume Impacting	the Wa	atercourse							
			☐ Yes	⊠ No												
If a Waterco	urse was In	npacted, Des	scribe Full	y.*												
Describe Ca	ause of Prob	olem and Re	medial Ac	tion: On March	23, 20	15, Enterpr	se discovered a	releas	e on the L	ateral K-7	pipeli	ne during				
					blown	down, locke	ed out and tagge	ed out f	or safety a	ind enviro	nment	al concern	IS.			
The release	was a resu	lt of a faulty	repair or t	ne pipeline.												
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							countered in the determined to									
							ontractor will over						VV			
closure sam	ples during						eipt of the third									
action repor	t.															
							st of my knowled ase notifications									
							-141 report by the									
							investigate and									
							AOCD acceptan		C-141 rep	ort does n	not reli	eve the				
operator of i	responsibilit	ty for complia	ance with	any other feder	al, stat	e, or local la	aws and/or regu		/ATION	DIVICI	ON4.	/	_			
Signature:	70	m) to	colds				OIL CON	SEKI	AHON	DIVISI	Oly		91			
	170		Yes						//	/						
Printed Nam	ne: Jon E. F	ields			/	Approved by	y Environmenta	Specia	alist:	7	h	1	7			
Title: Directo	or. Environn	nental				Approval Da	ate: 4/30/16	5	Expiration	Date:						
F-mail Addr					Conditions of Approval:											
r-mall Andr	HAS INTINING	anenna com			1 (	A SHOHIDING	II AUUUUVAI			1						

\* Attach Additional Sheets If Necessary

Phone: (713)381-6684

#NOS 15120 30 409



Attached

OIL CONS. DIV DIST. 3

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

APR 1 3 2015

Form C-141 Revised August 8, 2011

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

Santa Fe, NM 87505

Oil Conservation Division 1220 South St. Francis Dr.

Release Notification and Corrective Action **OPERATOR** Initial Report Name of Company: Enterprise Field Services LLC Contact: Thomas Long Address: 614 Reilly Ave, Farmington, NM 87401 Telephone No. 505-599-2286 Facility Name: Lateral K-31 Release Site Facility Type: Natural Gas Gathering Line Surface Owner: State of NM Mineral Owner: BLM API No. **LOCATION OF RELEASE** Unit Letter Section North/South Township Range Feet from Feet from East West County 25N 6W D 16 the Line the Line Rio Arriba 1293 1092 Latitude 36.403565 Longitude -107.477592 NATURE OF RELEASE Type of Release: Natural Gas Volume of Release 44.09 MCF Volume Recovered: None 15 Gas 15 Source of Release: Internal Corrosion Date and Hour of Discovery: Date and Hour of Occurrence: 1/19/2014<sup>'</sup>@ 11:30 a.m. 1/19/2014 @ 12:30 p.m. Was Immediate Notice Given? If YES, To Whom? Courtesy Notification—Cory Smith, NMOCD ☐ Yes ☐ No ☒ Not Required By Whom? Thomas Long Date and Hour 1/26/2015 @ 7:19 a.m. Was a Watercourse Reached? If YES, Volume Impacting the Watercourse ☐ Yes ☒ No If a Watercourse was Impacted, Describe Fully.\* Describe Cause of Problem and Remedial Action: On January 19, 2015, Enterprise technicians confirmed a leak on Lateral K-31 pipeline. The pipeline was isolated, de-pressurized and lock out tag out was applied. Repairs were completed on January 27, 2015. The release was a result of internal corrosion. Describe Area Affected and Cleanup Action: A third party environmental contractor conducted an investigation during the repair activities. The investigation indicated that the dry natural gas release caused no subsurface impacts. Excavated soils were sampled and laboratory analysis indicated no hydrocarbon impacts associated with the release. Soils excavated during the repair activities were used as backfill. A third party investigation report is included with this "Final." C-141. 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. OIL CONSERVATION DIVISION Signature: Printed Name: Jon E. Fields Approved by Environmental Specialist: Approval Date: 5 **Expiration Date:** Title: Director, Environmental E-mail Address:jefields@eprod.com Conditions of Approval: Attached Phone: (713)381-6684

\* Attach Additional Sheets If Necessary

#NCS 1507248889

APR 1 3 2015



#### CORRECTIVE ACTION REPORT

#### Property:

Lateral K-31 January 2015 Pipeline Release NW 1/4, S16 T25N R6W Rio Arriba County, New Mexico

> February 26, 2015 Apex Project No. 7250415G002

> > Prepared for:

Enterprise Field Services, LLC 614 Reilly Avenue Farmington, NM 87401 Attn: Mr. Thomas Long

Prepared by:

Ranee Deechilly Environmental Scientist

Elizabeth Scaggs, P.G.

Division Manager

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#### CORRECTIVE ACTION REPORT

Lateral K-31 January 2015 Pipeline Release NW 1/4, S16 T25N R6W Rio Arriba County, New Mexico

Apex Project No. 7250415G002

#### 1.0 INTRODUCTION

#### 1.1 Site Description & Background

The Lateral K-31 January 2015 Pipeline Release Site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the northwest (NW) ¼ of Section 16 in Township 25 North and Range 6 West in rural Rio Arriba County, New Mexico (36.40358N, 107.47759W), referred to hereinafter as the "Site" or "subject Site". The Site is located on State land managed by the New Mexico State Land Office. The Site is surrounded by native vegetation rangeland periodically interrupted with oil and gas production and gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

Beginning on January 26, 2015, Enterprise initiated excavation activities at the Site in an effort to locate and repair a subsurface leak. The leak was subsequently identified and repaired. An unknown quantity of natural gas was released from the pipeline as a result of internal corrosion. The leak was identified by a gas vapor survey at the ground surface.

A topographic map depicting the location of the Site is included as Figure 1, and a Site Vicinity Map is included as Figure 2 in Appendix A.

#### 1.2 Project Objective

The primary objective of the corrective actions was to reduce the concentration of constituents of concern (COCs) in the on-Site soils to below the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) Remediation Action Levels using the New Mexico EMNRD OCD's Guidelines for Remediation of Leaks, Spills and Releases as guidance.

#### 2.0 SITE RANKING

In accordance with the New Mexico ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex TITAN, Inc. (Apex) utilized the general site characteristics obtained during the completion of corrective action activities and information available from the Office of the New Mexico Office of the State Engineer (OSE) to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:



Rankir	Ranking Criteria								
	<50 feet	20							
Depth to Groundwater	50 to 99 feet	10	20						
	>100 feet	0							
Wellhead Protection Area • <1,000 feet from a water	Yes	20	0						
source, or; <200 feet from private domestic water source.	No	0	· ·						
	<200 feet	20							
Distance to Surface Water Body	200 to 1,000 feet	10	20						
	>1,000 feet	0							
Total Rar	40								

Based on Apex's evaluation of the scoring criteria, the Site would have a maximum Total Ranking Score of "40". This ranking is based on the following:

- Depth to groundwater is anticipated to be approximately 15 feet below grade surface (bgs) as observed in nearby groundwater monitoring wells and elevation differential between the Site and Largo Wash, resulting in a depth to groundwater ranking of "20".
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site. The lack of water source proximities results in a wellhead protection area ranking of "0".
- The release point is located less than 200 west of an ephemeral wash that drains to Largo Wash, resulting in a distance to surface water ranking of "20".

#### 3.0 RESPONSE ACTIONS

#### 3.1 Soil Excavation Activities

Beginning on January 26, 2015, Enterprise initiated excavation activities at the Site in an effort to locate and repair a subsurface leak. The leak was subsequently identified and repaired. An unknown quantity of natural gas was released from the pipeline as a result of internal corrosion. The leak was identified by a gas vapor survey at the ground surface. During the corrective action activities, Crossfire, LLC provided heavy equipment and labor support, and Heather Woods and Ranee Deechilly, Apex environmental professionals, provided environmental support.

The surface expression of the excavation measured approximately 19 feet long by nine (9) feet wide, with a total depth of approximately five (5) feet bgs.

The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated sand with silt and clay.

The unaffected soil stockpiles were sampled to verify acceptable COC concentrations prior to use as backfill. The area was contoured to surrounding grade subsequent to backfilling activities.

Figure 3 is a site map that indicates the approximate location of the excavated area in relation to pertinent land features (Appendix A). Photographic documentation of the field activities is included in Appendix B.



#### 3.2 Soil Sampling Program

Apex screened head-space samples of Site soils with a photoionization detector (PID) fitted with a 10.6 eV lamp.

Apex's soil sampling program included the collection of five (5) final confirmation samples (C-1 through C-5) from the resulting excavation for laboratory analysis. In addition, two (2) composite samples (SP-1 and SP-2) were collected from the unaffected stockpiled soils to determine the potential to reuse these soils as backfill material. Figure 3 depicts the approximate location of the excavated area and shows the final confirmation sample locations in relation to the final excavation dimensions (Appendix A).

The confirmation soil samples were collected and placed in laboratory prepared glassware, labeled/sealed using the laboratory supplied labels, and placed on ice in a cooler, which was secured with a custody seal. The sample cooler and completed chain-of-custody form were relinquished to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for rush analysis.

#### 3.3 Laboratory Analytical Methods

The confirmation soil samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) utilizing Environmental Protection Agency (EPA) SW-846 Method #8021, and total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) utilizing EPA SW-846 Method #8015. Soil samples SP-1 and SP-2 were also analyzed for chlorides utilizing EPA Method 300.0.

Laboratory results are summarized in Table 1, included in Appendix C. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

#### 4.0 DATA EVALUATION

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to condensate releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically New Mexico Administrative Code 19.15.29 *Remediation Plan*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

#### 4.1 Confirmation Soil Samples

Apex compared the BTEX and TPH concentrations or reporting limits associated with the final confirmation samples (C-1 through C-5) collected from the excavated area to the OCD *Remediation Action Levels* (RALs) for sites having a total ranking score of "40".

- The laboratory analyses of confirmation samples collected from soils remaining in place or reused as backfill do not indicate benzene concentrations above the laboratory reporting limits, which are below the OCD Remediation Action Level.
- The laboratory analyses of the confirmation samples collected from soils remaining in place or reused as backfill do not indicate total BTEX concentrations above the laboratory reporting limits, which are below the OCD Remediation Action Level.



- The laboratory analyses of the confirmation samples collected from soils remaining in place or reused as backfill did not indicate combined TPH GRO/DRO concentrations above the laboratory reporting limits, which are below the OCD Remediation Action Level for a Site ranking of "40".
- Stockpile samples (SP-1 and SP-2) were analyzed to determine the chloride concentration of the release area soils. SP-1 and SP-2 exhibited chloride concentrations of 90 mg/kg and 120 mg/kg, respectively.

Confirmation sample results are provided in Table 1 in Appendix C.

#### 5.0 FINDINGS AND RECOMMENDATIONS

The Lateral K-31 January 2015 Pipeline Release Site is located within the Enterprise ROW in the NW ¼ of Section 16 in Township 25 North and Range 6 West in rural Rio Arriba County, New Mexico. The Site is located on State Land managed by the New Mexico State Land Office. The Site is surrounded by native vegetation rangeland periodically interrupted with oil and gas production and gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

Beginning on January 26, 2015, Enterprise initiated excavation activities at the Site in an effort to locate and repair a subsurface leak. The leak was subsequently identified and repaired. An unknown quantity of natural gas was released from the pipeline as a result of internal corrosion. The leak was identified by a gas vapor survey at the ground surface.

- The primary objective of the corrective actions was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD RALs using the New Mexico EMNRD OCD's Guidelines for Remediation of Leaks, Spills and Releases as guidance.
- The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated sand with silt and clay.
- The surface expression of the excavation measured approximately 19 feet long by nine (9) feet wide, with a total depth of approximately five (5) feet bgs.
- Prior to backfilling, five (5) final confirmation samples and two (2) stockpile samples were collected from the resulting excavation for laboratory analyses. Based on analytical results, soils remaining in place or reused as backfill do not exhibit COC concentrations above the OCD Remediation Action Levels for a Site ranking of "40".
- The excavation was backfilled with the stockpiled soil analytically verified to be below applicable OCD Remediation Action Levels and contoured to surrounding grade.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

#### 6.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE

Apex's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work of third parties supplying information used in the report (e.g.

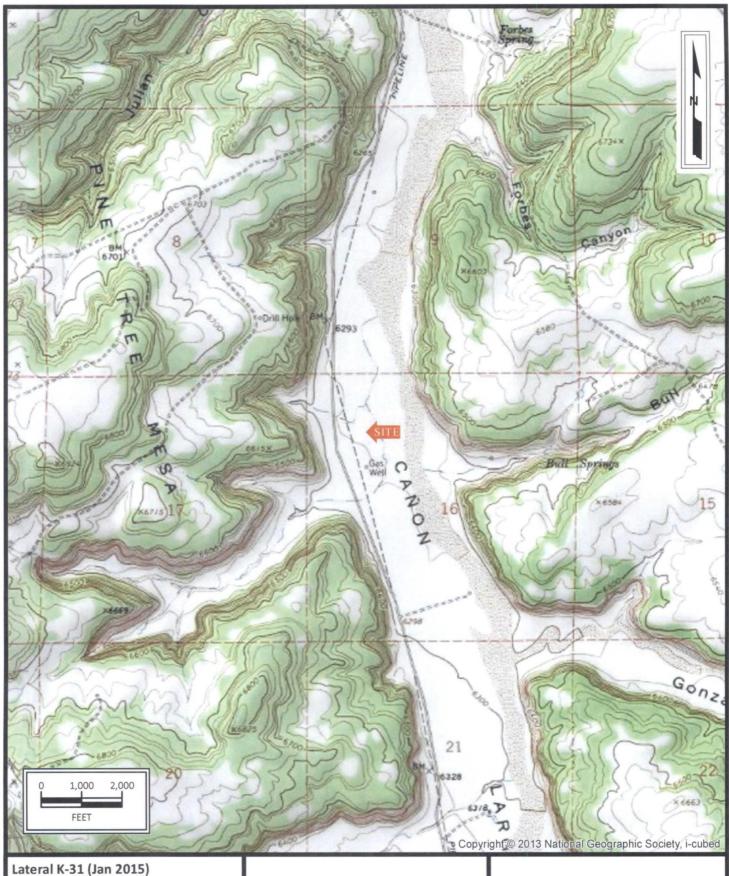
Enterprise Field Services, LLC Corrective Action Report Lateral K-31 January 2015 Pipeline Release February 26, 2015



laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client.

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Apex cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Apex's findings and recommendations are based solely upon data available to Apex at the time of these services.

This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the expressed written authorization of Enterprise and Apex. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and Apex's Agreement. The limitation of liability defined in the agreement is the aggregate limit of Apex's liability to the client.



Pipeline Release
NW1/4 Sec16 T25N R6W
Rural Rio Arriba County, New Mexico
36.4035806N, 107.4775972W



## Apex TITAN, Inc.

606 South Rio Grande, Suite A Aztec, NM 87410 Phone: (505) 334-5200 www.apexcos.com A Subsidiary of Apex Companies, LLC

# FIGURE 1 Topographic Map Gonzales Mesa, NM Quadrangle 1963

Project No. 7250415G002



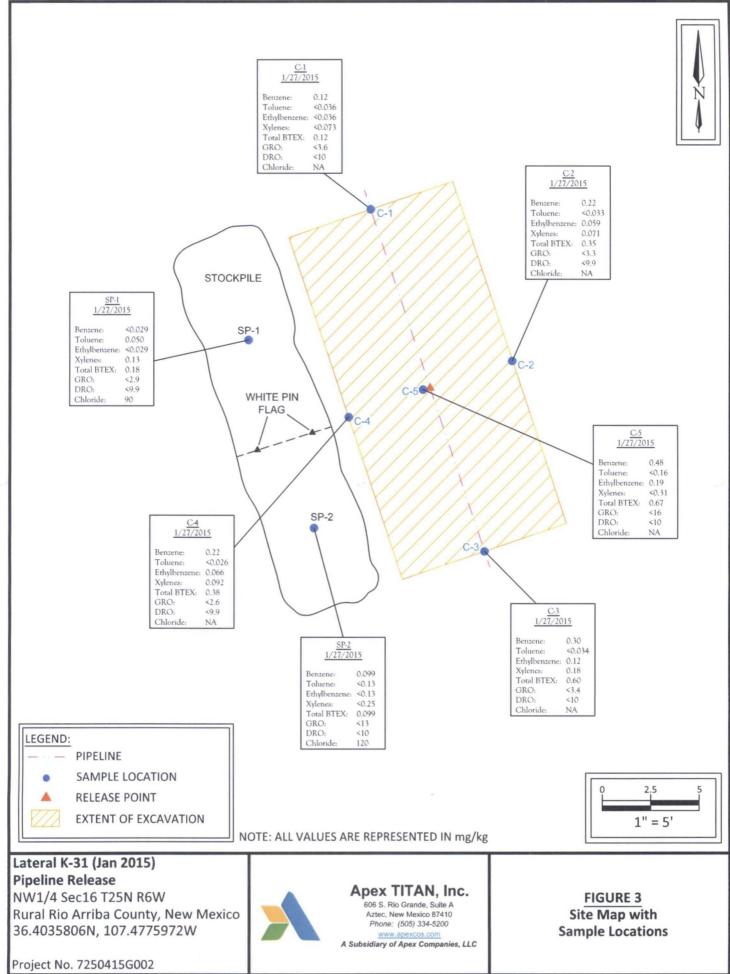
Lateral K-31 (Jan 2015) **Pipeline Release** NW1/4 Sec16 T25N R6W Rural Rio Arriba County, New Mexico 36.4035806N, 107.4775972W



Apex TITAN, Inc. 606 South Rio Grande, Suite A Aztec, NM 87410 Phone: (505) 334-5200 www.apexcos.com
A Subsidiary of Apex Companies, LLC

FIGURE 2 **Site Vicinity Map** 

Project No. 7250415G002





# Photograph 1

View of the final excavation, facing northwest



# Photograph 2

View of the final excavation, facing northwest.



# Photograph 3

View of the final excavation, facing north.





# Photograph 4

View of the final excavation, facing southeast.



# Photograph 5

View of the final excavation, facing southwest.



# Photograph 6

View of stockpile, facing north.



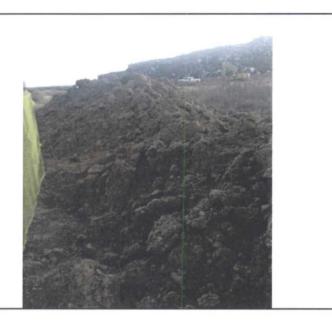




Lateral K-31 (Jan 2015) Pipeline Release

# Photograph 7

View of stockpile, facing southwest.





# TABLE 1 Lateral K-31 (Jan 2015) Pipeline Release SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	Chloride (mg/kg)					
		Natural Resources vision, Remediation	10	NE	NE	NE	50	10	00	NE					
PARTIE NAME OF	Excavation Confirmation Samples														
C-1	1/27/2015	2 to 5	0.12	< 0.036	<0.036	< 0.073	0.12	<3.6	<10	NA					
C-2	1/27/2015	2 to 5	0.22	< 0.033	0.059	0.071	0.35	<3.3	<9.9	NA					
C-3	1/27/2015	2 to 5	0.30	<0.034	0.12	0.18	0.60	<3.4	<10	NA					
C-4	1/27/2015	2 to 5	0.22	<0.026	0.066	0.092	0.38	<2.6	<9.9	NA					
C-5	1/27/2015	5	0.48	<0.16	0.19	<0.31	0.67	<16	<10	NA					
					Stockpile Samples			ETER-LEMINE 4							
SP-1	1/27/2015	Stockpile	<0.029	0.050	<0.029	0.13	0.18	<2.9	<9.9	90					
SP-2	1/27/2015	Stockpile	0.099	<0.13	<0.13	<0.25	0.099	<13	<10	120					

<sup>\*</sup>Concentrations are preliminary laboratory results and are subject to change upon issuance of the final laboratory report.

Note: Concentrations in **bold** and yellow exceed the applicable OCD Remediation Action Level

ND = Not Detected above the Laboratory Reporting Limits

NA = Not analyzed

NE = Not established



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

January 29, 2015

Heather Woods
APEX TITAN
606 S. Rio Grande Unit A
Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-31 (2015)

OrderNo.: 1501945

#### Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 1/28/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

Only

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1501945

Date Reported: 1/29/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: C-1

Project: Lateral K-31 (2015)

**Collection Date:** 1/27/2015 5:25:00 PM

Lab ID: 1501945-001 Matrix: MEOH (SOIL) Received Date: 1/28/2015 7:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	: WL
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/28/2015 12:13:07 PM	17437
Surr: DNOP	81.8	63.5-128	%REC	1	1/28/2015 12:13:07 PM	17437
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	3.6	mg/Kg	1	1/28/2015 4:07:31 PM	17419
Surr: BFB	95.1	80-120	%REC	1	1/28/2015 4:07:31 PM	17419
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	0.12	0.036	mg/Kg	1	1/28/2015 4:07:31 PM	17419
Toluene	ND	0.036	mg/Kg	1	1/28/2015 4:07:31 PM	17419
Ethylbenzene	ND	0.036	mg/Kg	1	1/28/2015 4:07:31 PM	17419
Xylenes, Total	ND	0.073	mg/Kg	1	1/28/2015 4:07:31 PM	17419
Surr: 4-Bromofluorobenzene	106	80-120	%REC	1	1/28/2015 4:07:31 PM	17419

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

Page 1 of 8

- ND Not Detected at the Reporting Limit Page
- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501945

Date Reported: 1/29/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** APEX TITAN

Client Sample ID: C-2

Project: Lateral K-31 (2015)

**Collection Date:** 1/27/2015 5:30:00 PM

**Lab ID:** 1501945-002

Matrix: MEOH (SOIL) Received Date: 1/28/2015 7:30:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	t: WL
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/28/2015 2:44:42 PM	17437
Surr: DNOP	79.2	63.5-128	%REC	1	1/28/2015 2:44:42 PM	17437
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	3.3	mg/Kg	1	1/28/2015 11:48:37 AM	1 17419
Surr: BFB	101	80-120	%REC	1	1/28/2015 11:48:37 AM	1 17419
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	0.22	0.033	mg/Kg	1	1/28/2015 11:48:37 AM	1 17419
Toluene	ND	0.033	mg/Kg	1	1/28/2015 11:48:37 AM	1 17419
Ethylbenzene	0.059	0.033	mg/Kg	1	1/28/2015 11:48:37 AM	1 17419
Xylenes, Total	0.071	0.065	mg/Kg	1	1/28/2015 11:48:37 AM	1 17419
Surr: 4-Bromofluorobenzene	109	80-120	%REC	1	1/28/2015 11:48:37 AM	1 17419

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

Page 2 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501945

Date Reported: 1/29/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: C-3

Project: Lateral K-31 (2015)

**Collection Date:** 1/27/2015 5:35:00 PM

**Lab ID:** 1501945-003 **Matrix:** MEOH (SOIL)

Received Date: 1/28/2015 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analysi	: WL
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/28/2015 3:06:22 PM	17437
Surr: DNOP	79.4	63.5-128	%REC	1	1/28/2015 3:06:22 PM	17437
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	3.4	mg/Kg	1	1/28/2015 12:17:25 PM	17419
Surr: BFB	108	80-120	%REC	1	1/28/2015 12:17:25 PM	17419
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	0.30	0.034	mg/Kg	1	1/28/2015 12:17:25 PM	17419
Toluene	ND	0.034	mg/Kg	1	1/28/2015 12:17:25 PM	17419
Ethylbenzene	0.12	0.034	mg/Kg	1	1/28/2015 12:17:25 PM	17419
Xylenes, Total	0.18	0.068	mg/Kg	1	1/28/2015 12:17:25 PM	17419
Surr: 4-Bromofluorobenzene	110	80-120	%REC	1	1/28/2015 12:17:25 PM	17419

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

Page 3 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

# Analytical Report Lab Order 1501945

Date Reported: 1/29/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN Client Sample ID: C-4

**Project:** Lateral K-31 (2015) **Collection Date:** 1/27/2015 5:40:00 PM

Lab ID: 1501945-004 Matrix: MEOH (SOIL) Received Date: 1/28/2015 7:30:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	t: WL
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/28/2015 3:28:12 PM	17437
Surr: DNOP	79.2	63.5-128	%REC	1	1/28/2015 3:28:12 PM	17437
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	2.6	mg/Kg	1	1/28/2015 12:46:13 PM	1 17419
Surr: BFB	109	80-120	%REC	1	1/28/2015 12:46:13 PM	1 17419
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	0.22	0.026	mg/Kg	1	1/28/2015 12:46:13 PM	1 17419
Toluene	ND	0.026	mg/Kg	1	1/28/2015 12:46:13 PM	1 17419
Ethylbenzene	0.066	0.026	mg/Kg	1	1/28/2015 12:46:13 PM	1 17419
Xylenes, Total	0.092	0.053	mg/Kg	1	1/28/2015 12:46:13 PM	1 17419
Surr: 4-Bromofluorobenzene	111	80-120	%REC	1	1/28/2015 12:46:13 PM	1 17419

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

Page 4 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501945

Date Reported: 1/29/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: C-5

Project: Lateral K-31 (2015)

**Collection Date:** 1/27/2015 5:45:00 PM

**Lab ID:** 1501945-005

Matrix: MEOH (SOIL) Received Date: 1/28/2015 7:30:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	t: WL
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/28/2015 3:49:52 PM	17437
Surr: DNOP	66.1	63.5-128	%REC	1	1/28/2015 3:49:52 PM	17437
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	16	mg/Kg	5	1/28/2015 10:51:12 AN	1 17419
Surr: BFB	103	80-120	%REC	5	1/28/2015 10:51:12 AN	17419
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	0.48	0.16	mg/Kg	5	1/28/2015 10:51:12 AN	17419
Toluene	ND	0.16	mg/Kg	5	1/28/2015 10:51:12 AN	17419
Ethylbenzene	0.19	0.16	mg/Kg	5	1/28/2015 10:51:12 AN	17419
Xylenes, Total	ND	0.31	mg/Kg	5	1/28/2015 10:51:12 AN	17419
Surr: 4-Bromofluorobenzene	110	80-120	%REC	5	1/28/2015 10:51:12 AM	17419

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

Page 5 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

# **QC SUMMARY REPORT**

# Hall Environmental Analysis Laboratory, Inc.

WO#: 1501945

29-Jan-15

Client:	APEX TI													
Project:	Lateral K	-31 (2015)												
Sample ID	MB-17437	SampTy	pe: MI	BLK	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics				
Client ID:	PBS	Batch	ID: 17	437	F	RunNo: 2	3939							
Prep Date:	1/28/2015	Analysis Da	ate: 1	/28/2015	5	SeqNo: 7	06379	Units: mg/k	(g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range Surr: DNOP	Organics (DRO)	ND 8.1	10	10.00		80.8	63.5	128						
Sample ID	LCS-17437	SampTy	/pe: LC	cs	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics				
Client ID:	LCSS	Batch	ID: 17	437	F	RunNo: 23939								
Prep Date:	1/28/2015	Analysis Da	ate: 1	/28/2015	5	SeqNo: 7	06380	Units: mg/Kg						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
	Organics (DRO)	42	10	50.00	0	84.6	67.8	130						
Surr: DNOP		4.7		5.000		93.7	63.5	128						
Sample ID	1501945-001AMS	SampTy	/pe: <b>M</b> \$	S	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics				
Client ID:	C-1	Batch	ID: 17	437	RunNo: 23939									
Prep Date:	1/28/2015	Analysis Da	ate: 1	/28/2015	\$	SeqNo: 7	06700	Units: mg/k	(g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range	Organics (DRO)	36	9.9	49.46	0	72.3	29.2	176						
Surr: DNOP		4.9		4.946		98.8	63.5	128						
Sample ID	1501945-001AMSI	D SampTy	/pe: <b>M</b> :	SD	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics				
Client ID:	C-1	Batch	ID: 17	437	F	RunNo: 23939								
Prep Date:	1/28/2015	Analysis Da	ate: 1	/28/2015	\$	SeqNo: 7	06701	Units: mg/k	(g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
_	Organics (DRO)	38	9.9	49.70	0	77.0	29.2	176	6.85	23				
Surr: DNOP		5.0		4.970		101	63.5	128	0	0				

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Reporting Detection Limit

Sample pH greater than 2.

RL

Page 6 of 8

# **JC SUMMARY REPORT**

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1501945

29-Jan-15

Client:

APEX TITAN

'roject:

Lateral K-31 (2015)

Sample ID MB-17419

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

Batch ID: 17419

RunNo: 23952

Prep Date: 1/27/2015

Analysis Date: 1/28/2015

SeqNo: 706468

Units: mg/Kg

Analyte

Result PQL 5.0

%REC

HighLimit

Qual

Basoline Range Organics (GRO)

ND

92.3

LowLimit

80

120

%RPD

Surr: BFB

Client ID: LCSS

920

1000

SPK value SPK Ref Val

Sample ID LCS-17419

SampType: LCS Batch ID: 17419 TestCode: EPA Method 8015D: Gasoline Range

RunNo: 23952

Analyte

1/27/2015

Analysis Date: 1/28/2015

PQL

SegNo: 706469 %REC LowLimit

Units: mg/Kg HighLimit

%RPD

**RPDLimit** 

Qual

iasoline Range Organics (GRO) Surr: BFB

Prep Date:

Result 27 SPK value SPK Ref Val 25.00

106 101

65.8

139

**RPDLimit** 

5.0 1000 1000 0

80

120

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.

Spike Recovery outside accepted recovery limits

Value above quantitation range E

Analyte detected below quantitation limits

RSD is greater than RSDlimit 0

RPD 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.

Reporting Detection Limit

Page 7 of 8

# **QC SUMMARY REPORT**

# Hall Environmental Analysis Laboratory, Inc.

1.1

1.000

WO#:

1501945

29-Jan-15

Client:

APEX TITAN

roject:

Surr: 4-Bromofluorobenzene

Lateral K-31 (2015)

	,	<u></u>										
Sample ID MB-17419	SampT	ype: ME	BLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch	n ID: 17	419	F	RunNo: 2							
Prep Date: 1/27/2015	Analysis D	ate: 1/	28/2015	S	SeqNo: 7	(g						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
enzene	ND	0.050										
oluene	ND	0.050										
Ethylbenzene	ND	0.050										
`(ylenes, Total	ND	0.10										
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120					
Sample ID LCS-17419	SampT	ype: LC	s	Tes	tCode: El							
Client ID: LCSS	Batch	n ID: 17	419	F	RunNo: 2	3952						
Prep Date: 1/27/2015	Analysis D	ate: 1/	28/2015	S	SeqNo: 7	06494	Units: mg/k	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
enzene	1.1	0.050	1.000	0	114	80	120					
oluene	1.1	0.050	1.000	0	108	80	120					
Ethylbenzene	1.1	0.050	1.000	0	112	80	120					
lylenes, Total	enes, Total 3.4 0.10 3.00				112	80	120					

111

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

Page 8 of 8



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerqve, NM 87105

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

# Sample Log-In Check List

RoptNo: 1 APEX AZTEC Work Order Number: 1501945 Client Name: Received by/date: Lindsay Mangin Logged By: 1/28/2015 7:30:00 AM Completed By: Lindsay Mangin 1/28/2015 8:15:43 AM 01/28/15 Reviewed By: Chain of Custody No Not Present ✓ Yes 1 Custody seals intact on sample bottles? No Not Present Yes V 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In No 🗌 NA. Yes V 4. Was an attempt made to cool the samples? No NA [ Were all samples received at a temperature of >0° C to 6.0°C No Sample(s) in proper container(s)? 7. Sufficient sample volume for indicated test(s)? No Yes V 8. Are samples (except VOA and ONG) properly preserved? NA . Yes . No V 9. Was preservative added to bottles? No VOA Vials V No Yes [ 10. VOA vials have zero headspace? Yes No V 11. Were any sample containers received broken? # of preserved bottles checked No 🗌 for pH: 12. Does paperwork match bottle labels? Yes V (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 13. Are matrices correctly identified on Chain of Custody? No V 14 is it clear what analyses were requested? No . Checked by: Yes V 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes No . NA V 16. Was client notified of all discrepancies with this order? Person Notified: Date Via: eMail Phone Fax In Person By Whom: Regarding: Client Instructions: Additional remarks: Cooler Information Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 1.3 Good Yes

																		C	HAIN	OF C	USTO	DY RE	CORD
Offic	APEX Office Location Azlec, NM Project Manager H. Woods Sampler's Name				Laboratory: Address: A  Contact: A  Phone:	Ibuq	y Ho	ve,	NN		al		ANAL	ASIS DESTED THAT S						Temp. of when rec	te:	5	
		ger H. I	Noc	305	>	PO/SO #: 3	1030	114	603	28	1-	1	_		200	11	//	/	11				
		loods /	Rai	nee	-Deechil	Sampler's Signa	ature	P						8021 R-	HEE	//	//	//	//				
	10. 1414GO		Proje	ect Na	ame ml K-31	(2015)	)		No/Ty	pe of C	Containe	ers		7	77	///	//		/				
Matrix	Date	Time	COED	Grab	Identifying Mai	rks of Sample(s)	Start	End	VOA	A/G 1 Lt.	250 ml	Glass	D/0	802	Bois		//	1				Lab Use C	
S	1/27/15	17-25			C-1			e e				1		1					15	OF	45	-00	Cl
5	1/2715	1730			C-2							1		VI	1							-00	2
5	1/27/15	1735			C-3							1		V	1							-00	2
	12715				C-4							1		VV								-08	
5	1/27/15	1745			C-5							1		VI	4							-00	5
200000000000000000000000000000000000000	round time	□ Nor					100%	Rush	Sar	ne	Da	4			1,100								
Relina	uished by uished by uished by	M. W. (Signature)	Our	2 1	27 K 20 Date: 21 Date:	Time: Receiv	red by:	(Signal)	iture)		0	Date Date Date	15	Time		Ato	rect Bi				u Fill	d Sen	rices
Matrix Contai		V - Wastewa			W - Water : A/G - Amber / O	S - Soil SD - Soil	lid L	- Liquie	d A	- Air Ba	ag	C -	Char	rcoal tube	SL-s	ludge	O - Oil						



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

OrderNo.: 1501946

January 29, 2015

Heather Woods

APEX TITAN

606 S. Rio Grande Unit A

Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-31 (2015)

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/28/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

andy

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1501946

Date Reported: 1/29/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: SP-1

**Project:** Lateral K-31 (2015)

**Collection Date:** 1/27/2015 5:51:00 PM

Lab ID: 1501946-001

Matrix: MEOH (SOIL) Received Date: 1/28/2015 7:30:00 AM

Analyses	rses Result		al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	: WL
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/28/2015 4:11:39 PM	17437
Surr: DNOP	80.7	63.5-128	%REC	1	1/28/2015 4:11:39 PM	17437
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	2.9	mg/Kg	1	1/28/2015 4:36:16 PM	17419
Surr: BFB	95.9	80-120	%REC	1	1/28/2015 4:36:16 PM	17419
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.029	mg/Kg	1	1/28/2015 4:36:16 PM	17419
Toluene	0.050	0.029	mg/Kg	1	1/28/2015 4:36:16 PM	17419
Ethylbenzene	ND	0.029	mg/Kg	1	1/28/2015 4:36:16 PM	17419
Xylenes, Total	0.13	0.057	mg/Kg	1	1/28/2015 4:36:16 PM	17419
Surr: 4-Bromofluorobenzene	106	80-120	%REC	1	1/28/2015 4:36:16 PM	17419
EPA METHOD 300.0: ANIONS					Analyst	: Igp
Chloride	90	30	mg/Kg	20	1/28/2015 10:52:44 AM	17443

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

Page 1 of 6

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501946

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/29/2015

CLIENT: APEX TITAN Client Sample ID: SP-2

 Project:
 Lateral K-31 (2015)
 Collection Date: 1/27/2015 5:58:00 PM

 Lab ID:
 1501946-002
 Matrix: MEOH (SOIL)
 Received Date: 1/28/2015 7:30:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS					Analy	st: WL
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/28/2015 4:33:14 PM	1 17437
Surr: DNOP	84.6	63.5-128	%REC	1	1/28/2015 4:33:14 PM	17437
EPA METHOD 8015D: GASOLINE RANGE					Analy	st: NSB
Gasoline Range Organics (GRO)	ND	13	mg/Kg	5	1/28/2015 11:19:56 A	M 17419
Surr: BFB	96.6	80-120	%REC	5	1/28/2015 11:19:56 A	M 17419
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	0.099	0.063	mg/Kg	5	1/28/2015 11:19:56 A	M 17419
Toluene	ND	0.13	mg/Kg	5	1/28/2015 11:19:56 A	M 17419
Ethylbenzene	ND	0.13	mg/Kg	5	1/28/2015 11:19:56 A	M 17419
Xylenes, Total	ND	0.25	mg/Kg	5	1/28/2015 11:19:56 A	M 17419
Surr: 4-Bromofluorobenzene	106	80-120	%REC	5	1/28/2015 11:19:56 A	M 17419
EPA METHOD 300.0: ANIONS					Analy	st: Igp
Chloride	120	30	mg/Kg	20	1/28/2015 11:05:09 A	M 17443

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

Page 2 of 6

- P Sample pH greater than 2.
- RL Reporting Detection Limit

# **QC SUMMARY REPORT**

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1501946

29-Jan-15

APEX TITAN

'roject:

Client:

Lateral K-31 (2015)

Sample ID MB-17443

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID:

PBS

Batch ID: 17443

RunNo: 23962

Prep Date: 1/28/2015

Sample ID LCS-17443

Analysis Date: 1/28/2015

SegNo: 706658

%REC

Units: mg/Kg

HighLimit

Qual

Analyte hloride

ND 1.5

SPK value SPK Ref Val

TestCode: EPA Method 300.0: Anions

LowLimit

LCSS Client ID:

SampType: LCS

RunNo: 23962

1/28/2015

Batch ID: 17443

Prep Date:

Analysis Date: 1/28/2015

SeqNo: 706659

Units: mg/Kg

SPK value SPK Ref Val

0

91.7

%RPD

Qual

Analyte

%REC LowLimit

HighLimit

**RPDLimit** 

;hloride

15.00

110

%RPD **RPDLimit** 

14

1.5

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range

Analyte detected below quantitation limits J

RSD is greater than RSDlimit O

R RPD outside accepted recovery limits

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Reporting Detection Limit

Sample pH greater than 2.

Page 3 of 6

# **JC SUMMARY REPORT**

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1501946

29-Jan-15

Client:

APEX TITAN

roject:

Lateral K-31 (2015)

Sample ID MB-17437

SampType: MBLK

TestCode: EPA Method 8015D: Diesel Range Organics

LowLimit

Client ID:

**PBS** 

Batch ID: 17437

RunNo: 23939

%REC

SPK value SPK Ref Val

10.00

Prep Date: 1/28/2015

Analysis Date: 1/28/2015

SeaNo: 706379

Units: mg/Kg

Analyte iesel Range Organics (DRO) ND 10

128

HighLimit

**RPDLimit** 

Qual

Qual

Surr: DNOP

8.1

TestCode: EPA Method 8015D: Diesel Range Organics

**RPDLimit** 

Sample ID LCS-17437

SampType: LCS

%RPD

%RPD

Client ID: LCSS Prep Date: 1/28/2015 Batch ID: 17437

RunNo: 23939

HighLimit

Analysis Date: 1/28/2015

SeqNo: 706380

Units: mg/Kg

130

128

PQL %REC Analyte Result SPK value SPK Ref Val LowLimit iesel Range Organics (DRO) 42 10 50.00 84.6 67.8 Surr: DNOP 4.7 5.000 93.7 63.5

#### Qualifiers:

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

Page 4 of 6

# **QC SUMMARY REPORT**

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1501946

29-Jan-15

Client:

APEX TITAN

'roject:

Analyte

Lateral K-31 (2015)

Sample ID MB-17419

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

**PBS** 

Batch ID: 17419

RunNo: 23952

%REC

Prep Date: 1/27/2015

Units: mg/Kg

Analysis Date: 1/28/2015 PQL

SeqNo: 706468

Qual

iasoline Range Organics (GRO)

ND 5.0

LowLimit

80

**RPDLimit** %RPD

Surr: BFB

920

1000

SPK value SPK Ref Val

92.3

120

HighLimit

Sample ID LCS-17419

SampType: LCS

Result

TestCode: EPA Method 8015D: Gasoline Range

RunNo: 23952

Prep Date: 1/27/2015

Client ID: LCSS

Batch ID: 17419

Analysis Date: 1/28/2015

SeqNo: 706469

Units: mg/Kg

Qual

Analyte asoline Range Organics (GRO) Result 27

PQL SPK value SPK Ref Val 5.0

%REC 0

65.8 80 HighLimit 139 120 %RPD **RPDLimit** 

LowLimit 25.00 106 Surr: BFB 1000 1000 101

#### )ualifiers:

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

Page 5 of 6

# **2C SUMMARY REPORT**

# Hall Environmental Analysis Laboratory, Inc.

1.0

WO#: **1501946** 

29-Jan-15

Client:

APEX TITAN

Project:

Surr: 4-Bromofluorobenzene

Lateral K-31 (2015)

Sample ID MB-17419 TestCode: EPA Method 8021B: Volatiles SampType: MBLK Batch ID: 17419 Client ID: PBS RunNo: 23952 Prep Date: 1/27/2015 Analysis Date: 1/28/2015 SeqNo: 706493 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual enzene ND 0.050 ND 0.050 oluene ND 0.050 Ethylbenzene ND 0.10 Yylenes, Total

104

80

120

Sample ID LCS-17419	SampType: LCS Tes			Code: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 17419			RunNo: 23952							
Prep Date: 1/27/2015	Analysis Date: 1/28/2015			SeqNo: <b>706494</b>			Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
enzene	1.1	0.050	1.000	0	114	80	120				
. Jluene	1.1	0.050	1.000	0	108	80	120				
Ethylbenzene	1.1	0.050	1.000	0	112	80	120				
ylenes, Total	3.4	0.10	3.000	0	112	80	120				
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120				

1.000

#### )ualifiers:

- \* 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

Page 6 of 6



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

RoptNo: 1 Work Order Number: 1501946 APEX AZTEC Client Name Received by/date 1/28/2015 7:30:00 AM Logged By: Lindsay Mangin 1/28/2015 8:21:00 AM Completed By: Lindsay Mangin 01/28/15 Reviewed By: Chain of Custody Not Present V Yes No . 1 Custody seals intact on sample bottles? No Not Present Yes V 2. Is Chain of Custody complete? Courier 3 How was the sample delivered? Log In No NA Yes 🗸 4. Was an attempt made to cool the samples? NA 5. Were all samples received at a temperature of >0° C to 6.0°C Yes V No 6. Sample(s) in proper container(s)? No 🗌 7. Sufficient sample volume for indicated test(s)? No 8. Are samples (except VOA and ONG) properly preserved? No V NA Yes 9. Was preservative added to bottles? No . No VOA Vials V Yes 10. VOA vials have zero headspace? Yes No V 11. Were any sample containers received broken? # of preserved bottles checked No 🗌 for pH: Yes V 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 13. Are matrices correctly identified on Chain of Custody? V No Yes 14 is it clear what analyses were requested? No 🗌 Checked by 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) No . NA V Yes 16. Was client notified of all discrepancies with this order? Date Person Notified: eMail Phone Fax In Person Via: By Whom: Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Condition Seal Intact | Seal No Seal Date Cooler No Temp °C 1.3 Good Yes

							W. W.									CHAIN OF COSTO	DI RECOND
Offic Proje Samp	PEX e Location ect Manaç der's Name	ger	Zte H.n	Joa	45	Laboratory: Address: Contact: _ Phone: PO/SO #: _ Sampler's Sign	Albu A ature	gue mag		11 (00	1 28	,		ANALYSIS REQUESTED  (ANICACIDED)  ANALYSIS REQUESTED		Lab use Due Da  Temp. of when rec  1 2  Page	ite:
Proj. N			Proje	ect Na						/pe of C	-	_		802/ BTEX SUIS TPH			
Matrix	Date	Time	Comp	Grab	Identifying Mai	rks of Sample(s)	Start	End	VOA	AVG 1 LL.	250 ml	Glass	P/0	8 25		Lab Sample ID (	
5	1/27/15	1751			SP-	1						1		11,		150194	6-001
S	1/27/15	<b>П58</b>			Sp-8	2						1		111			-002
	127/15	-															
					1-16-75												
	round time	□ No		-	10/2		100%			re!		Doto		Time: NOTEC:			
Relino	quished by ( quished by ( quished by (	Signature (Signature	)		27 15 2 Date: Date:	Firme: Received	ved by:	(Signa	ature)	01	bo	pate pare pate Date	15	Time: NOTES:	Direct Bill total To	Il to Enterprise Flom Long	ield Senleg
Matrix Contai	wv	V - Wastewa	ater		W - Water S A/G - Amber / O	S - Soil SD - So	olid I	- Liqui		- Air Ba	ag outh			urcoal tube SL - sludge	O - Oil		

OLL BUILD. DIE DIVI. S

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

Name of Company: Enterprise Field Services LLC

State of New Mexico **Energy Minerals and Natural** Resources

APR 1 3 2015

Form C-141 Revised August 8, 2011

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

Initial Report

Santa Fe. NM 87505

**Release Notification and Corrective Action** 

**OPERATOR** 

Contact: Thomas Long

Oil Conservation Division 1220 South St. Francis Dr.

Address: 614 Reilly Ave, Farmington, NM 87401 Telephone No. 505-599-2286 Facility Name: Lybrook Station Facility Type: NGL Pumping Station Mineral Owner: BLM API No. Surface Owner: Private LOCATION OF RELEASE Section Feet from North/South Feet from East West **Unit Letter** Township Range County C 14 23N **7W** the the Line Rio Arriba Line 123 2202 Latitude 36.232608 Longitude -107.546006 NATURE OF RELEASE Volume of Release 23.74 Type of Release: Natural Gas Liquids Volume Recovered: None BBLS Source of Release: Cracked weld on main suction header Date and Hour of Occurrence: Date and Hour of Discovery: 1/19/2014 @ 12:30 p.m. 1/19/2014 @ 11:30 a.m. If YES, To Whom? Courtesy Notification - Cory Smith, NMOCD, NRC Was Immediate Notice Given? Case # 1106616 ☐ Yes ☐ No ☒ Not Required By Whom? Thomas Long Date and Hour 1/26/2015 @ 7:19 a.m. Was a Watercourse Reached? If YES, Volume Impacting the Watercourse ☐ Yes ☒ No If a Watercourse was Impacted, Describe Fully,\* Describe Cause of Problem and Remedial Action: On January 19, 2015, technicians were completing a station check and discovered a gas odor in the control building. The technicians began monitoring the conduit raceways and conduit floor pits. High LEL readings were detected in the conduit. Hydro-excavating of potholes at the facility were initiated to determine the source of the high LELs. The hydroexcavating was directed to the area of highest LEL readings. Hydro- excavating and mechanical excavating determined the release was on the NGL piping to the main suction header. The piping was isolated, depressurized and lock out tag out was applied. Describe Area Affected and Cleanup Action: Three areas of contamination were excavated during investigation and repair activities. Approximately 372 cubic yards of hydrocarbon impacted soil was mechanically excavated and approximately 520 barrels soils were hydroexcavated. All soils were disposed of at an approved New Mexico Oil Conservation Division land farm facility. A third party corrective action report is included with this "Final" C-141. 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. OIL CONSERVATION DIVISION Signature: Printed Name: Jon E. Fields Approved by Environmental Specialist: Approval Date: **Expiration Date** Title: Director, Environmental E-mail Address:iefields@eprod.com Conditions of Approval: Attached Phone: (713)381-6684 #NOS 1507248615 \* Attach Additional Sheets If Necessary

APR 1 3 2015

## Lybrook Pump Station Release Report

Section 14, Township 23N, Range 7W N36.23255, W107.54605 Rio Arriba County, New Mexico March 16, 2015

#### Prepared for:

Enterprise Products Operating, LLC 614 Reilly Avenue Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC 501 Airport Drive, Suite 205 Farmington, New Mexico 87401



### Enterprise Products Operating, LLC Lybrook Pump Station Release Report

Prepared for:

Enterprise Products Operating, LLC 614 Reilly Avenue Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC 501 Airport Drive, Suite 205 Farmington, New Mexico 87401

Deborah Watson, PG, Geologist

Debrah Water

Reviewed by:

Russell Knight, PG, Principal Hydrogeologist

#### **Table of Contents**

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3	NMOCD Ranking	2
4	Field Activities	2
5	Soil Sampling	3
6	Conclusions	3
7	Closure and Limitations	4

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Table 2 Soil Sampling Results-VOCs, Benzene, Total BTEX, and TPH

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Appendix A Executed C-138 Solid Waste Acceptance Forms

Appendix B Photograph Log

Appendix C Analytical Laboratory Reports

#### 1 Introduction

The Enterprise Products Operating, LLC (Enterprise) Lybrook Pump Station release site is located in Unit Letter C, Section 14, Township 23N, Range 7W in Rio Arriba County, New Mexico. The Lybrook Pump Station pumps natural gas liquids (NGL) and refined petroleum products to various distribution centers via the Mid-America Pipeline System. The facility is operated by Enterprise on behalf of the Mid-America Pipeline Company.

On January 19, 2015, technicians were completing a station check and discovered a gas odor in the control building. Search activities continued at the site until the release point was located on February 4, 2015. A release of 23.74 barrels (bbl) of natural gas liquids (NGL) occurred at a T-connection along the 18-inch NGL pipeline that feeds the main header. During search activities, three areas of hydrocarbon impacted soils were identified and remediated, resulting in three separate areas of excavation within the facility. Site work included repair of the leaking pipeline as well as maintenance work along exposed pipelines within the open excavations.

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

#### 2 Release Summary

Site Name – Lybrook Pump Station

Location - Unit Letter C (NE/NW), Section 14, Township 23N, Range 7W

Location Latitude/Longitude - N36.23255 and W107.54605, respectively

Release Latitude/Longitude - N36.23270 and W107.54594, respectively

Land Jurisdiction - Private

Date Release Discovered – January 19, 2015

Agency Notification – New Mexico Oil Conservation Division (NMOCD) and National Response Center (NRC) Case #1106616 (January 26, 2015)

Agency Jurisdiction - NMOCD

Diameter of pipeline - 18-inch and 12-inch

Source of Release - NGL piping feeding main suction header, T-connection

Release Contents - NGL (Y-Grade)

Release Volume - 23.74 bbl

NMOCD Ranking - 10

Date(s) of Rule Engineering, LLC (Rule) Field Work – January 28 and February 4, 2015

**Subcontractor(s)** – Strike, LLC (mechanical excavation) and Nelson Revegetation Field Services (hydro-excavation)

Disposal Facility – Envirotech Land Farm (Permit #NM-01-011)

Amount of Contaminated Soil Excavated/Disposed - 372 cubic yards and 520 bbl

#### 3 NMOCD Ranking

In accordance with NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 10 (Table 1). Based on the ranking score of 10, action levels for remediated soils at the site are as follows: 10 mg/kg benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 mg/kg total petroleum hydrocarbons (TPH).

Depth to groundwater at the site was estimated to be greater than 100 feet below ground surface (bgs) based on the elevation differential (286 feet) between the release location and the wash in Escrito Canyon (approximately two miles to the east).

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. Water well SJ 01507, located approximately 3,500 feet west of the release location has a recorded depth to water of 900 feet bgs. Escrito Spring is located approximately one mile west of the release location.

Three unnamed washes, all of which ultimately drain to the wash in Escrito Canyon, are located approximately 673 feet northeast, 715 feet southeast, and 770 feet northwest of the release location.

#### 4 Field Activities

On January 19, 2015, technicians were completing a station check and smelled gas in the control building. The technicians then began monitoring the conduit raceways and conduit floor pits to determine which conduit was leaking, the point of release was not identified. On January 19, 2015, a crew was dispatched to conduct a nitrogen purge of the conduits in an attempt to find the origin of the gas leak, which proved unsuccessful. During the weeks of January 19 and 26, 2015, the crew began hydro-excavating potholes in the facility and taking lower explosive limit (LEL) readings in an attempt to determine the location of the release. Crews systematically searched for the point of release from January 19 through February 4, 2015.

Based on LEL readings, excavation began below an 8-inch blue line containing refined products within the northern half of the facility. While excavating the pipeline, hydrocarbon impacted soils were discovered but no release point was identified within this area (Excavation A). During the weeks of January 19 and 26, 2015, hydrocarbon impacted soils were removed for disposal via hydro-excavation by Nelson Revegetation and mechanical excavation by Strike. The area of Excavation A measured approximately 19 feet x 12.5 feet x 6 (to 8) feet in depth.

Also during the week of January 19, 2015, hydro-excavation continued north of Excavation A in an area which also registered high LELs in an attempt to locate the gas release. While uncovering the pipeline, hydrocarbon impacted soils were again encountered. No release point was located within this area, Excavation B. Impacted

soils from Excavation B were also removed for disposal using hydro-excavation and mechanical excavation, resulting in an area of excavation measuring approximately 14 feet x 10 feet x 4 (to 5) feet in depth.

On January 24, 2015, it was determined that the leak was on the NGL pipeline feeding the main header. Excavation activities were then focused within this area (Excavation C) just east of Excavation A and south of Excavation B. Hydrocarbon impacted soils within the release area were removed via hydro-excavation and mechanical excavation. The release point, located on February 4, 2015, occurred along a T-connection between an 18-inch and 12-inch pipeline. The final extent of Excavation C measured approximately 21 feet x 14 feet x 8 feet in depth. Repairs were made to the leaking pipeline. Other maintenance was also performed along exposed lines within Excavation A. Approximately 372 cubic yards and 520 bbl of hydrocarbon impacted soils were removed from Excavations A, B, and C. Figures 3, 4, and 5 provide the locations and results of the soil samples collected. Copies of the executed C-138 Solid Waste Acceptance Forms are included in Appendix A. A photograph log is included in Appendix B.

#### 5 Soil Sampling

Rule collected confirmation soil samples from the sidewalls and base of each of the excavations. Soil samples SC-1 through SC-5 (Excavation A) and SC-6 through SC-10 (Excavation B) were collected on January 28, 2015. Soil samples SC-11 through SC-15 (Excavation C) were collected on February 4, 2015. Each soil sample was collected as a composite of five sub-samples from within the sample locations.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B and TPH for gasoline range organics (GRO) and diesel range organics (DRO) per USEPA Method 8015D. Laboratory analytical results are summarized in Table 2, and the analytical laboratory reports are included in Appendix C.

A portion of each composite soil sample was also field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photo-ionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Field screening results are summarized in Table 2.

#### 6 Conclusions

The release of 23.74 bbl of NGL occurred along an 18-inch NGL pipeline at the Lybrook Pump Station. During investigation activities, hydrocarbon impacted soils were encountered at the site within three areas, remediation included removal of impacted soils at the three areas; Excavations A, B, and C. Five confirmation soil samples were collected from the sidewalls and base of each excavation. Excavations A and B were

#### Lybrook Pump Station Release Report

sampled on January 28, 2015, and Excavation C was sampled on February 4, 2015. The final excavation extent for Excavation A measured approximately 19 feet x 12.5 feet x 6 (to 8) feet in depth, Excavation B measured approximately 14 feet x 10 feet x 4 (to 5), and Excavation C measured approximately 21 feet x 14 feet x 8 feet in depth.

Laboratory analytical results for soil confirmation samples (SC-1 through SC-15) reported benzene and total BTEX concentrations below the NMOCD action levels of 10 mg/kg and 50 mg/kg, respectively. All soil confirmation samples reported TPH concentrations below the NMOCD action level of 1,000 mg/kg. Action levels are based on a NMOCD site ranking of 10.

Based on laboratory analytical results, no further work is recommended.

#### 7 Closure and Limitations

This report has been prepared for the exclusive use of Enterprise and is subject to the terms, conditions and limitations stated in Rule's proposal, the report, and Rule's Service Agreement with Enterprise. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.

### **Tables**

Table 1. NMOCD Site Ranking Determination Lybrook Pump Station Rio Arriba County, New Mexico Enterprise Products Operating, LLC

Ranking Criteria	Ranking	Site-Based	Basis for Determination	Data
	Score	Ranking Score		Sources
Depth to Groundwater				
<50 feet	20		Elevation differential between location and significant wash in Escrito Canyon east of the location is 286 feet.	NMOCD Online database,
50-99 feet	10	0	Location is at a higher elevation. Enterprise Permit GW-337 lists depth to water at greater than 600 feet. Williams Permit GW-047 lists depth to groundwater at	Lybrook Quadrangle, Google Earth, and Visual Inspection
>100 feet	0		greater than 100 feet.	
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes) 0 (No)	0	No water source or recorded water wells within 1,000 feet radius of location. Escrito Spring is located 1 mile west of the location. Water well SJ 01507, located approximately 3,500 feet west of location, has a reported depth to water of 900 feet below ground surface.	NMOSE NMWRRS, Lybrook Quadrangle, Google Earth, and Visual Inspection
Distance to Confee a Water Barb				
Distance to Surface Water Body				
<200 horizontal feet	20		Small drainages located at 673 feet NE, 715 feet SE,	Lybrook Quadrangle,
200 to 1,000 horizontal feet	10	10	and 770 feet NW of the location.	Google Earth, and Visual
>1,000 horizontal feet	0			Inspection
Site Based Total Ranki	ng Score	10		

Table 2. Soil Sampling Results-VOCs, Benzene, Total BTEX, and TPH Lybrook Pump Station
Rio Arriba County, New Mexico
Enterprise Products Operating, LLC

				Sample Depth	VOCs (PID)	Benzene	Total BTEX	TPH-GRO	TPH-DRO
Sample ID	Date	Excavation	Location	(ft bgs)	(ppm)	(mg/kg)	(mg/kg)	(mg	/kg)
				OCD Action Levels*	100	10	50	1,0	000
SC-1	Jan 28, 15	Α	North Wall	0 to 6	2.8	< 0.049	<0.246	<4.9	<9.9
SC-2	Jan 28, 15	Α	South Wall	0 to 8	1.4	< 0.049	<0.246	<4.9	<9.9
SC-3	Jan 28, 15	А	East Wall	0 to 8	17.5	<0.048	<0.240	<4.8	<9.8
SC-4	Jan 28, 15	Α	West Wall	0 to 8	1.8	< 0.047	<0.236	<4.7	<9.9
SC-5	Jan 28, 15	Α	Base	6 to 8	3.0	<0.048	<0.240	<4.8	<10
SC-6	Jan 28, 15	В	North Wall	0 to 5	1.2	< 0.050	<0.249	<5.0	<9.9
SC-7	Jan 28, 15	В	South Wall	0 to 5	5.1	<0.049	<0.245	<4.9	<9.9
SC-8	Jan 28, 15	В	East Wall	0 to 4	8.0	<0.048	0.066	<4.8	<9.9
SC-9	Jan 28, 15	В	West Wall	0 to 5	1.3	< 0.047	<0.236	<4.7	<10
SC-10	Jan 28, 15	В	Base	4 to 5	33.5	<0.047	<0.235	<4.7	32
SC-11	Feb 04, 15	С	North Wall	0 to 8	23.4	< 0.049	0.16	<4.9	<9.8
SC-12	Feb 04, 15	С	South Wall	0 to 8	1,805	0.13	10.8	150	<10
SC-13	Feb 04, 15	С	East Wall	0 to 8	8.6	<0.050	0.24	<5.0	<10
SC-14	Feb 04, 15	С	West Wall	0 to 8	2,717	0.61	20.1	230	<9.9
SC-15	Feb 04, 15	С	Base	8	905	0.76	13.9	220	15

Notes: VOCs - volatile organic compounds

PID - photo-ionization detector

ft bgs - feet below ground surface

ppm - parts per million

mg/kg - milligrams/kilograms

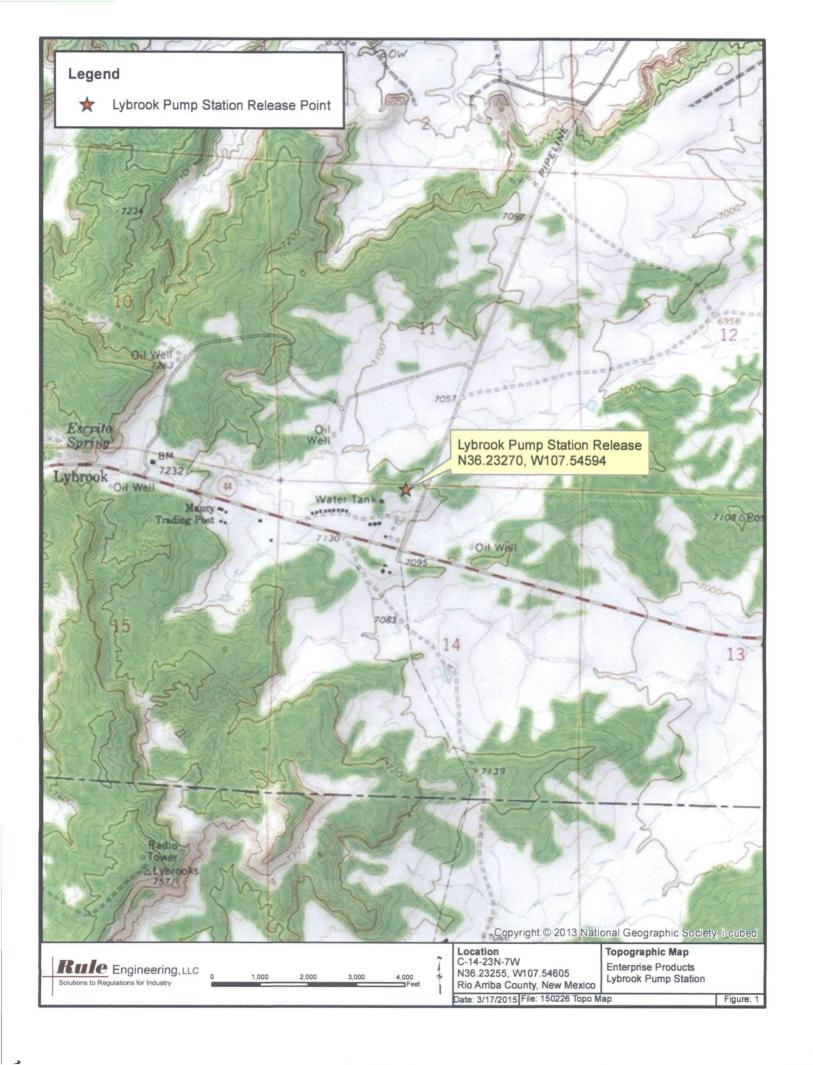
BTEX - benzene, toluene, ethylbenzene, and xylenes

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

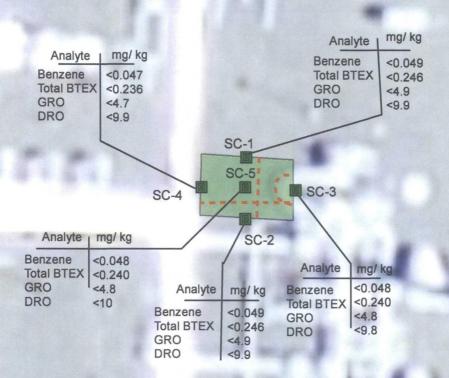
TPH-DRO - total petroleum hydrocarbons-diesel range organics

\*NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993)

## **Figures**







#### Legend



Soil Sample



Notes:

BTEX= Benzene, Toluene, Ethylbenzene, and Xylenes GRO= Gasoline Range Organics DRO= Diesel Range Organics

All samples are composite samples. Samples collected on January 28, 2015.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Rule Engineering, LLC

Solutions to Regulations for Industry

10 20 30 40 Rio Arriba County

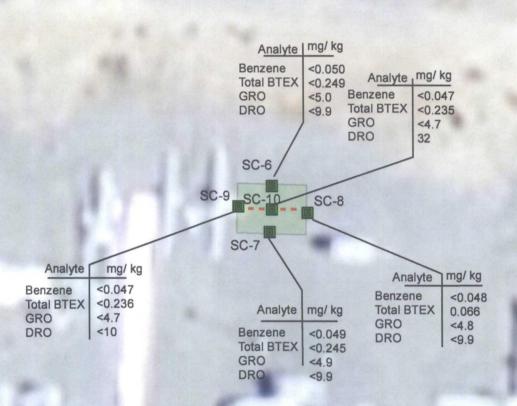
Peet 2/37/2014

Location C-14-23N-7W N36.23255, W107.54605 Rio Arriba County, New Mexico

Soil Analytical Map Excavation A Enterprise Products Lybrook Pump Station

Date: 3/17/2015 File: 150226 Soil Analytical Map.pdf

Figure: 3



#### Legend

Soil Sample

Pipeline

Excavation

Notes:

BTEX= Benzene, Toluene, Ethylbenzene, and Xylenes

GRO= Gasoline Range Organics

DRO= Diesel Range Organics

All samples are composite samples. Samples collected January 28, 2015.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

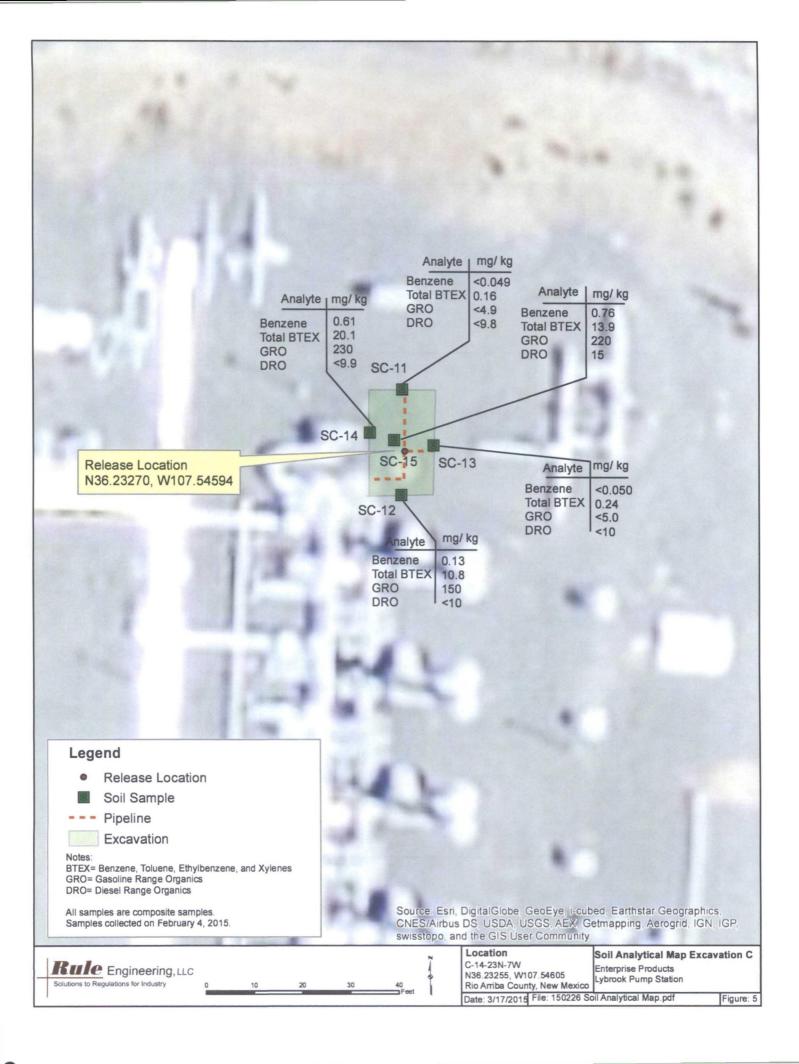
Rule Engineering, LLC Solutions to Regulations for Industry

Location C-14-23N-7W N36.23255, W107.54605 Rio Arriba County, New Mexico

Soil Analytical Map Excavation B Enterprise Products Lybrook Pump Station

Date: 3/17/2015 File: 150226 Soil Analytical Map.pdf

Figure: 4



# Appendix A Executed C-138 Solid Waste Acceptance Form

V-317

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-138
Revised August 1, 2011
\*Surface Waste Management Facility Operator

\*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE
1. Generator Name and Address: Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401
2. Originating Site: Lybrook Station
3. Location of Material (Street Address, City, State or ULSTR): Unit Letter C, Section 14, T23N, R7W; 36.232608, -107.546006
4. Source and Description of Weste: Hydrocarbon impacted soils associated with a release from a natural gas pipeline.  5. Estimated Volume 20 yd³ bbls Known Volume (to be entered by the operator at the end of the haul)
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS
I, Thomas Long representative or authorized agent for Enterprise Field Services, LLC do hereby  COMPANY NAME  certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)
RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.  Operator Use Only: Waste Acceptance Frequency  Monthly  Weekly  Per Load
RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)
GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS
I, 1-21-15 representative for Enterprise Field Services, LLC authorize Envirotech, Inc. to Generator Signature complete the required testing/sign the Generator Waste Testing Certification.
I, Representative for Envirotech, Inc. do hereby certify that representative samples of the old field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
6. Transporter: TBD NRE, Paul & Son 3
OCD Permitted Surface Waste Management Facility  Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility * Permit #: NM 01-0011  Address of Facility: Hilltop, NM
Method of Treatment and/or Disposal:  Evaporation Injection Treating Plant Landfarm Landfill Other
Waste Acceptance Status:  APPROVED  DENIED (Must Be Maintained As Permanent Record)
PRINT NAME: Kendra Runny TITLE: Waste Coordinator, ATE: 1-21-15  SIGNATURE Surface Waste Management Facility Authorized Agent  TELEPHONE NO.: 505-632-0615

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 \*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

REQUEST FOR ATTROVAL TO ACCELT SOLID WASTE
<ol> <li>Generator Name and Address:         Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401     </li> </ol>
2. Originating Site: Lybrook Station  Teb 2015
3. Location of Material (Street Address, City, State or ULSTR): Unit Letter C, Section 14, T23N, R7W; 36.232608, -107.546006
4. Source and Description of Waste: Hydrocarbon impacted soils associated with a release from a natural gas pipeline.  5. Estimated Volume 20 yd³ bbls Known Volume (to be entered by the operator at the end of the haul) yd³ / bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS
I, Thomas Long representative or authorized agent for Enterprise Field Services, LLC do hereby  PRINT & SIGN NAME  COMPANY NAME  certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)
RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.  **Operator Use Only: Waste Acceptance Frequency   Monthly   Weekly   Per Load
RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)
GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS
I, 1-21-15, representative for Enterprise Field Services, LLC authorize Envirotech, Inc. to Generator Signature complete the required testing/sign the Generator Waste Testing Certification.
Complete the required testing sign die Generator waste resting community.
frepresentative for Envirotech, Inc. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
6. Transporter: FBD, NRE, Cayber, CNS
OCD Permitted Surface Waste Management Facility  Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility * Permit #: NM 01-0011  Address of Facility: Hilltop, NM
Method of Treatment and/or Disposal:  Evaporation Injection Treating Plant Landfarm Dandfarm Other
Waste Acceptance Status:  DENIED (Must Be Maintained As Permanent Record)
PRINT NAME: Kendra Runung TITLE: Waste Coordinater DATE: 2-2-15
SIGNATURE: TELEPHONE NO.: 505-632-0615

## Appendix B Photograph Log

#### Photograph Log Lybrook Pump Station Enterprise Products

Photograph #1

Client: Enterprise Products

Site Name:

Lybrook Pump Station

Date Photo Taken: January 28, 2015

> Location: N36.23255, W107.54605

C-14-23N-07W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson



Description: Excavation A, facing E, looking at excavation following removal of petroleum impacted soils discovered while searching for the release location. Excavation measured approximately 19 feet x 12.5 feet x 6 (to 8) feet in depth.

Photograph #2

Client: Enterprise Products

Site Name:

Lybrook Pump Station

Date Photo Taken: January 28, 2015

> Location: N36.23255, W107.54605

C-14-23N-07W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson



Description: Excavation A, facing WNW, looking at excavation following remediation on January 28, 2015.

#### Photograph Log Lybrook Pump Station Enterprise Products

Photograph #3

Client: Enterprise Products

Site Name:

Lybrook Pump Station

Date Photo Taken: January 28, 2015

> Location: N36.23255, W107.54605

C-14-23N-07W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson



Description: Excavation B, facing W, looking at excavation following removal of petroleum impacted soils discovered while searching for the release location. Final area of excavation measured 14 feet x 10 feet x 4 (to 5) feet in depth

Photograph #4

Client: Enterprise Products

Site Name:

Lybrook Pump Station

Date Photo Taken: January 28, 2015

> Location: N36.23255, W107.54605

C-14-23N-07W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson



Description: Excavation B, facing NW, looking at excavation following remediation on January 28, 2015.

#### Photograph Log Lybrook Pump Station Enterprise Products

Photograph #5

Client: Enterprise Products

Site Name:

Lybrook Pump Station

Date Photo Taken: February 4, 2015

> Location: N36.23255, W107.54605

C-14-23N-07W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson Release Location N36.23270, W107.54594

Description: Excavation C, facing S, looking at release point along a T-connection between the 18-inch and 12-inch pipeline. Final area of excavation measured 21 feet x 14 feet x 8 feet in depth.

#### Photograph #6

Client: Enterprise Products

Site Name:

Lybrook Pump Station

Date Photo Taken: February 4, 2015

> Location: N36.23255, W107.54605

C-14-23N-07W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson



Description: Excavation C, facing E, looking at excavation following remediation on February 4, 2015.

## Appendix C Analytical Laboratory Reports



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

OrderNo.: 1501A12

February 02, 2015

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

FAX

RE: Enterprise Lybrook Pump Station

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 1/29/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

andyl

4901 Hawkins NE

Albuquerque, NM 87109

#### **Analytical Report**

#### Lab Order 1501A12

Date Reported: 2/2/2015

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-1

Project: Enterprise Lybrook Pump Station Collection Date: 1/28/2015 11:55:00 AM

Lab ID: 1501A12-001 Matrix: SOIL Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/29/2015 9:24:25 PM	17457
Surr: DNOP	79.6	63.5-128	%REC	1	1/29/2015 9:24:25 PM	17457
EPA METHOD 8015D: GASOLINE RAM	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/30/2015 11:23:44 AM	17463
Surr: BFB	94.8	80-120	%REC	1	1/30/2015 11:23:44 AM	17463
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	1/30/2015 11:23:44 AM	17463
Toluene	ND	0.049	mg/Kg	1	1/30/2015 11:23:44 AM	17463
Ethylbenzene	ND	0.049	mg/Kg	1	1/30/2015 11:23:44 AM	17463
Xylenes, Total	ND	0.099	mg/Kg	1	1/30/2015 11:23:44 AM	17463
Surr: 4-Bromofluorobenzene	106	80-120	%REC	1	1/30/2015 11:23:44 AM	17463

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

Page 1 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### **Analytical Report**

#### Lab Order 1501A12

Date Reported: 2/2/2015

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: Enterprise Lybrook Pump Station

**Collection Date:** 1/28/2015 11:45:00 AM

**Lab ID:** 1501A12-002

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	: BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/29/2015 10:29:05 PM	1 17457
Surr: DNOP	84.5	63.5-128	%REC	1	1/29/2015 10:29:05 PM	1 17457
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/30/2015 12:50:01 PM	1 17463
Surr: BFB	96.8	80-120	%REC	1	1/30/2015 12:50:01 PM	1 17463
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.049	mg/Kg	1	1/30/2015 12:50:01 PM	1 17463
Toluene	ND	0.049	mg/Kg	1	1/30/2015 12:50:01 PM	1 17463
Ethylbenzene	ND	0.049	mg/Kg	1	1/30/2015 12:50:01 PM	1 17463
Xylenes, Total	ND	0.099	mg/Kg	1	1/30/2015 12:50:01 PM	1 17463
Surr: 4-Bromofluorobenzene	109	80-120	%REC	1	1/30/2015 12:50:01 PM	1 17463

Matrix: SOIL

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

Page 2 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Analytical Report Lab Order 1501A12

Date Reported: 2/2/2015

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT: Rule Engineering LLC** 

Client Sample ID: SC-3

Project:Enterprise Lybrook Pump StationCollection Date: 1/28/2015 11:50:00 AMLab ID:1501A12-003Matrix: SOILReceived Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/29/2015 10:50:43 PM	17457
Surr: DNOP	84.2	63.5-128	%REC	1	1/29/2015 10:50:43 PM	17457
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/30/2015 2:16:12 PM	17463
Surr: BFB	96.4	80-120	%REC	1	1/30/2015 2:16:12 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.048	mg/Kg	1	1/30/2015 2:16:12 PM	17463
Toluene	ND	0.048	mg/Kg	1	1/30/2015 2:16:12 PM	17463
Ethylbenzene	ND	0.048	mg/Kg	1	1/30/2015 2:16:12 PM	17463
Xylenes, Total	ND	0.096	mg/Kg	1	1/30/2015 2:16:12 PM	17463
Surr: 4-Bromofluorobenzene	109	80-120	%REC	1	1/30/2015 2:16:12 PM	17463

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

Page 3 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### **Analytical Report**

#### Lab Order 1501A12

Date Reported: 2/2/2015

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-4

Project:

Enterprise Lybrook Pump Station

**Collection Date:** 1/28/2015 11:40:00 AM

Lab ID:

1501A12-004

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/29/2015 11:12:04 PM	17457
Surr: DNOP	83.6	63.5-128	%REC	1	1/29/2015 11:12:04 PM	17457
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/30/2015 2:44:56 PM	17463
Surr: BFB	95.7	80-120	%REC	1	1/30/2015 2:44:56 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.047	mg/Kg	1	1/30/2015 2:44:56 PM	17463
Toluene	ND	0.047	mg/Kg	1	1/30/2015 2:44:56 PM	17463
Ethylbenzene	ND	0.047	mg/Kg	1	1/30/2015 2:44:56 PM	17463
Xylenes, Total	ND	0.095	mg/Kg	1	1/30/2015 2:44:56 PM	17463
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	1/30/2015 2:44:56 PM	17463

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

Page 4 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### **Analytical Report**

#### Lab Order 1501A12

Date Reported: 2/2/2015

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-5

Project: Enterprise Lybrook Pump Station

Collection Date: 1/28/2015 12:00:00 PM

**Lab ID:** 1501A12-005

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/29/2015 11:33:24 PM	17457
Surr: DNOP	84.7	63.5-128	%REC	1	1/29/2015 11:33:24 PM	17457
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/30/2015 10:24:17 PM	17463
Surr: BFB	96.1	80-120	%REC	1	1/30/2015 10:24:17 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.048	mg/Kg	1	1/30/2015 10:24:17 PM	17463
Toluene	ND	0.048	mg/Kg	1	1/30/2015 10:24:17 PM	17463
Ethylbenzene	ND	0.048	mg/Kg	1	1/30/2015 10:24:17 PM	17463
Xylenes, Total	ND	0.096	mg/Kg	1	1/30/2015 10:24:17 PM	17463
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	1/30/2015 10:24:17 PM	17463

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

Page 5 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### **QC SUMMARY REPORT**

#### Hall Environmental Analysis Laboratory, Inc.

WO#:

1501A12

02-Feb-15

Client:

Rule Engineering LLC

**Project:** 

Enterprise Lybrook Pump Station

Sample ID MB-17457	SampTy	pe: ME	BLK	Test	Code: El	PA Method	8015D: Diese	el Range (	Organics	
Client ID: PBS	Batch	ID: <b>17</b> 4	457	R	lunNo: 2	3963				
Prep Date: 1/29/2015	Analysis Da	te: 1/	29/2015	S	eqNo: 7	07559	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	7.7		10.00		76.5	63.5	128			

Sample ID LCS-17457	SampType	e: LCS	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics	
Client ID: LCSS	Batch ID	17457		RunNo: 2	3963				
Prep Date: 1/29/2015	Analysis Date	1/29/2015		SeqNo: 7	07561	Units: mg/k	(g		
Analyte	Result F	PQL SPK va	ue SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	10 50	00 0	76.0	67.8	130			
Surr: DNOP	4.5	5.0	00	90.4	63.5	128			

Sample ID	1501A12-001AMS	SampTy	pe: MS	3	Test	Code: El	PA Method	8015D: Dies	el Range (	Organics	
Client ID:	SC-1	Batch	D: <b>17</b>	457	R	RunNo: 2	3963				
Prep Date:	1/29/2015	Analysis Da	te: 1/	29/2015	S	SeqNo: 7	07667	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	<b>RPDLimit</b>	Qual
Diesel Range C	Organics (DRO)	41	10	50.51	0	80.7	29.2	176			
Surr: DNOP		5.0		5.051		99.5	63.5	128			

Sample ID 1501A12-001AMSE	SampTy	pe: MS	SD	Test	Code: El	PA Method	8015D: Diese	el Range C	Organics	
Client ID: SC-1	Batch	ID: <b>17</b>	457	R	RunNo: 2	3963				
Prep Date: 1/29/2015	Analysis Da	te: 1/	29/2015	S	SeqNo: 7	07668	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	37	10	49.75	0	75.1	29.2	176	8.63	23	
Surr: DNOP	4.9		4.975		99.0	63.5	128	0	0	

#### 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

Page 6 of 8

#### **QC SUMMARY REPORT**

#### Hall Environmental Analysis Laboratory, Inc.

WO#:

1501A12 02-Feb-15

Client:

Rule Engineering LLC

Project:

Enterprise Lybrook Pump Station

Sample ID MB-17463	SampT	ype: ME	BLK	Test	Code: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: PBS	Batch	n ID: 17	463	R	unNo: 2	4020				
Prep Date: 1/29/2015	Analysis D	ate: 1/	30/2015	S	eqNo: 7	08315	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		94.9	80	120			
Sample ID LCS-17463	SampT	ype: LC	S	Tesi	Code: El	PA Method	8015D: Gaso	line Rang	е	

Client ID: LCSS	Batch	ID: 17	463	F	RunNo: 2	4020				
Prep Date: 1/29/2015	Analysis D	ate: 1/	30/2015	8	SeqNo: 7	08316	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	<b>RPDLimit</b>	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	65.8	139			
Surr: BFB	1000		1000		102	80	120			

Sample ID 1501A12-002AMS	SampTy	ре: МS	3	Test	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: SC-2	Batch	ID: <b>17</b>	463	R	RunNo: 2	4020				
Prep Date: 1/29/2015	Analysis Da	ite: 1/	30/2015	S	SeqNo: 7	08344	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.70	0	109	47.9	144			
Surr: BFB	1000		988.1		106	80	120			

Sample ID 1501A12-002AMS	SD SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: SC-2	Batch	ID: 17	463	R	RunNo: 2	4020				
Prep Date: 1/29/2015	Analysis D	ate: 1/	30/2015	S	SeqNo: 7	08345	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	<b>RPDLimit</b>	Qual
Gasoline Range Organics (GRO)	23	4.9	24.70	0	92.3	47.9	144	16.9	29.9	
Surr: BFB	1100		988.1		106	80	120	0	0	

#### 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

Page 7 of 8

#### **QC SUMMARY REPORT**

#### Hall Environmental Analysis Laboratory, Inc.

WO#:

1501A12 02-Feb-15

Client:

Rule Engineering LLC

**Project:** 

Enterprise Lybrook Pump Station

Sample ID MB-17463	SampTy	ype: MB	LK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	ID: <b>174</b>	63	F	RunNo: 2	4020				
Prep Date: 1/29/2015	Analysis Da	ate: 1/3	30/2015	S	SeqNo: 7	08415	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			
Sample ID LCS-17463	SampTy	ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSS	Ratch	ID: 174	62		PunNo: 2	4020				

Sample ID LCS-17463	SampTy	pe: LC	S	Test	Code: EF	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batch	ID: <b>17</b> 4	463	R	RunNo: 24	4020				
Prep Date: 1/29/2015	Analysis Da	ite: 1/3	30/2015	S	SeqNo: 70	08416	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	80	120			
Toluene	1.0	0.050	1.000	0	99.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		115	80	120			

Sample ID 1501A12-001AM	S SampT	ype: <b>MS</b>	3	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: SC-1	Batch	ID: <b>17</b>	463	F	RunNo: 2	4020				
Prep Date: 1/29/2015	Analysis D	ate: 1/	30/2015	8	SeqNo: 7	08421	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.049	0.9862	0	117	69.2	126			
Toluene	1.1	0.049	0.9862	0.01297	110	65.6	128			
Ethylbenzene	1.2	0.049	0.9862	0	117	65.5	138			
Xylenes, Total	3.5	0.099	2.959	0.03565	117	63	139			
Surr: 4-Bromofluorobenzene	1.1		0.9862		114	80	120			

Sample ID 1501A12-001AMS	SampTy	ype: MS	D	Test	Code: El	PA Method	8021B: Volat	iles		
Client ID: SC-1	Batch	ID: 174	163	R	RunNo: 24	1020				
Prep Date: 1/29/2015	Analysis Da	ate: 1/3	30/2015	S	SeqNo: 70	08422	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.049	0.9872	0	117	69.2	126	0.143	18.5	
Toluene	1.1	0.049	0.9872	0.01297	111	65.6	128	0.936	20.6	
Ethylbenzene	1.2	0.049	0.9872	0	118	65.5	138	0.925	20.1	
Xylenes, Total	3.5	0.099	2.962	0.03565	118	63	139	0.710	21.1	
Surr: 4-Bromofluorobenzene	1.1		0.9872		115	80	120	0	0	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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- Sample pH greater than 2.
- Reporting Detection Limit



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	er: 1501A12		RcptNo: 1	
Received by/date: AQ 01 29 15				
Logged By: Ashley Gallegos 1/29/2015 8:00:00 Al	M	A ST		
Completed By: Ashley Gallegos 1/29/2015 8:39:58 Al	M	43		
		Q		
Reviewed By: 01/29/15 Chain of Custody				
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 🗸	# of preserved	
	pmg.	[***]	bottles checked	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No L	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	
By Whom: Via: Regarding:	L) Official L	a report of		
Client Instructions:				
17. Additional remarks:				
18. Cooler Information  Cooler No Temp C Condition Seal Intact Seal No	Seal Date	Signed By	1	
1 1.0 Good Yes				
A second				

Client: Rule Engineering, LLC  Mailing Address: 501 Airport Drive, Suite 205  Farmington, New Mexico 87401  Phone #: 505-860-2712  email or Fax#:  QA/QC Package:	Project Name:  Enterprise Lybrook Pum Project #:  Project Manager:  Deborah Watson	np Station			01 Hav	ANA www	LYS v.haller IE - A	nvironn Albuque Fax	LABO mental.o erque, N 505-345 equest	om NM 8710	TOF	
X Standard	Sampler: D. Wats On Ice: Yes	on □ No  ⟨○		(DRO/GRO)								(Y or N)
Date Time Matrix Sample Request ID	Container Type and # Type	HEAL No.	8021 BTEX	TPH 8015 (								Air Bubbles (Y
1/28/15 11:55 soil SC-1	2- 4 oz glass cold	-001	X	X								
1/28/15 11:45 soil SC-2	2- 4 oz glass cold	-002	X	X								
1/28/15 11:50 soil SC-3	2- 4 oz glass cold	- 003	X	X						$\perp$		
1/28/15 11:40 soil SC-4	2- 4 oz glass cold	-004	Х	Х							$\perp$	
1/28/15 12:00 soil SC-5	2-4 oz glass cold	-005	X	X								
Date: Time: Relinquished by:    28   5   17 05	Received by:  Received by:  Authorities a construction of the cons	Date Time    28   15   1705    Date Time     Get 0139   5     atolies. This serves as notice of tr	A PE	/O: rea: ayke	Code	:			on: Ton		tical repo	rt.



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

OrderNo.: 1501A13

February 02, 2015

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

FAX

RE: Enterprise Lyrbrook Pump Station

#### Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 1/29/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

Only

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report Lab Order 1501A13

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-6

Project: Enterprise Lyrbrook Pump Station

**Collection Date:** 1/28/2015 12:13:00 PM

Lab ID: 1501A13-001

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/29/2015 11:54:38 PM	17457
Surr: DNOP	85.5	63.5-128	%REC	1	1/29/2015 11:54:38 PM	17457
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/30/2015 3:13:45 PM	17463
Surr: BFB	96.2	80-120	%REC	1	1/30/2015 3:13:45 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.050	mg/Kg	1	1/30/2015 3:13:45 PM	17463
Toluene	ND	0.050	mg/Kg	1	1/30/2015 3:13:45 PM	17463
Ethylbenzene	ND	0.050	mg/Kg	1	1/30/2015 3:13:45 PM	17463
Xylenes, Total	ND	0.099	mg/Kg	1	1/30/2015 3:13:45 PM	17463
Surr: 4-Bromofluorobenzene	108	80-120	%REC	1	1/30/2015 3:13:45 PM	17463

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

Page 1 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

# Analytical Report Lab Order 1501A13 Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-7

Project: Enterprise Lyrbrook Pump Station Collection Date: 1/28/2015 12:05:00 PM

Lab ID: 1501A13-002 Matrix: SOIL Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/30/2015 12:15:51 AM	17457
Surr: DNOP	88.8	63.5-128	%REC	1	1/30/2015 12:15:51 AM	17457
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/30/2015 3:42:30 PM	17463
Surr: BFB	96.3	80-120	%REC	1	1/30/2015 3:42:30 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	1/30/2015 3:42:30 PM	17463
Toluene	ND	0.049	mg/Kg	1	1/30/2015 3:42:30 PM	17463
Ethylbenzene	ND	0.049	mg/Kg	1	1/30/2015 3:42:30 PM	17463
Xylenes, Total	ND	0.098	mg/Kg	1	1/30/2015 3:42:30 PM	17463
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	1/30/2015 3:42:30 PM	17463

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

Page 2 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## **Analytical Report**

## Lab Order 1501A13

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-8

Project: Enterprise Lyrbrook Pump Station

Collection Date: 1/28/2015 12:08:00 PM

Lab ID:

1501A13-003

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qı	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/30/2015 12:36:58 AM	17457
Surr: DNOP	88.6	63.5-128	%REC	1	1/30/2015 12:36:58 AM	17457
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/30/2015 4:11:14 PM	17463
Surr: BFB	96.7	80-120	%REC	1	1/30/2015 4:11:14 PM	17463
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	: NSB
Benzene	ND	0.048	mg/Kg	1	1/30/2015 4:11:14 PM	17463
Toluene	0.066	0.048	mg/Kg	1	1/30/2015 4:11:14 PM	17463
Ethylbenzene	ND	0.048	mg/Kg	1	1/30/2015 4:11:14 PM	17463
Xylenes, Total	ND	0.096	mg/Kg	1	1/30/2015 4:11:14 PM	17463
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	1/30/2015 4:11:14 PM	17463

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
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 8

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## **Analytical Report**

### Lab Order 1501A13

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

**Project:** Enterprise Lyrbrook Pump Station

**Lab ID:** 1501A13-004

Client Sample ID: SC-9

**Collection Date:** 1/28/2015 12:10:00 PM

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/30/2015 12:58:08 AM	17457
Surr: DNOP	82.3	63.5-128	%REC	1	1/30/2015 12:58:08 AM	17457
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/30/2015 7:32:11 PM	17463
Surr: BFB	96.8	80-120	%REC	1	1/30/2015 7:32:11 PM	17463
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.047	mg/Kg	1	1/30/2015 7:32:11 PM	17463
Toluene	ND	0.047	mg/Kg	1	1/30/2015 7:32:11 PM	17463
Ethylbenzene	ND	0.047	mg/Kg	1	1/30/2015 7:32:11 PM	17463
Xylenes, Total	ND	0.095	mg/Kg	1	1/30/2015 7:32:11 PM	17463
Surr: 4-Bromofluorobenzene	109	80-120	%REC	1	1/30/2015 7:32:11 PM	17463

Matrix: SOIL

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
  - Page 4 of 8
- P Sample pH greater than 2.
- RL Reporting Detection Limit

## **Analytical Report** Lab Order 1501A13

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-10

Project: Enterprise Lyrbrook Pump Station Collection Date: 1/28/2015 12:16:00 PM Lab ID: 1501A13-005 Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	32	10	mg/Kg	1	1/30/2015 1:19:08 AM	17457
Surr: DNOP	82.7	63.5-128	%REC	1	1/30/2015 1:19:08 AM	17457
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/30/2015 8:00:55 PM	17463
Surr: BFB	98.7	80-120	%REC	1	1/30/2015 8:00:55 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.047	mg/Kg	1	1/30/2015 8:00:55 PM	17463
Toluene	ND	0.047	mg/Kg	1	1/30/2015 8:00:55 PM	17463
Ethylbenzene	ND	0.047	mg/Kg	1	1/30/2015 8:00:55 PM	17463
Xylenes, Total	ND	0.094	mg/Kg	1	1/30/2015 8:00:55 PM	17463
Surr: 4-Bromofluorobenzene	109	80-120	%REC	1	1/30/2015 8:00:55 PM	17463

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 RSDIimit
- R RPD outside accepted recovery limits
- 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

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- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1501A13

02-Feb-15

Client:

Rule Engineering LLC

Project:

Enterprise Lyrbrook Pump Station

Sample ID MB-17457 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics Client ID: PBS Batch ID: 17457 RunNo: 23963 Prep Date: 1/29/2015 Analysis Date: 1/29/2015 SeqNo: 707559 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND 10 Surr: DNOP 7.7 10.00 76.5 63.5 128

Sample ID LCS-17457	SampT	ype: LC	S	Test	tCode: El	PA Method	8015D: Diese	el Range C	Organics	
Client ID: LCSS	Batch	ID: 17	457	R	RunNo: 2	3963				
Prep Date: 1/29/2015	Analysis D	ate: 1/	29/2015	SeqNo: 707561			Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	10	50.00	0	76.0	67.8	130			
Surr: DNOP	4.5		5 000		904	63.5	128			

#### 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

Page 6 of 8

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1501A13

02-Feb-15

Client:

Rule Engineering LLC

Project:

Enterprise Lyrbrook Pump Station

Sample ID MB-17463

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

PBS Client ID:

Batch ID: 17463

RunNo: 24020

Prep Date:

1/29/2015

Analysis Date: 1/30/2015

PQL

5.0

SeqNo: 708315

Units: mg/Kg

Analyte

Result ND SPK value SPK Ref Val

Gasoline Range Organics (GRO)

%REC LowLimit HighLimit

Qual

Surr: BFB

950

1000

94.9

120

**RPDLimit** 

Sample ID LCS-17463

SampType: LCS

RunNo: 24020

TestCode: EPA Method 8015D: Gasoline Range

Client ID: Prep Date: 1/29/2015

LCSS

Batch ID: 17463 Analysis Date: 1/30/2015

SeqNo: 708316

Units: mg/Kg

Analyte Gasoline Range Organics (GRO)

Result

PQL SPK value SPK Ref Val

0

102

LowLimit HighLimit %RPD **RPDLimit** 

Qual

5.0 25.00

65.8

Surr: BFB

25 1000

1000

102

%REC

80

139 120

%RPD

## Qualifiers:

E

- Value exceeds Maximum Contaminant Level
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit RPD outside accepted recovery limits R

Value above quantitation range

- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Reporting Detection Limit

Sample pH greater than 2.

Page 7 of 8

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1501A13

02-Feb-15

Client:

Rule Engineering LLC

Project:

Enterprise Lyrbrook Pump Station

Sample ID MB-17463	SampT	SampType: MBLK			tCode: El	tiles				
Client ID: PBS	Batch	Batch ID: 17463			RunNo: 2					
Prep Date: 1/29/2015	Analysis D	ate: 1/	30/2015	S	SeqNo: 7	08415	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID LCS-17463	SampT	ype: LC	S	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batch	1D: 17	463	F	RunNo: 2	4020				
Prep Date: 1/29/2015	Analysis D	ate: 1/	30/2015	8	SeqNo: 7	08416	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	80	120			
Toluene	1.0	0.050	1.000	0	99.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.1		1 000		115	80	120			

## Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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Sample pH greater than 2.

Reporting Detection Limit



#### 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

RULE ENGINEERING LL Work Order Number: 1501A13 RcptNo: 1 Client Name Received by/date: Ashley Gallegos Logged By: 1/29/2015 8:00:00 AM Ashley Gallegos 1/29/2015 8.43.49 AM Completed By: Reviewed By 01/29/15 Chain of Custody Not Present V No 1 Custody seals intact on sample bottles? No Not Present Yes V 2. Is Chain of Custody complete? 3 How was the sample delivered? Courier Log In NA 🗌 No 🗌 4. Was an attempt made to cool the samples? Yes V NA 🗌 No 🗌 Yes V 5. Were all samples received at a temperature of >0° C to 6.0°C No 🗌 Yes V 6. Sample(s) in proper container(s)? No I Yes V 7. Sufficient sample volume for indicated test(s)? No . Yes V 8. Are samples (except VOA and ONG) properly preserved? NA [ No V Yes 9. Was preservative added to bottles? No VOA Vials Yes 📙 No 10. VOA vials have zero headspace? No V Yes 11. Were any sample containers received broken? # of preserved bottles checked Yes V No 🗌 for pH: 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No | Yes V 13. Are matrices correctly identified on Chain of Custody? No . Yes Y 14 is it clear what analyses were requested? No Checked by: Yes V 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes [ No 🗍 NA V 16. Was client notified of all discrepancies with this order? Person Notified: Date Via: eMail Phone Fax In Person By Whom: Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 1.0 Good Yes

Client:	Rule Enddress: Farmir Fax#: ackage: ard	501 Air	ing, LLC  port Drive, Suite 205  ew Mexico 87401  0-2712  Level 4 (Full Validation)	□ Standard Project Name Enterprise Ly Project #.  Project Mana Deborah W  Sampler: On Ice:	brook Pump S			49	01 Ha	AN w wkins	ww.ha NE -3975	YS] allenv - Alb	IS rironr ouque ax	LAI	BO al.cor , NM 345-4	<b>RA</b> m 1 871	TC	DRY	or N)
□ EDD (				Sample Temp		B		ORC											2
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		8021 BTEX	TPH 8015 (I											Air Bubbles (Y
1/28/15	12:13	soil	SC-6	2- 4 oz glass	cold	-001	Х	Х											
1/28/15	12:05	soil	SC-7	2- 4 oz glass	cold	-002	Х	Х											
1/28/15	12:08	soil	SC-8	2- 4 oz glass	cold	- 003	Х	Х											
1/28/15	12:10	soil	SC-9	2- 4 oz glass	cold	-004	Х	X											
1/28/15	12.16	soil	SC-10	2- 4 oz glass	cold	-005	Х	Х								+	+	-	
									+	+	+			+	+	+	+	+	
Date:   28   5   Date:   28   15	Time: 105 Time: 1810/	Relinquishe Relinquishe Manual samples sub	the Waters	Received by:  Received by:  Contracted to other ac	Walte Aull of porepited laboratoria	Date Time  1/28/15 1705  Date Time  29/15 L  s. This serves as notice of this	Ar Pa	O: ea: ykey	Code	:							ytical re	port.	



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

February 10, 2015

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

FAX

RE: Enterprise Lybrook Pump Station OrderNo.: 1502195

#### Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/5/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

Only

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report Lab Order 1502195

Date Reported: 2/10/2015

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SC-11

Project: Enterprise Lybrook Pump Station

Collection Date: 2/4/2015 10:05:00 AM

Lab ID: 1502195-001

**CLIENT:** Rule Engineering LLC

Matrix: SOIL

Received Date: 2/5/2015 7:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analyst	JME
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/5/2015 11:07:45 AM	17578
Surr: DNOP	65.9	63.5-128	%REC	1	2/5/2015 11:07:45 AM	17578
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	2/6/2015 2:10:23 PM	17580
Surr: BFB	93.2	80-120	%REC	1	2/6/2015 2:10:23 PM	17580
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	2/6/2015 2:10:23 PM	17580
Toluene	0.050	0.049	mg/Kg	1	2/6/2015 2:10:23 PM	17580
Ethylbenzene	ND	0.049	mg/Kg	1	2/6/2015 2:10:23 PM	17580
Xylenes, Total	0.11	0.099	mg/Kg	1	2/6/2015 2:10:23 PM	17580
Surr: 4-Bromofluorobenzene	104	80-120	%REC	1	2/6/2015 2:10:23 PM	17580

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

Page 1 of 9

- P Sample pH Not In Range
- RL Reporting Detection Limit

## **Analytical Report**

#### Lab Order 1502195

Date Reported: 2/10/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-12

Project: Enterprise Lybrook Pump Station

Collection Date: 2/4/2015 10:08:00 AM

Lab ID:

1502195-002

Received Date: 2/5/2015 7:45:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/5/2015 11:34:47 AM	17578
Surr: DNOP	72.8	63.5-128		%REC	1	2/5/2015 11:34:47 AM	17578
EPA METHOD 8015D: GASOLINE RA	ANGE					Analyst	NSB
Gasoline Range Organics (GRO)	150	25		mg/Kg	5	2/6/2015 3:36:32 PM	17580
Surr: BFB	120	80-120	S	%REC	5	2/6/2015 3:36:32 PM	17580
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	0.13	0.12		mg/Kg	5	2/6/2015 3:36:32 PM	17580
Toluene	1.8	0.25		mg/Kg	5	2/6/2015 3:36:32 PM	17580
Ethylbenzene	0.66	0.25		mg/Kg	5	2/6/2015 3:36:32 PM	17580
Xylenes, Total	8.2	0.49		mg/Kg	5	2/6/2015 3:36:32 PM	17580
Surr: 4-Bromofluorobenzene	113	80-120		%REC	5	2/6/2015 3:36:32 PM	17580

Matrix: SOIL

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
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 9

- P Sample pH Not In Range
- RL Reporting Detection Limit

## **Analytical Report**Lab Order **1502195**

Date Reported: 2/10/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-13

Project: Enterprise Lybrook Pump Station

Collection Date: 2/4/2015 10:10:00 AM

Lab ID: 1502195-003

Matrix: SOIL

Received Date: 2/5/2015 7:45:00 AM

Analyses	Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	2/5/2015 12:02:04 PM	17578
Surr: DNOP	67.8	63.5-128	%REC	1	2/5/2015 12:02:04 PM	17578
EPA METHOD 8015D: GASOLINE RAM	NGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	2/6/2015 5:02:55 PM	17580
Surr: BFB	92.2	80-120	%REC	1	2/6/2015 5:02:55 PM	17580
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.050	mg/Kg	1	2/6/2015 5:02:55 PM	17580
Toluene	0.11	0.050	mg/Kg	1	2/6/2015 5:02:55 PM	17580
Ethylbenzene	ND	0.050	mg/Kg	1	2/6/2015 5:02:55 PM	17580
Xylenes, Total	0.13	0.10	mg/Kg	1	2/6/2015 5:02:55 PM	17580
Surr: 4-Bromofluorobenzene	102	80-120	%REC	1	2/6/2015 5:02:55 PM	17580

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

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- P Sample pH Not In Range
- RL Reporting Detection Limit

## Analytical Report Lab Order 1502195

Date Reported: 2/10/2015

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SC-14

Project: Enterprise Lybrook Pump Station

Collection Date: 2/4/2015 10:12:00 AM

Lab ID: 1502195-004

**CLIENT:** Rule Engineering LLC

Matrix: SOIL

Received Date: 2/5/2015 7:45:00 AM

Analyses	Result	RL Qı	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analysi	JME
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	2/5/2015 12:02:06 PM	17578
Surr: DNOP	95.8	63.5-128	%REC	1	2/5/2015 12:02:06 PM	17578
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	230	25	mg/Kg	5	2/6/2015 5:31:38 PM	17580
Surr: BFB	112	80-120	%REC	5	2/6/2015 5:31:38 PM	17580
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	: NSB
Benzene	0.61	0.25	mg/Kg	5	2/6/2015 5:31:38 PM	17580
Toluene	9.1	0.25	mg/Kg	5	2/6/2015 5:31:38 PM	17580
Ethylbenzene	0.87	0.25	mg/Kg	5	2/6/2015 5:31:38 PM	17580
Xylenes, Total	9.5	0.50	mg/Kg	5	2/6/2015 5:31:38 PM	17580
Surr: 4-Bromofluorobenzene	111	80-120	%REC	5	2/6/2015 5:31:38 PM	17580

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

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- P Sample pH Not In Range
- RL Reporting Detection Limit

## **Analytical Report**

Lab Order 1502195

Date Reported: 2/10/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-15

Project: Enterprise Lybrook Pump Station

Collection Date: 2/4/2015 10:14:00 AM

Lab ID: 1502195-005

Received Date: 2/5/2015 7:45:00 AM

Analyses	Result	Result RL Qual Units				Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	15	10		mg/Kg	1	2/5/2015 12:23:36 PM	17578
Surr: DNOP	93.7	63.5-128		%REC	1	2/5/2015 12:23:36 PM	17578
EPA METHOD 8015D: GASOLINE RAM	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	220	4.7		mg/Kg	1	2/6/2015 9:21:14 PM	17580
Surr: BFB	219	80-120	S	%REC	1	2/6/2015 9:21:14 PM	17580
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	0.76	0.047		mg/Kg	1	2/6/2015 9:21:14 PM	17580
Toluene	7.0	0.24		mg/Kg	5	2/9/2015 2:42:26 PM	17580
Ethylbenzene	0.54	0.047		mg/Kg	1	2/6/2015 9:21:14 PM	17580
Xylenes, Total	5.6	0.094		mg/Kg	1	2/6/2015 9:21:14 PM	17580
Surr: 4-Bromofluorobenzene	121	80-120	S	%REC	1	2/6/2015 9:21:14 PM	17580

Matrix: SOIL

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 RSDImit
- 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

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- P Sample pH Not In Range
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1502195

10-Feb-15

Client:

Rule Engineering LLC

**Project:** 

Enterprise Lybrook Pump Station

Sample ID MB-17578	SampT	ype: ME	BLK	Test	Code: El	PA Method	8015D: Diese	el Range C	rganics			
Client ID: PBS	Batch	ID: <b>17</b>	578	R	unNo: 2	4112						
Prep Date: 2/5/2015	Analysis D	ate: 2/	5/2015	S	eqNo: 7	10887	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	<b>RPDLimit</b>	Qual		
Diesel Range Organics (DRO)	ND	10										
Surr: DNOP	11		10.00		109	63.5	128					

Sample ID LCS-17578	SampT	ype: LC	S	Test	tCode: El	PA Method	8015D: Diese	el Range C	Organics				
Client ID: LCSS	Batch	ID: 17	578	R	RunNo: 2	4111							
Prep Date: 2/5/2015	Analysis D	Analysis Date: 2/5/2015				10956	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	105	67.8	130						
Surr: DNOP	4.5		5.000		89.9	63.5	128						

## 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 Not In Range
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1502195

10-Feb-15

Client:

Rule Engineering LLC

Project:	Enterpris	e Lybrook P	ump S	Station							
Sample ID	MB-17580	SampTyp	e: ME	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	PBS	Batch II	D: <b>17</b>	580	F	RunNo: 2	4152				
Prep Date:	2/5/2015	Analysis Dat	e: <b>2</b> /	6/2015	S	SeqNo: 7	12397	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	ge Organics (GRO)	ND	5.0								
Surr: BFB		940		1000		94.0	80	120			
Sample ID	LCS-17580	SampTyp	e: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	LCSS	Batch II	D: <b>17</b>	580	F	RunNo: 2	4152				
Prep Date:	2/5/2015	Analysis Dat	e: 2/	6/2015	8	SeqNo: 7	12398	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	ge Organics (GRO)	24	5.0	25.00	0	97.8	64	130			
Surr: BFB		1000		1000		103	80	120			
Sample ID	1502195-001AMS	SampTyp	e: <b>MS</b>	3	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	SC-11	Batch II	D: <b>17</b>	580	F	RunNo: 2	4152				
Prep Date:	2/5/2015	Analysis Date	e: <b>2</b> /	6/2015	S	SeqNo: 7	12409	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	ge Organics (GRO)	29	4.9	24.73	0	116	47.9	144			
Surr: BFB		1000		989.1		103	80	120			
Sample ID	1502195-001AMSI	SampTyp	e: <b>M</b> S	SD	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID:	SC-11	Batch II	D: <b>17</b>	580	F	RunNo: 2	4152				
Prep Date:	2/5/2015	Analysis Date	e: <b>2</b> /	6/2015	8	SeqNo: 7	12410	Units: mg/K	g		
Analyte			PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	ge Organics (GRO)	32 1000	4.9	24.65 986.2	0	128 106	47.9 80	144 120	9.01	29.9	
- Cuil. Di D											
	MB-17612	SampTyp	e: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID:	PBS	Batch II				RunNo: 2					
Prep Date:	2/6/2015	Analysis Date	e: <b>2/</b>	9/2015	S	SeqNo: 7	13254	Units: %RE	С		
Analyte			PQL	100 (0/A) 100 (0/A)	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		900		1000		89.7	80	120			
Sample ID	LCS-17612	SampTyp	e: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID:	LCSS	Batch II			F	RunNo: 2	4186				
Prep Date:	2/6/2015	Analysis Date	e: <b>2/</b>	9/2015	S	SeqNo: 7	13255	Units: %RE	С		
Analyte			PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1000		1000		99.6	80	120			

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

0 RSD is greater than RSDlimit

R RPD outside accepted recovery limits

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

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P Sample pH Not In Range

RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1502195

10-Feb-15

Client:

Rule Engineering LLC

Project:

Enterprise Lybrook Pump Station

Sample ID MB-17580	SampT	ype: ME	BLK	Test						
Client ID: PBS	Batch	1D: <b>17</b>	580	R	tunNo: 2	4152				
Prep Date: 2/5/2015	Analysis D	Analysis Date: 2/6/2015 SeqNo					Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID LCS-17580	SampT	SampType: LCS TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch	Batch ID: 17580 RunNo: 24152								
Prep Date: 2/5/2015	Analysis D	Analysis Date: 2/6/2015 SeqNo: 712442						(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	102	80	120			
Toluene	0.96	0.050	1.000	0	95.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID 1502195-002AM	S Samp	SampType: MS TestCode: EPA Method 8021B: Volatiles									
Client ID: SC-12	Batc	h ID: 17	580	F	RunNo: 2						
Prep Date: 2/5/2015	Analysis [	Date: 2/	6/2015	8	SeqNo: 7	12453	Units: mg/K	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.2	0.25	0.9804	0.1263	104	69.2	126				
Toluene	2.3	0.25	0.9804	1.818	51.9	65.6	128			S	
Ethylbenzene	1.5	0.25	0.9804	0.6552	88.8	65.5	138				
Xylenes, Total	8.4	0.49	2.941	8.247	5.68	63	139			S	
Surr: 4-Bromofluorobenzene	5.4		4.902		110	80	120				

Sample ID 1502195-002AM	SD SampT	ype: MS	SD	TestCode: EPA Method 8021B: Volatiles							
Client ID: SC-12	Batch	ID: 17	580	F	RunNo: 2	4152					
Prep Date: 2/5/2015	Analysis D	ate: 2/	6/2015	S	SeqNo: 7	12454	Units: mg/K	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.1	0.25	0.9814	0.1263	96.5	69.2	126	6.91	18.5		
Toluene	1.9	0.25	0.9814	1.818	4.43	65.6	128	22.2	20.6	RS	
Ethylbenzene	1.3	0.25	0.9814	0.6552	68.2	65.5	138	14.1	20.1		
Xylenes, Total	6.3	0.49	2.944	8.247	-64.6	63	139	28.0	21.1	RS	
Surr: 4-Bromofluorobenzene 5.3 4.907					107	80	120	0	0		

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- ND
- Not Detected at the Reporting Limit
- Sample pH Not In Range
- Reporting Detection Limit

Page 8 of 9

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1502195

10-Feb-15

Client:

Rule Engineering LLC

Project:

Enterprise Lybrook Pump Station

Sample ID MB-17612

SampType: MBLK

TestCode: EPA Method 8021B: Volatiles

Client ID: PBS

Batch ID: 17612

RunNo: 24186

Prep Date:

2/6/2015

Analysis Date: 2/9/2015

SeqNo: 713265

Units: %REC

%RPD

%RPD

Analyte

PQL

%REC LowLimit HighLimit

Qual

Surr: 4-Bromofluorobenzene

Result 1.0

1.000

SPK value SPK Ref Val

99.9

80 120

Sample ID LCS-17612

SampType: LCS

TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Prep Date: 2/6/2015 Batch ID: 17612

RunNo: 24186 SeqNo: 713266

Units: %REC

Analyte

Analysis Date: 2/9/2015

SPK value SPK Ref Val %REC

HighLimit

**RPDLimit** 

**RPDLimit** 

Qual

1.1

1.000

Surr: 4-Bromofluorobenzene

107

80 120

Qualifiers:

E

0

Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

RSD is greater than RSDlimit R RPD outside accepted recovery limits

Value above quantitation range

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank В

Н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

Sample pH Not In Range

Reporting Detection Limit

Page 9 of 9



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name	RULE ENGINEERING LL	Work Order Numbe	r: 1502195		RcptNo:	1
Received by/	tate Ann	02/05/15				
Logged By:	Ashley Gallegos	2/5/2015 7:45:00 AM		A		
Completed By	Ashley Gallegos	2/5/2015 8:21:29 AM		A		
Reviewed By	15	02/05/15		V		
Chain of C	ustody					
	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 a	ittempt made to cool the samp	les?	Yes 🗸	No 🗆	NA 🗆	
5. Were all	samples received at a tempera	ture of >0° C to 6.0°C	Yes 🗸	No 🗆	NA 🗆	
6. Sample(s	s) in proper container(s)?		Yes 🗸	No 🗌		
7. Sufficient	sample volume for indicated to	est(s)?	Yes 🗸	No 🗌		
8. Are samp	les (except VOA and ONG) pr	operly preserved?	Yes 🗸	No		
9. Was pres	ervative added to bottles?		Yes	No 🗸	NA .	
10. VOA vials	have zero headspace?		Yes 🗌	No 🗌	No VOA Vials 🗹	
11. Were an	sample containers received b	oroken?	Yes	No 🗸	# of preserved	
	erwork match bottle labels?		Yes 🗸	No 🗆	bottles checked for pH:	r >12 unless noted)
	crepancies on chain of custody ces correctly identified on Chai		Yes 🗸	No 🗌	Adjusted?	1 - 12 0111000 110100)
	what analyses were requested		Yes 🗸	No 🗆		
15. Were all	nolding times able to be met?		Yes 🗸	No 🗆	Checked by:	
ţii no, noi	my editioner for authorizations,					
Special Ha	ndling (if applicable)		-			
16. Was clier	nt notified of all discrepancies v	with this order?	Yes 🗌	No 🗌	NA ₩	7
	son Notified:	Date				
	Whom:	Via:	eMail	Phone Fax	In Person	
	garding:					
17. Addition						J
18. Cooler I	The state of the s	Seal Intact   Seal No     Yes	Seal Date	Signed By		
1.	1 0000	103				

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Client:	Rule E	ngineer	ing, LLC	☐ Standard		5 Day TAT		100			VAL								
				Project Name	9:						ww.h								
Mailing A	Address:	501 Air	port Drive, Suite 205	The same of the sa	brook Pump S	Station		49	01 H	awkir	s NE	- Al	buqu	ierqu	e, N	M 87	109		
	Farmir	ngton, N	ew Mexico 87401	Project #:				Te	el. 50	5-34	5-397	5	Fax	505	-345	4107	7		-
Phone #		505-86	0-2712								A	nalys	sis R	equ	est				
email or	Fax#:			Project Mana															
QA/QC P			☐ Level 4 (Full Validation)	Deborah V	/atson														
Accredita	ation:			Sampler:	D. Watson			(DRO/GRO)											ê
□ NELA	-	□ Other		On Ice:	Yes	□ No		0/0											P
□ EDD	Type) _	T		Sample Tem	perature: /		×												8
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1502195	8021 BTEX	<b>TPH 8015</b>											Air Bubbles (Y or
2/4/15	10:05	soil	SC-11	1- 4 oz glass	cold	-001	X	Х											
2/4/15	10:08	soil	SC-12	1- 4 oz glass	cold	-2003	X	Х											
2/4/15	10:10	soil	SC-13	1- 4 oz glass	cold	-003	Х	Х											
2/4/15	10:12	soil	SC-14	1- 4 oz glass	cold	-004	Х	Х											
2/4/15	10:14	soil	SC-15	1-4 oz glass	cold	-005	Х	Х	-	+	+	-				-	-	$\perp$	-
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				Danie dhe		Data Time	0		Dill	4= F			144			Land	$\perp$		
Date:	Time: 1635	Relinquish	ah Watery	Received by:  Date Time  2/4/5/165				narks O: ea:	s: Bill	IO E	nterpr	ise, A	ment	uon:	iom	LONG	J		
Date:	Time:	Relinquish	tullade	Received by:  Date Time				ykey	Cod										
	If necessary	samples sub	omitted to Hall Environmental may be sub	contracted to other a	ccredited laboratorie	es. This serves as notice of thi	s possi	bility.	any sub	o-contra	icted dat	a will b	e clear	ry nota	ted on	ine ana	aytical	report	

OIL CONS. DIV DIST. 3

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

State of New Mexico
Energy Minerals and Natural
Resources

JUN 1 5 2015

Form C-141 Revised August 8, 2011

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

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

District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Santa Fe, NM 87505												
Release Notification and Corrective Action												
OPERATOR   Initial Report   Final Report									port			
Name of Company: Enterprise Field Services LLC						Contact: Thomas Long						
Address: 614 Reilly Ave, Farmington, NM 87401							No. 505-599-					
Facility Na	me: Latera	al 2C-85			F	acility Typ	e: Natural Ga	as Gatl	nering Pi	peline		
Surface Ov	wner: Jica	rilla Apach	e Tribe	Mineral O	wner:	Jicarilla Apache Tribe API No.						
LOCATION OF RELEASE												
Unit Letter	Section	Township				South Feet from East/West			County			
0	4	23N	4W	the	Line		the	Line		Rio Arriba		
				1593			2450					
Latitude 36.249718 Longitude 107.25614  NATURE OF RELEASE									***			
Type of Reli	ease. Natur	al Gas and N	Jatural Ga		JKE	Volume of Release: Unknown Volume Recovered: None						
		spected inter						our of Occurrence: Date and Hour of Discovery: 6/3				
		•				6/3/2015 @ 11:20 a.m. @ 12:00 p.m.						
Was Immed	liate Notice					If YES, To	Whom?					
		∐ Ye	s No	Not Requ	uired							
By Whom?						Date and Hour						
Was a Watercourse Reached? ☐ Yes ☒ No						If YES, Volume Impacting the Watercourse						
		mpacted, De										
Describe Cause of Problem and Remedial Action: On July 3, 2015, during routine operations a field operation technician identified a natural gas release on the Lateral 2C-85 pipeline. The pipeline was isolated, depressurized, locked out and tagged out. Repairs/remediation began June 4, 2015 and will continue on June 15, 2015. Subsurface impacts will be assessed during the repair activities.												
Describe Area Affected and Cleanup Action Taken.* A small area of dead vegetation was observed on the ground surface. Subsurface will be assessed during the repair activities.								II				
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.								not				
$1 \leq 1$						OIL CONSERVATION DIVISION						
Signature: Spatield					A CO							
Printed Nan	ne: Jon E. F	ields			<i>F</i>	Approved by Environmental Specialist:						
Title: Directo	or, Environr	mental			1	Approval Date: 6/22/15 Expiration Date:						
E-mail Address:jefields@eprod.com					(	Conditions of	of Approval:			Attached		

Date: / -/2 - 20/5 F
\* Attach Additional Sheets If Necessary

Phone: (713)381-6684

#NCS 1517349852

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

State of New Mexico **Energy Minerals and Natural** Resources

APR 3 0 2015

OIL CONS. DIV DIST. 3

Form C-141

Revised August 8, 2011

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

Oil Conservation Division 1220 South St. Francis Dr.

				Sar	nta Fe	e, NM 87	7505						
		F	Releas	e Notifica	ation	and (	Corrective	Acti	on				
					OP	ERATO	R	Г	Initial F	Report	$\boxtimes$	Final Repor	
					Contact: Thomas Long								
						Telephone No. 505-599-2286							
Facility Na	me: Latera	al K-31			F	Facility Ty	pe: Natural Ga	as Gat	hering Li	ne			
Surface Ov	vner: State	9		Mineral C	wner:I	BLM			API No	).			
1				LOCA	TION	OF RE	LEASE						
Unit Letter	Section	Township	Range	Feet from	The second second	South	Feet from	East	Vest	County			
D	16	25N	6W	the <b>849</b>	Line		the 942	Line		Rio Arril	ba		
		1	atitude		Long	itudo		1					
		L	atitude_				-107.47813						
Type of Pol	acco: Notur	al Cas and N	latural Ca		UKE	OF REL		matad	Volumo	Pagavaras	d: Mon		
Type of Rei	ease. Matur	al Gas and N	vaturai Ga	s Liquids		Volume of Release: Estimated 75 MCF Gas; Estimated 5-10 Volume Recovered: None						е	
						BBLS liquids							
Source of R	elease: Inte	rnal corrosic	n							Date and Hour of Discovery: 7/26/2014 @ 12:30 a.m.			
Was Immed	iate Notice	Given?		_			o Whom?						
		☐ Ye	s 🗌 No	Not Req	uired								
By Whom?						Date and Hour:							
Was a Watercourse Reached?													
If a Waterco	urse was In	npacted, Des	scribe Full	y.*.									
Describe Ca	ause of Prob	olem and Re	medial Act	tion: A third pa	rty repo	orted a pos	ssible line leak al	ong the	Lateral K-	31 pipelin	e right	of way. The	
				ipleted on Jan			vas commined. T	ne reie	asc was a	result of it	iterriai	1 0011031011 01	
							nediated by excar						
Approximately 460 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation Division													
approved land farm facility. A groundwater investigation was completed at the site on January 27, 2015. All groundwater sample results were below the New Mexico Water Quality Control Commission standards. A third party corrective action report and groundwater													
investigation report is included with this "Final" C-141.													
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							se a threat to						
							IMOCD acceptar laws and/or regu			ort does r	ot relie	eve the	
operator or i	responsibilit	/	ance with a	arry other leder	iai, stat	e, or local	OIL CON			DIVISI	ON /	$\Lambda$	
0.	1		L.				012 0011	OLIV	********	1		1	
Signature:	*	90 /	lete						/	my	- []	-1/	
Printed Nan	ne:/Jon Fiel	ds			-	Approved	by Environmenta	Specia	alist:		y		
Title: Directo	or, Environn	nental				Approval [	Date: 6/30/19	5	Expiration	Date:			
							, ,						
E-mail Addr	ess:jefields	@eprod.com	1			Conditions of Approval:  Attached							
	//ttdoffed [												

\* Attach Additional Sheets If Necessary

Phone: (713)381-6684

#N3K14\$251576766





OIL CONS. DIV DIST. 3

APR 3 0 2015

## **CORRECTIVE ACTION REPORT**

Property:

Lateral K-31 (2014) Pipeline Release NW 1/4, S16 T25N R6W Rio Arriba County, New Mexico

February 18, 2015 Apex Project No. 7030414G028

Prepared for:

Enterprise Field Services LLC 614 Reilly Avenue Farmington, NM 87401 Attn: Mr. Thomas Long

Prepared by:

Heather M. Woods, P.G. Senior Project Manager

Elizabeth Scaggs, P.G. Senior Program Manager

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#### CORRECTIVE ACTION REPORT

Lateral K-31 (2014) Pipeline Release NW 1/4, S16 T25N R6W Rio Arriba County, New Mexico

Apex Project No. 7030414G028

#### 1.0 INTRODUCTION

#### 1.1 Site Description & Background

The Lateral K-31 (2014) Pipeline Release Site is located within the Enterprise Field Services LLC (Enterprise) pipeline right-of-way (ROW) in the northwest (NW) ¼ of Section 16 in Township 25 North and Range 6 West in rural Rio Arriba County, New Mexico (36.40479N, 107.47813W), referred to hereinafter as the "Site" or "subject Site". The Site is located on land owned by the State of New Mexico, and consists of native vegetation rangeland periodically interrupted with oil and gas gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

On July 31, 2014, Enterprise shut in the Lateral K-31 pipeline and initiated excavation activities at the Site in an effort to locate and repair a subsurface leak. The leak was subsequently identified and repaired. Natural gas and natural gas condensate were released from the pipeline as a result of internal corrosion. The leak was identified by a release of natural gas at the ground surface.

A topographic map depicting the location of the Site is included as Figure 1, and a Site Vicinity Map is included as Figure 2 in Appendix A.

#### 1.2 Project Objective

The primary objective of the corrective actions was to reduce the concentration of constituents of concern (COCs) in the on-Site soils to below the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) Remediation Action Levels using the New Mexico EMNRD OCD's Guidelines for Remediation of Leaks, Spills and Releases as guidance.

#### 2.0 SITE RANKING

In accordance with the New Mexico ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex TITAN, Inc. (Apex), utilized the general site characteristics obtained during the completion of corrective action activities and information available from the Office of the New Mexico Office of the State Engineer to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:



Rankin		Ranking Score			
	<50 feet	20			
Depth to Groundwater	50 to 99 feet	10	20		
	>100 feet	0			
Wellhead Protection Area • <1,000 feet from a water	Yes	20	0		
source, or; <200 feet from private domestic water source.	No	0			
	<200 feet	20			
Distance to Surface Water Body	200 to 1,000 feet	10	20		
	>1,000 feet	0			
Total Ran		40			

Based on Apex's evaluation of the scoring criteria, the Site would have a maximum Total Ranking Score of "40". This ranking is based on the following:

- Possible groundwater was encountered in the base of the excavation at approximately 12 feet below ground surface (bgs), resulting in a ranking of "20" for depth to groundwater.
   No water wells were identified on the Office of the State Engineer website database within one mile of the Site
- No water sources were identified within 1,000 feet of the Site, resulting in a ranking of "0" for proximity to a wellhead protection area.
- The Site is located within the channel of a small ephemeral wash draining to an unnamed tributary to the Largo Wash approximately 150 feet east of the release location. Also, the Site is located approximately 840 feet west of the Largo Wash ordinary high-water mark. Based on this proximity, a maximum ranking for distance to surface water was assigned at "20".

#### 3.0 RESPONSE ACTIONS

#### 3.1 Soil Excavation Activities

On July 31, 2014, Enterprise shut in the Lateral K-31 pipeline and initiated excavation activities at the Site in an effort to locate and repair a subsurface leak. The leak was subsequently identified and repaired. Natural gas and natural gas condensate were released from the pipeline as a result of internal corrosion. The leak was identified by a release of natural gas at the ground surface. During the corrective action activities, Energy Maintenance Services USA, Inc. (EMS) provided heavy equipment and labor support, and Kyle Summers and Heather Woods, Apex environmental professionals, provided environmental support.

Subsequent to the completion of pipeline repairs, confirmation samples C-1 through C-5 were collected from the floor and sidewalls of the 30 foot long by 10 foot wide by 8 foot deep excavation to evaluate soils remaining in place. Subsequent analytical results indicated that hydrocarbon impact above NMOCD Remediation Action Levels remained on the floor of the excavation (C-1) and three of the sidewalls (C-2 through C-4).

Over-excavation began on August 5, 2014, to remove material from the impacted sidewalls and excavation floor near the point of release. Possible groundwater was observed in the excavation at approximately 12 feet bgs. The observed water in the excavation may alternatively be the result of subgrade monsoonal rain runoff. Confirmation samples C-6 through C-16 were collected from the sidewalls and floor of the excavation on August 5, August 6, and August 8, 2014. Laboratory analytical results indicated remaining hydrocarbon impact at the east wall (C-7) and



north wall (C-10), which were re-sampled as confirmation samples C-14 and C-16, respectively, after further over-excavation. Analytical results from excavation floor samples C-8, C-11, and C-15 indicate remaining hydrocarbon impact at the apparent groundwater interface.

The total depth of the final excavation measured approximately 13 to 14 feet bgs in the release footprint. The overall average surface expression of the excavation measured approximately 34 feet long by 31 feet wide.

The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated silty- and clayey-sands, with lean clay at the base of the excavation.

Based on field photoionziation detector (PID) screening, approximately 460 cubic yards of hydrocarbon affected soils were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, NM for disposal/remediation. The executed C-138 form is provided in Appendix B. The excavation was backfilled with clean imported fill and contoured to surrounding grade.

Figure 3 is a site map that indicates the approximate location of the excavated area in relation to pertinent land features (Appendix A). Photographic documentation of the field activities is included in Appendix C.

#### 3.2 Soil Sampling Program

Apex screened head-space samples of Site soils with a PID fitted with a 10.6 eV lamp to estimate excavation limits.

Apex's soil sampling program included the collection of sixteen (16) composite confirmation samples (C-1 through C-16), from the resulting excavation for laboratory analysis. Figure 3 depicts the approximate location of the excavated areas and shows the final confirmation sample locations in relation to the final excavation dimensions (Appendix A).

The confirmation soil samples were collected and placed in laboratory prepared glassware, labeled/sealed using the laboratory supplied labels, and placed on ice in a cooler, which was secured with a custody seal. The sample cooler and completed chain-of-custody form were relinquished to Envirotech Analytical Laboratory in Bloomfield, New Mexico or Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for analysis.

## 3.3 Laboratory Analytical Methods

The confirmation soil samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) utilizing EPA SW-846 Method #8021, and total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) utilizing EPA SW-846 Method #8015.

Laboratory results are summarized in Table 1, included in Appendix D. The executed chain-of-custody form and laboratory data sheets are provided in Appendix E.

#### 4.0 DATA EVALUATION

To address activities related to condensate releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically NMAC 19.15.30 *Remediation*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.



## 4.1 Confirmation Soil Samples

Apex compared the BTEX and TPH concentrations or reporting limits associated with the final confirmation samples remaining in place to the OCD *Remediation Action Levels* (RALs) for sites having a total ranking score of "40". Soils associated with confirmation samples C-1 through C-4, C-7, and C-10 were removed by over-excavation and are not included in the following discussion.

- The laboratory analyses of confirmation samples collected from soils remaining in place indicate benzene concentrations ranging from below the laboratory reporting limits to 1.2 milligrams per kilogram (mg/kg), which are below the OCD Remediation Action Level.
- Confirmation sample C-8, collected near the capillary fringe from the floor of the excavation, exhibited a total BTEX concentration of 72 mg/kg, which exceeds the OCD Remediation Action Level. The excavation was advanced a minimum of one (1) foot below the observed water level subsequent to the collection of this sample. The laboratory analyses of the remaining confirmation samples collected from soils remaining in place indicate total BTEX concentrations ranging from below the laboratory reporting limits to 42 mg/kg, which are below the OCD Remediation Action Level.
- Confirmation samples C-8, C-11, and C-15, collected near the capillary fringe from the floor of the excavation, exhibited TPH GRO/DRO concentrations ranging from 468 mg/kg to 2,020 mg/kg, which exceed the OCD Remediation Action Level of 100 mg/kg for a Site ranking of "40". The excavation was advanced a minimum of one (1) foot below the observed water level subsequent to the collection of these samples. The laboratory analyses of the remaining confirmation samples collected from soils remaining in place do not indicate TPH GRO/DRO concentrations above the laboratory reporting limits, which are below the OCD Remediation Action Level of 100 mg/kg for a Site ranking of "40".

Confirmation sample results are provided in Table 1 in Appendix D.

#### 5.0 FINDINGS AND RECOMMENDATIONS

The Lateral K-31 (2014) Pipeline Release Site is located within the Enterprise pipeline ROW in the NW ¼ of Section 16 in Township 25 North and Range 6 West in rural Rio Arriba County, New Mexico (36.40479N, 107.47813W). The Site is located land owned by the State of New Mexico, and consists of native vegetation rangeland periodically interrupted with oil and gas gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

On July 31, 2014, Enterprise shut in the Lateral K-31 pipeline and initiated excavation activities at the Site in an effort to locate and repair a subsurface leak. The leak was subsequently identified and repaired. Natural gas and natural gas condensate were released from the pipeline as a result of internal corrosion. An unknown quantity of dry natural gas and condensate/water mixture was released from the pipeline as a result of internal corrosion. The leak was identified by a release of natural gas at the ground surface.

 The primary objective of the corrective actions was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD RALs using the New Mexico EMNRD OCD's Guidelines for Remediation of Leaks, Spills and Releases as guidance.



- The total depth of the final excavation was approximately 12 to 14 feet bgs. The surface expression of the final excavation measured approximately 34 feet long by 31 feet wide. Possible groundwater was observed in the excavation at approximately 12 feet bgs.
- Prior to backfilling, final confirmation samples were collected from the resulting excavation for laboratory analyses. Based on analytical results, confirmation samples collected near the capillary fringe of the northwest, northeast, and southwest portions of the floor of the excavation exceed the OCD Remediation Action Levels for total BTEX, and/or TPH GRO/DRO. The excavation was extended a minimum of one (1) foot below the observed water level subsequent to the collection of these samples. Laboratory analytical results for the remainder of the soils remaining in place do not exhibit benzene or total BTEX concentrations above the OCD Remediation Action Levels. Laboratory analytical results for the remainder of the soils remaining in place do not exhibit concentrations of combined TPH GRO/DRO above the OCD Remediation Action Level of 100 mg/kg for a Site ranking of "40".
- A total of approximately 460 cubic yards of hydrocarbon affected soils were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with clean imported fill and contoured to the surrounding grade.

Based on field observations and laboratory analytical results, Apex has the following recommendations:

- Report the corrective action results presented herein to the OCD; and
- Perform Site Investigation activities to evaluate potential petroleum hydrocarbon impact to groundwater.

#### 6.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE

Apex's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client.

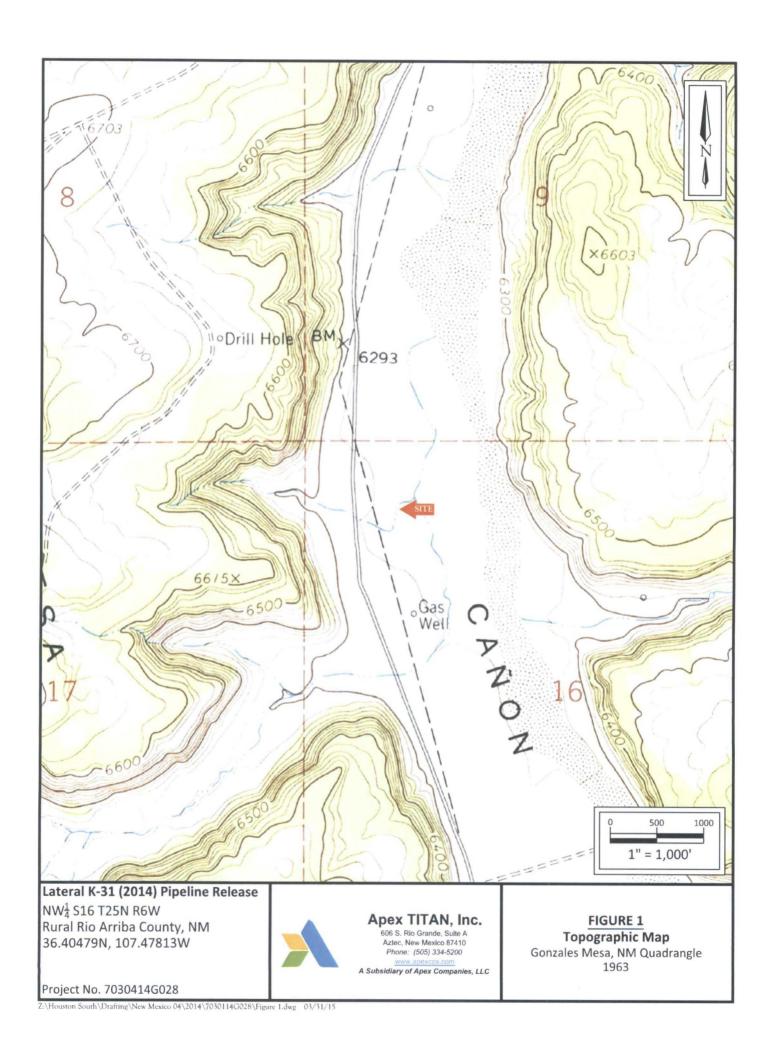
Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Apex cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Apex's findings and recommendations are based solely upon data available to Apex at the time of these services.

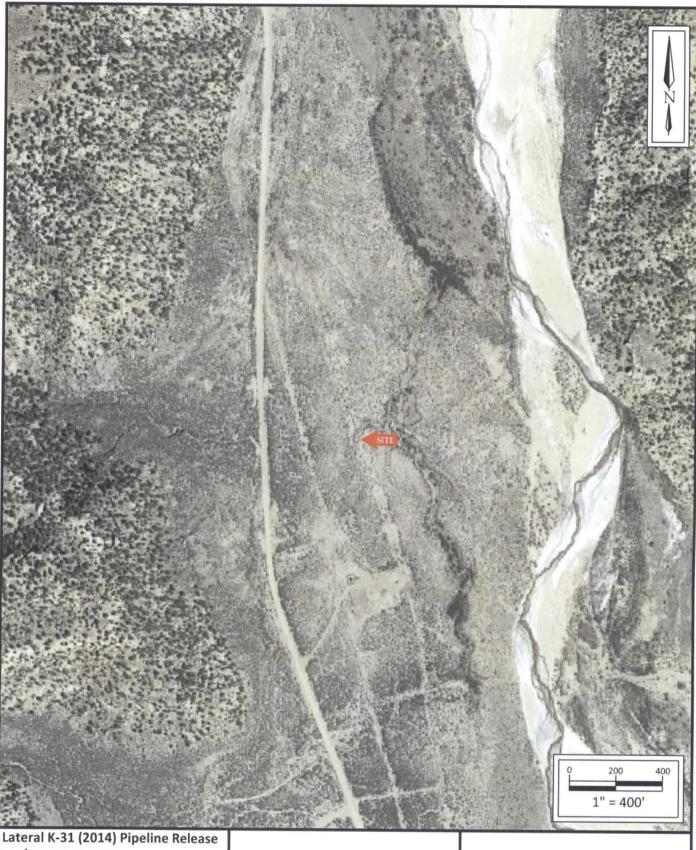
This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the expressed written authorization of Enterprise and Apex. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal,

Enterprise Field Services LLC Corrective Action Report Lateral K-31 (2014) Pipeline Release February 18, 2015



the report, and Apex's Agreement. The limitation of liability defined in the agreement is the aggregate limit of Apex's liability to the client.





NW<sup>1</sup>/<sub>4</sub> S16 T25N R6W Rural Rio Arriba County, NM 36.40479N, 107.47813W

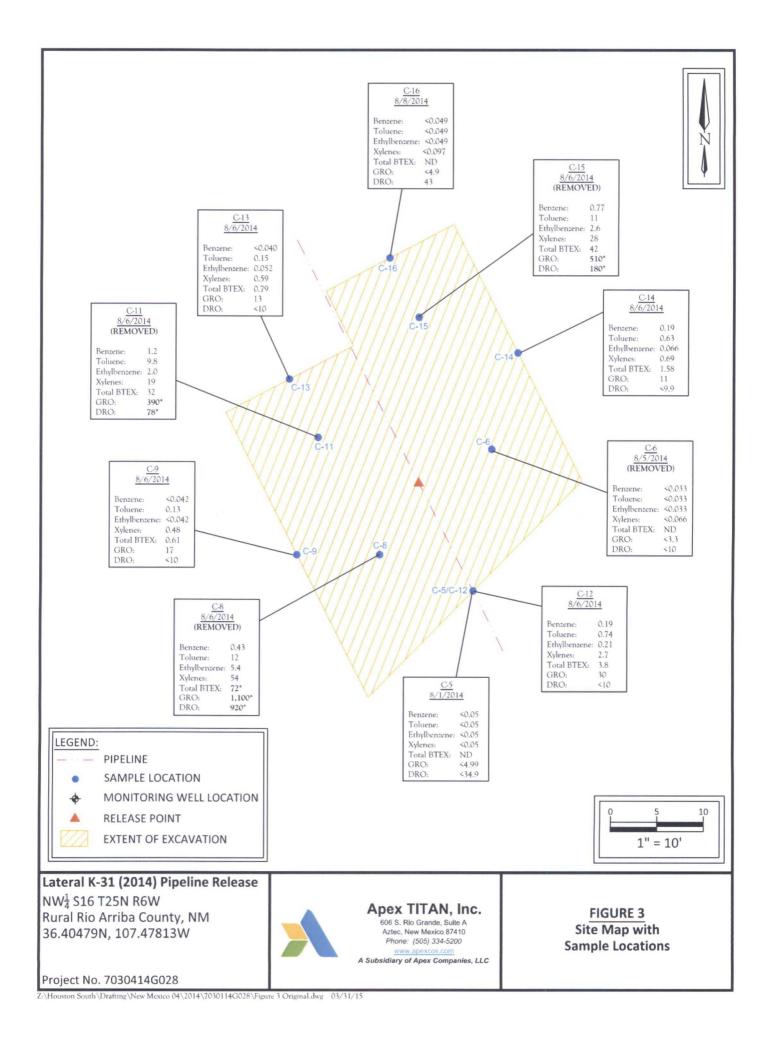


Apex TITAN, Inc. 606 S. Rio Grande, Suite A Aztec, New Mexico 87410 Phone: (505) 334-5200

A Subsidiary of Apex Companies, LLC

FIGURE 2 Site Vicinity Map 2013 Aerial Photograph

Project No. 7030414G028



District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

97057-0649

Form C-138 Revised 08/01/11

\*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

## 1220 S. St. Francis Dr., Santa Fe, NM 87505 REOUEST FOR APPROVAL TO ACCEPT SOLID WASTE 1. Generator Name and Address: Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401 Originating Site: Lateral K-31 Location of Material (Street Address, City, State or ULSTR): Unit Letter D Section 16 T 25N R 6W, GPS 36.404829, -107.478125, San Juan County, NM Source and Description of Waste: Source: Natural Gas Pipeline Release Description: Exempt petroleum affected soil from clean-up efforts at pipeline release. Estimated Volume 50 (vd³) bbls Known Volume (to be entered by the operator at the end of the haul) GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS , representative or authorized agent for Enterprise Field Services, LLC **Generator Signature** certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-Operator Use Only: Waste Acceptance Frequency Monthly Weekly Per Load exempt waste. RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) ☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS 7-30-14, representative for Enterprise Field Services, LLC authorize Envirotech, Inc. to complete **Generator Signature** the required testing/sign the Generator Waste Testing Certification. , representative for do hereby certify that Representative/Agent Signature representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC. Transporter: West States Energy Contractors. In and Moss Juce , EMS **OCD Permitted Surface Waste Management Facility** Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility \* Permit #: NM 01-0011 Address of Facility: Hilltop, NM Method of Treatment and/or Disposal: ☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfill ☐ Other Waste Acceptance Status: APPROVED. ☐ DENIED (Must Be Maintained As Permanent Record) TITLE: Environmental Nanger DATE: 8/6/14 TELEPHONE NO .:

Management Facility Authorized Agent

505-632-0615



## Photograph 1

View of site prior to excavation activities, facing northwest.



## Photograph 2

View of partially completed excavation during corrective action activities, facing northeast.



## Photograph 3

View of partially completed excavation during corrective action activities, facing north.



Apex Job #703014G028 Page 1 of 2





Lateral K-31 (2014) Pipeline Release

## Photograph 4

View of partially completed excavation during corrective action activities following extension of east wall, facing northeast.



## Photograph 5

View of the final excavation at the completion of corrective action activities, facing north.



Apex Job #703014G028 Page 2 of 2



# TABLE 1 Lateral K-31 (2014) Pipeline Release SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
		Natural Resources vision, Remediation	10	NE	NE	NE	50	10	00
		RECEIVED TO STATE OF		Samples Remo	ved by Excavation				
C-1	8/1/2014	8	<0.10	1.74	<0.10	4.25	5.99	68.3	571
C-2	8/1/2014	5 to 7	<0.05	5.26	1.28	16.1	22.6	102	7,870
C-3	8/1/2014	5 to 7	0.61	12.3	1.95	20.5	35.4	140	7,940
C-4	8/1/2014	5 to 7	< 0.05	0.49	0.11	3.61	4.21	48.6	812
C-7	8/5/2014	12 to 14	0.46	6.0	1.4	14	22	310	190
C-10	8/6/2014	12 to 14	0.88	36	9.7	91	138	1,900	1,300
	<b>科尼斯·</b> 发动成为			Final Confir	mation Samples	<b>对抗性性性</b>	data tenderakan ber		
C-5	8/1/2014	5 to 7	< 0.05	<0.05	<0.05	< 0.05	ND	<4.99	<34.9
C-6	8/5/2014	14	< 0.033	<0.033	<0.033	<0.066	ND	<3.3	<10
C-8	8/6/2014	14	0.43	12	5.4	54	72	1,100	920
C-9	8/6/2014	12 to 14	<0.042	0.13	<0.042	0.48	0.61	17	<10
C-11	8/6/2014	14	1.2	9.8	2.0	19	32	390	78
C-12	8/6/2014	12 to 14	0.19	0.74	0.21	2.7	3.8	30	<10
C-13	8/6/2014	12 to 14	<0.040	0.15	0.052	0.59	0.79	13	<10
C-14	8/6/2014	12 to 14	0.19	0.63	0.066	0.69	1.58	11	<9.9
C-15	8/6/2014	14	0.77	11	2.6	28	42	510	180
C-16	8/8/2014	12 to 14	< 0.049	<0.049	<0.049	< 0.097	ND	<4.9	43

Note: Concentrations in **bold** and yellow exceed the applicable OCD Remediation Action Level

NE = Not Established

ND = Not Detected above Laboratory Reporting Limits



#### **Report Summary**

Client: Enterprise Products

Chain Of Custody Number: 17270

Samples Received: 8/1/2014 3:30:00PM

Job Number: 97057-0352 Work Order: P408003

Project Name/Location: Lat K-31

Entire Report Reviewed By:

Date:

8/5/14

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Project Number: Project Manager: 97057-0352

Kyle Summers-Apex TITAN

**Reported:** 05-Aug-14 09:44

## **Analyical Report for Samples**

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container	
C-1	P408003-01A	Soil	08/01/14	08/01/14	Glass Jar, 4 oz.	
C-2	P408003-02A	Soil	08/01/14	08/01/14	Glass Jar, 4 oz.	
C-3	P408003-03A	Soil	08/01/14	08/01/14	Glass Jar, 4 oz.	
C-4	P408003-04A	Soil	08/01/14	08/01/14	Glass Jar, 4 oz.	
C-5	P408003-05A	Soil	08/01/14	08/01/14	Glass Jar, 4 oz.	



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Project Number: Project Manager: 97057-0352

Kyle Summers-Apex TITAN

Reported: 05-Aug-14 09:44

C-1

#### P408003-01 (Solid)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8021B	
Toluene	1.74	0.10	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8021B	
p,m-Xylene	3.72	0.10	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8021B	
o-Xylene	0.53	0.10	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8021B	
Total Xylenes	4.25	0.10	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8021B	
Total BTEX	5.99	0.10	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8021B	
Surrogate: Bromochlorobenzene		117 %	80-12	20	1432001	08/04/14	08/04/14	EPA 8021B	
Surrogate: 1,3-Dichlorobenzene		110 %	80-12	20	1432001	08/04/14	08/04/14	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	68.3	10.0	mg/kg	2	1432001	08/04/14	08/04/14	EPA 8015D	
Diesel Range Organics (C10-C28)	571	30.0	mg/kg	1	1432002	08/04/14	08/04/14	EPA 8015D	
Surrogate: Benzo[a]pyrene		68.8 %	50-20	00	1432002	08/04/14	08/04/14	EPA 8015D	



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Project Number: Project Manager: 97057-0352

Kyle Summers-Apex TITAN

Reported: 05-Aug-14 09:44

#### C-2

#### P408003-02 (Solid)

		Reporting						
Analyte	Result	Limit	Units Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021								
Benzene	ND	0.05	mg/kg 1	1432001	08/04/14	08/04/14	EPA 8021B	
Toluene	5.26	0.05	mg/kg 1	1432001	08/04/14	08/04/14	EPA 8021B	
Ethylbenzene	1.28	0.05	mg/kg l	1432001	08/04/14	08/04/14	EPA 8021B	
p,m-Xylene	13.2	0.05	mg/kg 1	1432001	08/04/14	08/04/14	EPA 8021B	
o-Xylene	2.92	0.05	mg/kg 1	1432001	08/04/14	08/04/14	EPA 8021B	
Total Xylenes	16.1	0.05	mg/kg 1	1432001	08/04/14	08/04/14	EPA 8021B	
Total BTEX	22.6	0.05	mg/kg 1	1432001	08/04/14	08/04/14	EPA 8021B	
Surrogate: 1,3-Dichlorobenzene		121 %	80-120	1432001	08/04/14	08 04 14	EPA 8021B	S-02
Surrogate: Bromochlorobenzene		149 %	80-120	1432001	08/04/14	08 04 14	EPA 8021B	S-02
Nonhalogenated Organics by 8015								
Gasoline Range Organics (C6-C10)	102	4.99	mg/kg 1	1432001	08/04/14	08/04/14	EPA 8015D	
Diesel Range Organics (C10-C28)	7870	69.9	mg/kg 3	1432002	08/04/14	08/04/14	EPA 8015D	
Surrogate: Benzo[a]pyrene		164 %	50-200	1432002	08/04/14	08/04/14	EPA 8015D	



Farmington NM, 87401

Lat K-31

614 Reilly Ave

Project Name: Project Number:

97057-0352

Project Manager:

Kyle Summers-Apex TITAN

Reported:

05-Aug-14 09:44

## C-3

#### P408003-03 (Solid)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	0.61	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Toluene	12.3	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Ethylbenzene	1.95	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
p,m-Xylene	16.9	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
o-Xylene	3.60	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Total Xylenes	20.5	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Total BTEX	35.4	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Surrogate: Bromochlorobenzene		168 %	80-1	20	1432001	08/04/14	08/04/14	EPA 8021B	S-02
Surrogate: 1,3-Dichlorobenzene		112 %	80-1	20	1432001	08/04/14	08 04 14	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	140	5.00	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8015D	
Diesel Range Organics (C10-C28)	7940	69.9	mg/kg	3	1432002	08/04/14	08/04/14	EPA 8015D	
Surrogate: Benzo[a]pyrene		157 %	50-2	00	1432002	08/04/14	08/04/14	EPA 8015D	



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Project Number:

97057-0352

Project Manager: Kyle Summers-Apex TITAN

Reported: 05-Aug-14 09:44

## C-4

## P408003-04 (Solid)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Toluene	0.49	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Ethylbenzene	0.11	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
p,m-Xylene	2.99	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
o-Xylene	0.62	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Total Xylenes	3.61	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Total BTEX	4.21	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Surrogate: 1,3-Dichlorobenzene		139 %	80-	120	1432001	08/04/14	08 04 14	EPA 8021B	S-02
Surrogate: Bromochlorobenzene		147 %	80-	120	1432001	08 04 14	08 04 14	EPA 8021B	S-02
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	48.6	4.99	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8015D	
Diesel Range Organics (C10-C28)	812	30.0	mg/kg	1	1432002	08/04/14	08/04/14	EPA 8015D	
Surrogate: Benzo[a]pyrene		75.6 %	50-	200	1432002	08/04/14	08 04 14	EPA 8015D	



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Project Number: Project Manager: 97057-0352

Kyle Summers-Apex TITAN

Reported:

05-Aug-14 09:44

C-5 P408003-05 (Solid)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Toluene	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Ethylbenzene	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
p,m-Xylene	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
o-Xylene	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Total Xylenes	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Total BTEX	ND	0.05	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8021B	
Surrogate: 1,3-Dichlorobenzene		101 %	80-1	120	1432001	08/04/14	08/04/14	EPA 8021B	
Surrogate: Bromochlorobenzene		106 %	80-1	120	1432001	08/04/14	08/04/14	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	4.99	mg/kg	1	1432001	08/04/14	08/04/14	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1	1432002	08/04/14	08/04/14	EPA 8015D	
Surrogate: Benzo[a]pyrene		84.8 %	50-2	200	1432002	08/04/14	08/04/14	EPA 8015D	



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Amalasta

Project Number:

97057-0352

Spike

Level

Project Manager:

Reporting

60.3

70.0

Limit

Kyle Summers-Apex TITAN

Source

Recult

%RFC

121

140

80-120

80-120

**Reported:** 05-Aug-14 09:44

RPD

Limit

%REC

Limits

RPD

#### Volatile Organics by EPA 8021 - Quality Control

#### **Envirotech Analytical Laboratory**

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1432001 - Purge and Trap EPA 5030A										
Blank (1432001-BLK1)				Prepared &	Analyzed:	04-Aug-14	4			
Benzene	ND	0.05	mg/kg							
Toluene	ND	0.05	"							
Ethylbenzene	ND	0.05	"							
p,m-Xylene	ND	0.05	**							
o-Xylene	ND	0.05	**							
Total Xylenes	ND	0.05	"							
Total BTEX	ND	0.05	"							
Surrogate: 1,3-Dichlorobenzene	52.5		ug L	50.0		105	80-120			
Surrogate: Bromochlorobenzene	54.0		"	50.0		108	80-120			
Duplicate (1432001-DUP1)	Sour	ce: P408003-	01	Prepared &	Analyzed:	04-Aug-1	4			
Benzene	ND	0.05	mg/kg		ND				30	
Toluene	1.71	0.05	"		1.74			1.72	30	
Ethylbenzene	0.35	0.05	"		ND				30	
p,m-Xylene	4.95	0.05	**		3.72			28.6	30	
o-Xylene	1.02	0.05	"		0.53			62.8	30	D1
Surrogate: 1,3-Dichlorobenzene	63.2		ug L	50.0		126	80-120			S-0
Surrogate: Bromochlorobenzene	72.1		"	50.0		144	80-120			S-0
Matrix Spike (1432001-MS1)	Sour	ce: P408003-	01	Prepared &	a Analyzed	04-Aug-1	4			
Benzene	49.4		ug/L	50.0	ND	98.8	39-150			
Toluene	75.5			50.0	34.8	81.4	46-148			
Ethylbenzene	53.5			50.0	0.66	106	32-160			
p,m-Xylene	174			100	74.3	99.4	46-148			
o-Xylene	66.3			50.0	10.7	111	46-148			

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Surrogate: 1,3-Dichlorobenzene

Surrogate: Bromochlorobenzene

50.0

50.0

S-02

S-02



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Project Number:

97057-0352

Project Manager:

Kyle Summers-Apex TITAN

Reported:

05-Aug-14 09:44

#### Nonhalogenated Organics by 8015 - Quality Control

#### **Envirotech Analytical Laboratory**

				0. 11			0/000		222	
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1432001 - Purge and Trap EPA 5030A										
Blank (1432001-BLK1)				Prepared &	Analyzed:	04-Aug-14				
Gasoline Range Organics (C6-C10)	ND	4.99	mg/kg							
Duplicate (1432001-DUP1)	Sour	ce: P408003-	01	Prepared &	Analyzed:	04-Aug-14				
Gasoline Range Organics (C6-C10)	68.6	4.99	mg/kg		68.3			0.417	30	
Matrix Spike (1432001-MS1)	Sour	ce: P408003-	01	Prepared &	Analyzed:	04-Aug-14				
Gasoline Range Organics (C6-C10)	1.60		mg/L	0.450	1.37	51.6	75-125			SPK1



Farmington NM, 87401

Diesel Range Organics (C10-C28)

Surrogate: Benzo[a]pyrene

Project Name:

Lat K-31

614 Reilly Ave

Analyte

Project Number:

97057-0352

Spike

Level

499

20.0

Project Manager:

Reporting

Limit

25.0

Result

597

18.6

Kyle Summers-Apex TITAN

Source

Result

ND

%REC

120

93.1

**Reported:** 05-Aug-14 09:44

RPD

Limit

20

Notes

%REC

Limits

38-132

50-200

RPD

4.56

#### Nonhalogenated Organics by 8015 - Quality Control

#### **Envirotech Analytical Laboratory**

Units

Blank (1432002-BLK1)				Prepared &	Analyzed	04-Aug-14		
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	. repaire c				
Surrogate: Benzo[a]pyrene	13.6		mg/L	20.0		68.0	50-200	
Matrix Spike (1432002-MS1)	Sourc	e: P408001-	-01	Prepared &	Analyzed:	04-Aug-14		
Diesel Range Organics (C10-C28)	625	24.9	mg/kg	499	ND	125	38-132	
Surrogate: Benzo[a]pyrene	21.3		mg L	20.0		106	50-200	
Matrix Spike Dup (1432002-MSD1)	Sourc	e: P408001-	-01	Prepared &	Analyzed:	04-Aug-14		

mg/kg

mgL



Farmington NM, 87401

Project Name:

Lat K-31

614 Reilly Ave

Project Number:

97057-0352

Project Manager:

Kyle Summers-Apex TITAN

Reported: 05-Aug-14 09:44

#### **Notes and Definitions**

SPK1 The spike recovery for this QC sample is outside of control limits.

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present

in the sample extract.

E Analyte was present at a concentration greater than the calibration curve upper limit.

D1 Duplicates or Matrix Spike Duplicates Relative Percent Difference exceeds control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

17270

## CHAIN OF CUSTODY RECORD

Client: Enterprise				ject Name / Location		1			(	000				A	NAL	/SIS	/ PAF	RAMI	ETER	RS				
Email results to: KSummers@Ape	2005.0	com	Sar	mpler Name:	m	ner	1				18021)	8260)	S			0								
Client Phone No.: 903-821-5603			Clie	ent No.: 970.5	7-0	352				(Method 8015)	(Method 8021)	(Method 8260)	RCRA 8 Metals	Cation / Anion		TCLP with H/P	ble 910-1	(418.1)	RIDE				e Cool	Sample Intact
Sample No./ Identification	Sample Date	Ł	•	Lab No.	of C	/Volume ontainers	HNO <sub>3</sub>	HCI HCI	ve	TPH (I	втех	voc (	RCRA	Cation	RCI	TCLP	CO Table	тРН (	CHLORIDE				Sample (	Sampl
2-1	8/1/14	12	0	P408003-01	1	x402				X	X												X	X
C-2		125	-5-	P408003-02						1													1	
C-3		130	20	P408063-03																				
C-4 C-5		130	25	P408003-04																				
2-5	4	131	0	P408063-05	7					4	V	1.1.											1	
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Relinquished by (Signature)					Date 8/1/19	Time 15 30	Rece	ived by	y: (S	ignat	ure)	R										Date 1/14		me 7,30
Relinquished by: (Signature)							Rece	ived by	y: (S	ignat	ure)													
Sample Matrix							Pa	V KO	N	7	G	GI	15	90										
Soil 🕅 Solid 🗆 Sludge 🗆																								
Sample(s) dropped offvafter	hours to s	secure dr	op of	f area.	3	env	ir (	ot (	e (	ch	1	7	M	n	4	.1		Xº	7	<u>_</u> و	5.	\		
5795 US Highway 6	4 • Farmin	gton, NM	8740	1 • 505-632-0615 • 1	hree Sp	rings • 65 N	/lerca	do Stre	eet, S	iuite 1	15, D	uran	go, C	0 81	301 •	labo	ratory	/@en	virote	ch-ind	c.con	n		



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

August 07, 2014

Kyle Summers Enterprise Field Services 614 Reilly Ave. Farmington, NM 87401

TEL: (505) 599-2141

FAX

RE: Lateral K-31 (2014) Release

OrderNo.: 1408233

#### Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/6/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

Only

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1408233

Date Reported: 8/7/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-6

Project: Lateral K-31 (2014) Release

Collection Date: 8/5/2014 3:15:00 PM

**Lab ID:** 1408233-001

Matrix: SOIL

Received Date: 8/6/2014 7:35:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/6/2014 12:24:19 PM	14626
Surr: DNOP	93.8	57.9-140	%REC	1	8/6/2014 12:24:19 PM	14626
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: KJH
Benzene	ND	0.033	mg/Kg	1	8/6/2014 12:18:14 PM	R20394
Toluene	ND	0.033	mg/Kg	1	8/6/2014 12:18:14 PM	R20394
Ethylbenzene	ND	0.033	mg/Kg	1	8/6/2014 12:18:14 PM	R20394
Xylenes, Total	ND	0.066	mg/Kg	1	8/6/2014 12:18:14 PM	R20394
Surr: 1,2-Dichloroethane-d4	89.4	70-130	%REC	1	8/6/2014 12:18:14 PM	R20394
Surr: 4-Bromofluorobenzene	83.8	70-130	%REC	1	8/6/2014 12:18:14 PM	R20394
Surr: Dibromofluoromethane	87.2	70-130	%REC	1	8/6/2014 12:18:14 PM	R20394
Surr: Toluene-d8	91.2	70-130	%REC	1	8/6/2014 12:18:14 PM	R20394
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: KJH
Gasoline Range Organics (GRO)	ND	3.3	mg/Kg	1	8/6/2014 12:18:14 PM	R20394
Surr: BFB	114	61.2-137	%REC	1	8/6/2014 12:18:14 PM	R20394

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

Page 1 of 5

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1408233

Date Reported: 8/7/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-7

Project: Lateral K-31 (2014) Release

Collection Date: 8/5/2014 3:18:00 PM

Lab ID: 1408233-002

Matrix: SOIL

Received Date: 8/6/2014 7:35:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analys	: BCN
Diesel Range Organics (DRO)	190	9.8	mg/Kg	1	8/6/2014 12:55:14 PM	14626
Surr: DNOP	101	57.9-140	%REC	1	8/6/2014 12:55:14 PM	14626
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analys	: KJH
Benzene	0.46	0.16	mg/Kg	5	8/6/2014 12:46:16 PM	R20394
Toluene	6.0	0.16	mg/Kg	5	8/6/2014 12:46:16 PM	R20394
Ethylbenzene	1.4	0.16	mg/Kg	5	8/6/2014 12:46:16 PM	R20394
Xylenes, Total	14	0.31	mg/Kg	5	8/6/2014 12:46:16 PM	R20394
Surr: 1,2-Dichloroethane-d4	86.1	70-130	%REC	5	8/6/2014 12:46:16 PM	R20394
Surr: 4-Bromofluorobenzene	107	70-130	%REC	5	8/6/2014 12:46:16 PM	R20394
Surr: Dibromofluoromethane	84.2	70-130	%REC	5	8/6/2014 12:46:16 PM	R20394
Surr: Toluene-d8	90.1	70-130	%REC	5	8/6/2014 12:46:16 PM	R20394
EPA METHOD 8015D MOD: GASOLI	NE RANGE				Analyst	: KJH
Gasoline Range Organics (GRO)	310	16	mg/Kg	5	8/6/2014 12:46:16 PM	R20394
Surr: BFB	101	61.2-137	%REC	5	8/6/2014 12:46:16 PM	R20394

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

Page 2 of 5

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408233

07-Aug-14

Client:

**Enterprise Field Services** 

**Project:** 

Surr: DNOP

Lateral K-31 (2014) Release

4.5

Sample ID MB-14626	SampType: MBLK	TestCode: EPA Method 8	015D: Diesel Range Organics
Client ID: PBS	Batch ID: 14626	RunNo: 20396	
Prep Date: 8/6/2014	Analysis Date: 8/6/2014	SeqNo: 593213	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 10		
Surr: DNOP	9.0 10.00	90.3 57.9	140
Sample ID LCS-14626	SampType: LCS	TestCode: EPA Method 8	015D: Diesel Range Organics
Client ID: LCSS	Batch ID: 14626	RunNo: 20396	
Prep Date: 8/6/2014	Analysis Date: 8/6/2014	SeqNo: 593214	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	45 10 50.00	0 90.5 68.6	130

5.000

89.9

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

Page 3 of 5

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1408233** 

07-Aug-14

Client:

Enterprise Field Services

**Project:** 

Lateral K-31 (2014) Release

Sample ID MB-14615MK	SampT	SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch	ID: R2	0394	R	unNo: 2	0394				
Prep Date:	Analysis D	ate: 8/	6/2014	S	eqNo: 5	93945	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
mp-Xylenes	ND	0.050								
o-Xylene	ND	0.050								
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.5	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.7	70	130			
Surr: Dibromofluoromethane	0.46		0.5000		91.3	70	130			
Surr: Toluene-d8	0.45		0.5000		90.6	70	130			

Sample ID LCS-14615MK	SampT	ype: LC	S	Tes	tCode: El	A Method	8260B: Volat	iles Short	List	
Client ID: LCSS	Batch	ID: <b>R2</b>	0394	R	RunNo: 20	0394				
Prep Date:	Analysis D	ate: 8/	6/2014	S	SeqNo: 59	93946	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.050	1.000	0	97.1	70	130			
Toluene	0.99	0.050	1.000	0	99.3	60.1	120			
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		87.9	70	130			
Surr: 4-Bromofluorobenzene	0.41		0.5000		82.9	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.0	70	130			
Surr: Toluene-d8	0.46		0.5000		91.5	70	130			

## 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

Page 4 of 5

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1408233

07-Aug-14

Client:

Enterprise Field Services

Project:

Lateral K-31 (2014) Release

Sample ID MB-14615MK

SampType: MBLK

PQL

5.0

TestCode: EPA Method 8015D Mod: Gasoline Range

LowLimit

61.2

Client ID:

Batch ID: R20394

RunNo: 20394

Prep Date:

Analysis Date: 8/6/2014

%REC

SeqNo: 593947

Units: mg/Kg

Analyte

Surr: BFB

ND 480

Result

500.0

SPK value SPK Ref Val

SPK value SPK Ref Val

0

HighLimit

%RPD **RPDLimit** 

Qual

Gasoline Range Organics (GRO)

SampType: LCS

95.1

137

Sample ID LCS-14615MK

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS

Batch ID: R20394

RunNo: 20394

Prep Date:

Analysis Date: 8/6/2014

PQL

5.0

SeqNo: 593948 %REC

Units: mg/Kg

%RPD **RPDLimit** HighLimit Qual

Analyte Gasoline Range Organics (GRO) Surr: BFB

30 560

Result

25.00 500.0

118 113

61.2

LowLimit

80 120 137

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range E

Analyte detected below quantitation limits

0 RSD is greater than RSDlimit

RPD outside accepted recovery limits R

Spike Recovery outside accepted recovery limits

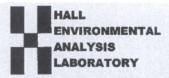
В Analyte detected in the associated Method Blank

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 Page 5 of 5



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: **Enterprise** Work Order Number: 1408233 RcptNo: 1 AT08/06/14 Received by/date: anne Home 8/6/2014 7:35:00 AM Logged By: **Anne Thorne** 8/6/2014 Completed By: **Anne Thorne** 08/06/14 Reviewed By: Chain of Custody Yes No 🗌 Not Present V 1 Custody seals intact on sample bottles? No T Yes V Not Present 2. Is Chain of Custody complete? 3 How was the sample delivered? Courier Log In Yes V NA 4. Was an attempt made to cool the samples? No L 5. Were all samples received at a temperature of >0° C to 6.0°C Yes V No | NA Yes V No 6. Sample(s) in proper container(s)? Yes V No 🗌 7. Sufficient sample volume for indicated test(s)? Yes V No L 8. Are samples (except VOA and ONG) properly preserved? No V 9. Was preservative added to bottles? Yes NA L No VOA Vials No . 10. VOA vials have zero headspace? Yes Yes No V 11. Were any sample containers received broken? # of preserved bottles checked No for pH: 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 13. Are matrices correctly identified on Chaln of Custody? Yes Yes 🗸 No L 14 is it clear what analyses were requested? Checked by: Yes V 15. Were all holding times able to be met? No L (If no, notify customer for authorization.) Special Handling (if applicable) NA V 16. Was client notified of all discrepancies with this order? Yes No 🗌 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 Good Yes

Client	hain-	of-Cu	stody Record	Turn-Around		÷ ^	HALL ENVIRONM			1EN	TA	L								
Ollent.	Enters	orise F	ield Services UC	☐ Standard Project Name	∦ Rush	Same Day 2014) Release		The state of the s										RAT	OR	LY
Mailing	Addross											v.hal								
Ivialility	Address	614	Reilly Avenue	Latera	K-31 (	2014) Release	4901 Hawkins NE - Albuquerque, NM 87109													
Far	mingto	m, NN	2787	Project #:				Te	el. 50	5-34	5-39	10000	-	-	-	-	4107			
				No.	10.00							Α	naly	/sis	Req	uesi				
email or	Fax#:	woods	eapexcos.com	Project Mana	ger:		=	(yluk)	MERO					04)	co.					
QA/QC F	ackage: dard		☐ Level 4 (Full Validation)	K. Sum	Wh. 2		(8021)	TPH (Gas only)	DRO / M			SIMS)		,PO4,S	2 PCB's					
Accredi		□ Othe	r	Sampler: H.	Woods Z Yes	™ No.	1	+ TPH	-	18.1)	04.1)	8270		3,NO	/ 808		A)			or N
□ EDD	(Type)_	1.00		Sample Temp		3.6	A	BE.	(GF	4 p	d 5	Oor	tals	I,NC	ides	2	.00			2
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	14/8233	BTEX + MEE	BTEX + MTBE	TPH 8015B (GRO	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)			Air Bubbles (Y or N)
315/14	1515	Soil	C-6	MUDH KIL 1-402	MeoH Cold	-11	X	NA.	X											6 P
117-53-45	1518	Control of the second	C-7	MIOH K'S	MICH COLD	-702	X		X											
Date:	Time:	Relinquishe	the M. Woods	Received by: Mistr	Waste	Date Time	Rer	nark	s:											
Daté:	Time:	Relinquished	istubels  inited to Hall Environmental may be subc	Received by:	Men.	Date Time 08/04/	133	hilitr	Anver	ıb.com	mote	l data	uill b-	ole = -	w m=4-	tod ==	the -	nh dia -1 -		
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

August 12, 2014

Kyle Summers Enterprise Field Services 614 Reilly Ave. Farmington, NM 87401

TEL: (505) 599-2141 FAX

RE: Lateral K-31 (2014) Releases OrderNo.: 1408298

#### Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/7/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Enterprise Field Services Client Sample ID: C-8

Project: Lateral K-31 (2014) Releases Collection Date: 8/6/2014 1:30:00 PM

Lab ID: 1408298-001 Matrix: MEOH (SOIL) Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	920	10	mg/Kg	1	8/7/2014 10:16:11 AM	14641
Surr: DNOP	106	57.9-140	%REC	1	8/7/2014 10:16:11 AM	14641
EPA METHOD 8260B: VOLATILES SI	HORT LIST				Analys	: KJH
Benzene	0.43	0.33	mg/Kg	10	8/7/2014 10:08:58 AM	R20435
Toluene	12	0.33	mg/Kg	10	8/7/2014 10:08:58 AM	R20435
Ethylbenzene	5.4	0.33	mg/Kg	10	8/7/2014 10:08:58 AM	R20435
Xylenes, Total	54	0.65	mg/Kg	10	8/7/2014 10:08:58 AM	R20435
Surr: 1,2-Dichloroethane-d4	89.8	70-130	%REC	10	8/7/2014 10:08:58 AM	R20435
Surr: 4-Bromofluorobenzene	111	70-130	%REC	10	8/7/2014 10:08:58 AM	R20435
Surr: Dibromofluoromethane	87.4	70-130	%REC	10	8/7/2014 10:08:58 AM	R20435
Surr: Toluene-d8	92.2	70-130	%REC	10	8/7/2014 10:08:58 AM	R20435
EPA METHOD 8015D MOD: GASOLIN	NE RANGE				Analys	: KJH
Gasoline Range Organics (GRO)	1100	33	mg/Kg	10	8/7/2014 10:08:58 AM	R20435
Surr: BFB	103	61.2-137	%REC	10	8/7/2014 10:08:58 AM	R20435

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

Page 1 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-9

Project: Lateral K-31 (2014) Releases

Collection Date: 8/6/2014 1:27:00 PM

**Lab ID:** 1408298-002

Matrix: MEOH (SOIL)

Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/7/2014 10:37:38 AM	14641
Surr: DNOP	98.7	57.9-140	%REC	1	8/7/2014 10:37:38 AM	14641
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst	: KJH
Benzene	ND	0.042	mg/Kg	1	8/7/2014 11:05:01 AM	R20435
Toluene	0.13	0.042	mg/Kg	1	8/7/2014 11:05:01 AM	R20435
Ethylbenzene	ND	0.042	mg/Kg	1	8/7/2014 11:05:01 AM	R20435
Xylenes, Total	0.48	0.084	mg/Kg	1	8/7/2014 11:05:01 AM	R20435
Surr: 1,2-Dichloroethane-d4	87.2	70-130	%REC	1	8/7/2014 11:05:01 AM	R20435
Surr: 4-Bromofluorobenzene	84.8	70-130	%REC	1	8/7/2014 11:05:01 AM	R20435
Surr: Dibromofluoromethane	85.4	70-130	%REC	1	8/7/2014 11:05:01 AM	R20435
Surr: Toluene-d8	88.3	70-130	%REC	1	8/7/2014 11:05:01 AM	R20435
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: KJH
Gasoline Range Organics (GRO)	17	4.2	mg/Kg	1	8/7/2014 11:05:01 AM	R20435
Surr: BFB	113	61.2-137	%REC	1	8/7/2014 11:05:01 AM	R20435

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

Page 2 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-10

Project: Lateral K-31 (2014) Releases

Collection Date: 8/6/2014 2:00:00 PM

Lab ID: 1408298-003

Matrix: MEOH (SOIL)

Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analys	BCN
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	8/7/2014 11:49:33 AM	14641
Surr: DNOP	0	57.9-140	S	%REC	10	8/7/2014 11:49:33 AM	14641
EPA METHOD 8260B: VOLATILES SH	ORT LIST					Analys	: KJH
Benzene	0.88	0.71		mg/Kg	20	8/7/2014 10:37:01 AM	R20435
Toluene	36	0.71		mg/Kg	20	8/7/2014 10:37:01 AM	R20435
Ethylbenzene	9.7	0.71		mg/Kg	20	8/7/2014 10:37:01 AM	R20435
Xylenes, Total	91	1.4		mg/Kg	20	8/7/2014 10:37:01 AM	R20435
Surr: 1,2-Dichloroethane-d4	91.4	70-130		%REC	20	8/7/2014 10:37:01 AM	R20435
Surr: 4-Bromofluorobenzene	104	70-130		%REC	20	8/7/2014 10:37:01 AM	R20435
Surr: Dibromofluoromethane	85.6	70-130		%REC	20	8/7/2014 10:37:01 AM	R20435
Surr: Toluene-d8	92.2	70-130		%REC	20	8/7/2014 10:37:01 AM	R20435
EPA METHOD 8015D MOD: GASOLIN	E RANGE					Analys	: KJH
Gasoline Range Organics (GRO)	1900	71		mg/Kg	20	8/7/2014 10:37:01 AM	R20435
Surr: BFB	103	61.2-137		%REC	20	8/7/2014 10:37:01 AM	R20435

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

Page 3 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-11

Project: Lateral K-31 (2014) Releases

Collection Date: 8/6/2014 2:02:00 PM

**Lab ID:** 1408298-004

Matrix: MEOH (SOIL) Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	78	9.9	mg/Kg	1	8/7/2014 11:20:29 AM	14641
Surr: DNOP	105	57.9-140	%REC	1	8/7/2014 11:20:29 AM	14641
EPA METHOD 8260B: VOLATILES SH	ORT LIST				Analyst	: KJH
Benzene	1.2	0.30	mg/Kg	10	8/7/2014 1:53:10 PM	R20435
Toluene	9.8	0.30	mg/Kg	10	8/7/2014 1:53:10 PM	R20435
Ethylbenzene	2.0	0.30	mg/Kg	10	8/7/2014 1:53:10 PM	R20435
Xylenes, Total	19	0.61	mg/Kg	10	8/7/2014 1:53:10 PM	R20435
Surr: 1,2-Dichloroethane-d4	89.3	70-130	%REC	10	8/7/2014 1:53:10 PM	R20435
Surr: 4-Bromofluorobenzene	89.6	70-130	%REC	10	8/7/2014 1:53:10 PM	R20435
Surr: Dibromofluoromethane	86.6	70-130	%REC	10	8/7/2014 1:53:10 PM	R20435
Surr: Toluene-d8	91.7	70-130	%REC	10	8/7/2014 1:53:10 PM	R20435
EPA METHOD 8015D MOD: GASOLIN	E RANGE				Analyst	: KJH
Gasoline Range Organics (GRO)	390	30	mg/Kg	10	8/7/2014 1:53:10 PM	R20435
Surr: BFB	97.6	61.2-137	%REC	10	8/7/2014 1:53:10 PM	R20435

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

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- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Enterprise Field Services

Client Sample ID: C-12

Project: Lateral K-31 (2014) Releases

Collection Date: 8/6/2014 2:25:00 PM

Lab ID: 1408298-005

Matrix: MEOH (SOIL)

Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/7/2014 12:19:36 PM	14641
Surr: DNOP	93.0	57.9-140	%REC	1	8/7/2014 12:19:36 PM	14641
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst	: KJH
Benzene	0.19	0.036	mg/Kg	1	8/7/2014 2:21:05 PM	R20435
Toluene	0.74	0.036	mg/Kg	1	8/7/2014 2:21:05 PM	R20435
Ethylbenzene	0.21	0.036	mg/Kg	1	8/7/2014 2:21:05 PM	R20435
Xylenes, Total	2.7	0.072	mg/Kg	1	8/7/2014 2:21:05 PM	R20435
Surr: 1,2-Dichloroethane-d4	80.7	70-130	%REC	1	8/7/2014 2:21:05 PM	R20435
Surr: 4-Bromofluorobenzene	86.3	70-130	%REC	1	8/7/2014 2:21:05 PM	R20435
Surr: Dibromofluoromethane	80.8	70-130	%REC	1	8/7/2014 2:21:05 PM	R20435
Surr: Toluene-d8	92.6	70-130	%REC	1	8/7/2014 2:21:05 PM	R20435
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	: KJH
Gasoline Range Organics (GRO)	30	3.6	mg/Kg	1	8/7/2014 2:21:05 PM	R20435
Surr: BFB	112	61.2-137	%REC	1	8/7/2014 2:21:05 PM	R20435

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

Page 5 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-13

Project: Lateral K-31 (2014) Releases

**Collection Date:** 8/6/2014 3:14:00 PM

**Lab ID:** 1408298-006

Matrix: MEOH (SOIL)

Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analys	t: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/8/2014 10:05:33 AM	14641
Surr: DNOP	103	57.9-140	%REC	1	8/8/2014 10:05:33 AM	14641
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analys	t: <b>KJH</b>
Benzene	ND	0.040	mg/Kg	1	8/7/2014 12:29:05 PM	R20435
Toluene	0.15	0.040	mg/Kg	1	8/7/2014 12:29:05 PM	R20435
Ethylbenzene	0.052	0.040	mg/Kg	1	8/7/2014 12:29:05 PM	R20435
Xylenes, Total	0.59	0.081	mg/Kg	1	8/7/2014 12:29:05 PM	R20435
Surr: 1,2-Dichloroethane-d4	85.4	70-130	%REC	1	8/7/2014 12:29:05 PM	R20435
Surr: 4-Bromofluorobenzene	80.2	70-130	%REC	1	8/7/2014 12:29:05 PM	R20435
Surr: Dibromofluoromethane	86.6	70-130	%REC	1	8/7/2014 12:29:05 PM	R20435
Surr: Toluene-d8	89.8	70-130	%REC	1	8/7/2014 12:29:05 PM	R20435
EPA METHOD 8015D MOD: GASOLI	NE RANGE				Analys	t: KJH
Gasoline Range Organics (GRO)	13	4.0	mg/Kg	1	8/7/2014 12:29:05 PM	R20435
Surr: BFB	112	61.2-137	%REC	1	8/7/2014 12:29:05 PM	R20435

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 Page 6 of 11
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-14

Project: Lateral K-31 (2014) Releases

Collection Date: 8/6/2014 4:10:00 PM

**Lab ID:** 1408298-007

Matrix: MEOH (SOIL)

Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	8/7/2014 10:16:55 AM	14641
Surr: DNOP	96.3	57.9-140	%REC	1	8/7/2014 10:16:55 AM	14641
EPA METHOD 8260B: VOLATILES SH	ORT LIST				Analyst	: KJH
Benzene	0.19	0.037	mg/Kg	1	8/7/2014 12:57:07 PM	R20435
Toluene	0.63	0.037	mg/Kg	1	8/7/2014 12:57:07 PM	R20435
Ethylbenzene	0.066	0.037	mg/Kg	1	8/7/2014 12:57:07 PM	R20435
Xylenes, Total	0.69	0.073	mg/Kg	1	8/7/2014 12:57:07 PM	R20435
Surr: 1,2-Dichloroethane-d4	81.7	70-130	%REC	1	8/7/2014 12:57:07 PM	R20435
Surr: 4-Bromofluorobenzene	84.7	70-130	%REC	1	8/7/2014 12:57:07 PM	R20435
Surr: Dibromofluoromethane	84.3	70-130	%REC	1	8/7/2014 12:57:07 PM	R20435
Surr: Toluene-d8	88.9	70-130	%REC	1	8/7/2014 12:57:07 PM	R20435
EPA METHOD 8015D MOD: GASOLIN	E RANGE				Analyst	: KJH
Gasoline Range Organics (GRO)	11	3.7	mg/Kg	1	8/7/2014 12:57:07 PM	R20435
Surr: BFB	109	61.2-137	%REC	1	8/7/2014 12:57:07 PM	R20435

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

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- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1408298

Date Reported: 8/12/2014

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-15

Project: Lateral K-31 (2014) Releases

Collection Date: 8/6/2014 4:15:00 PM

Lab ID: 1408298-008

Matrix: MEOH (SOIL) Received Date: 8/7/2014 7:45:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch		
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN		
Diesel Range Organics (DRO)	180	9.9	mg/Kg	1	8/7/2014 10:47:30 AM	14641		
Surr: DNOP	105	57.9-140	%REC	1	8/7/2014 10:47:30 AM	14641		
EPA METHOD 8260B: VOLATILES SH	ORT LIST				Analyst	: KJH		
Benzene	0.77	0.35	mg/Kg	10	8/7/2014 2:49:03 PM	R20435		
Toluene	11	0.35	mg/Kg	10	8/7/2014 2:49:03 PM	R20435		
Ethylbenzene	2.6	0.35	mg/Kg	10	8/7/2014 2:49:03 PM	R20435		
Xylenes, Total	28	0.69	mg/Kg	10	8/7/2014 2:49:03 PM	R20435		
Surr: 1,2-Dichloroethane-d4	89.4	70-130	%REC	10	8/7/2014 2:49:03 PM	R20435		
Surr: 4-Bromofluorobenzene	94.8	70-130	%REC	10	8/7/2014 2:49:03 PM	R20435		
Surr: Dibromofluoromethane	87.4	70-130	%REC	10	8/7/2014 2:49:03 PM	R20435		
Surr: Toluene-d8	92.2	70-130	%REC	10	8/7/2014 2:49:03 PM	R20435		
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: KJH			
Gasoline Range Organics (GRO)	510	35	mg/Kg	10	8/7/2014 2:49:03 PM	R20435		
Surr: BFB	98.4	61.2-137	%REC	10	8/7/2014 2:49:03 PM	R20435		

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
  - Page 8 of 11
- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1408298

12-Aug-14

Client:

Enterprise Field Services

Project:

Analyte

Surr: DNOP

Lateral K-31 (2014) Releases

Sample ID MB-14641

Result

ND

9.5

SampType: MBLK

Batch ID: 14641

PQL

10

TestCode: EPA Method 8015D: Diesel Range Organics RunNo: 20418

%REC

Client ID:

PBS

Prep Date: 8/7/2014

Analysis Date: 8/7/2014

SeqNo: 594027

HighLimit

Units: mg/Kg

**RPDLimit** 

Qual

Diesel Range Organics (DRO)

SampType: LCS

SPK value SPK Ref Val

10.00

50.00

5.000

10.00

SPK value SPK Ref Val

95.4

57.9

LowLimit

LowLimit

68.6

57.9

Sample ID LCS-14641

Client ID: LCSS

TestCode: EPA Method 8015D: Diesel Range Organics

140

Prep Date: 8/7/2014

Batch ID: 14641 Analysis Date: 8/7/2014

PQL

RunNo: 20418

%REC

102

91.8

Units: mg/Kg

SeqNo: 594028

%RPD HighLimit

%RPD

**RPDLimit** Qual

Diesel Range Organics (DRO) Surr: DNOP

Sample ID MB-14665

SampType: MBLK

51

4.6

9.4

TestCode: EPA Method 8015D: Diesel Range Organics

140

130

140

Client ID: Prep Date:

Analyte

PBS

Batch ID: 14665

Analysis Date: 8/8/2014

RunNo: 20455

Units: %REC

Analyte Surr: DNOP

8/8/2014

SPK value SPK Ref Val %REC

SeqNo: 595005

94.1

LowLimit HighLimit %RPD **RPDLimit** 

Qual

Sample ID LCS-14665

SampType: LCS

TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: LCSS Prep Date:

8/8/2014

Batch ID: 14665 Analysis Date: 8/8/2014 RunNo: 20455

57.9

Units: %REC

5.000

SPK value SPK Ref Val %REC

SeqNo: 595061

LowLimit

Analyte Surr: DNOP

4.8

Result

HighLimit

%RPD

**RPDLimit** 

Qual

95.5

57.9

140

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

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1408298

12-Aug-14

Client:

Enterprise Field Services

Project:

Lateral K-31 (2014) Releases

	(====	,								
Sample ID 100ng Ics	Samp	Type: LC	s	TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: LCSS	Batch ID: R20435			RunNo: 20435						
Prep Date:	Analysis Date: 8/7/2014			SeqNo: 594661			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	70	130			
Toluene	1.0	0.050	1.000	0	102	60.1	120			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.8	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		87.7	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.7	70	130			
Surr: Toluene-d8	0.46		0.5000		92.0	70	130			
Sample ID vcb	Samp	Гуре: МЕ	BLK	TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: PBS	Batch ID: R20435			RunNo: 20435						
Prep Date:	Analysis Date: 8/7/2014			SeqNo: 594663			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
mp-Xylenes	ND	0.050								
o-Xylene	ND	0.050								
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		85.2	70	130			
Surr: 4-Bromofluorobenzene	0.43		0.5000		85.6	70	130			
Surr: Dibromofluoromethane	0.43		0.5000		85.4	70	130			
our. Dibromondorometrarie	0.43		0.5000		00.4	10	130			
Surr: Toluene-d8	0.47		0.5000		93.2	70	130			

#### 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

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### Hall Environmental Analysis Laboratory, Inc.

WO#: 1408298

12-Aug-14

Client: Project:

Enterprise Field Services Lateral K-31 (2014) Releases

Sample ID vcb

SampType: MBLK

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: PBS

Batch ID: R20435

PQL

5.0

RunNo: 20435

%REC

Prep Date:

Analysis Date: 8/7/2014

SeqNo: 594478

Units: mg/Kg

HighLimit

Qual

Analyte Gasoline Range Organics (GRO) Result ND 540

Result

500.0

25.00

500.0

25.00

500.0

SPK value SPK Ref Val

SPK value SPK Ref Val

16.58

16.58

SPK value SPK Ref Val

108

LowLimit

612

%RPD

**RPDLimit** 

Surr: BFB

SampType: LCS

TestCode: EPA Method 8015D Mod: Gasoline Range

137

Sample ID 2.5ug lcs GRO Client ID: LCSS

RunNo: 20435

Batch ID: R20435

SegNo: 594655

Units: mg/Kg

Prep Date: Analyte

Analysis Date: 8/7/2014 PQL

HighLimit

%RPD

Gasoline Range Organics (GRO)

Sample ID 1408298-002a ms

28 5.0 500

SPK value SPK Ref Val %REC LowLimit 112

80 120 61.2 137 **RPDLimit** Qual

Surr: BFB

SampType: MS

100

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID:

Batch ID: R20435

PQL

RunNo: 20435

%REC

87.9

106

HighLimit

Prep Date:

Analysis Date: 8/7/2014

5.0

SeqNo: 594657

LowLimit

58

61.2

Units: mg/Kg

134

137

**RPDLimit** Qual

Qual

Analyte Gasoline Range Organics (GRO) Surr: BFB

39 530

TestCode: EPA Method 8015D Mod: Gasoline Range

%RPD

Sample ID 1408298-002a msd Client ID: C-9

SampType: MSD Batch ID: R20435

RunNo: 20435

Prep Date:

Analysis Date: 8/7/2014

PQL

5.0

SeqNo: 594658

Units: mg/Kg

HighLimit

%RPD **RPDLimit** 

Analyte Gasoline Range Organics (GRO) Surr: BFB

41 550

Result

25.00 500.0 %REC 96.0 110

LowLimit 58 61.2

134 137

5.13 0

20

0

#### Qualifiers:

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

Page 11 of 11

Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Client Name: Enterprise	Work Order Number:	1408298		RcptNo: 1	
		1			
Received by/date:	08/01/19	1			
Logged By: Ashley Gallegos	8/7/2014 7:45:00 AM		547		
Completed By: Ashley Gallegos	8/7/2014 7:52:42 AM		A		
Reviewed By:	08/07/14				
Chain of Custody					
1. Custody seals intact on sample bottles?		Yes [	No 1	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 samp	les?	Yes 🗸	No	NA	
5. Were all samples received at a tempera	ture of >0° C to 6.0°C	Yes 🗸	No 1	NA :	
6. Sample(s) in proper container(s)?		Yes 🗸	No :		
7. Sufficient sample volume for indicated to	est(s)?	Yes V	No		
8. Are samples (except VOA and ONG) pro	operly preserved?	Yes 🗸	No		
9. Was preservative added to bottles?		Yes	No V	NA	
10.VOA vials have zero headspace?		Yes	No !!	No VOA Vials ✔	
11. Were any sample containers received by	proken?	Yes	No V		
				# of preserved bottles checked	
12. Does paperwork match bottle labels?		Yes 🗸	No	for pH:	> 40
(Note discrepancies on chain of custody		v 60	No	Adjusted?	>12 unless noted)
13. Are matrices correctly identified on Cha		Yes V	No :		
14. Is it clear what analyses were requested	11	Yes V	No	Checked by:	
15. Were all holding times able to be met?  (If no, notify customer for authorization.)		165 .			
Special Handling (If applicable)					
16. Was client notified of all discrepancies	with this order?	Yes :	No I	NA V	
Person Notified:	Date:				
By Whom:	Via:	eMail	Phone Fax	In Person	
Regarding:	A STATE OF THE STA	DOMESTIC CONTRACTOR OF THE STATE OF THE STAT	CANADA CA		
Client Instructions:		COLUMN TO SERVICE ASSESSMENT			
17. Additional remarks:					
18. Cooler Information  Cooler No   Temp °C   Condition	Seal Intact   Seal No	Seal Date	Signed By		
1 1.0 Good	Yes				

C	hain-	of-Cu	stody Record	Turn-Around							IAI		E	MIN	TE	0	NIM	ENT	FAI	
Client:	Entern	rise Fil	Ud Services	□ Standard	₩ Rush	Same Day 2014) Releases													ORY	,
				Project Name	:	•									nent					
Mailing	Address	614 6	Reilly Avenue	Lateral	K-31 (2	2014) Releases		490	)1 H	awki	ns N	IE -	Alb	uque	erque	e, NN	M 871	09		
Fave	ninator		8740)	Project #:				Те	1. 50	5-34	5-39	975	F	ax	505-	345-	4107			
Phone #	#: (505	3)716	-2787									A	naly	sis	Req	uest	A THE			
email or				Project Mana	ger:		1	nly)	MRO)					04)	10					
QA/QC F	Package:						(8021)	TPH (Gas only)	-			(8)		3,4	PCB's					
Stan		Transfer St.	☐ Level 4 (Full Validation)	K. Sum	CONTRACTOR OF THE PARTY OF THE		3's (	1 (G	DRO			SIMS)		2,PC						
Accredi  ☐ NEL		□ Othe		Sampler: 以	Woods		TMB's	TP	-	418.1)	1.1	8270		CI,NO3,NO2,PO4,SO4)	8082					Ê
□ EDD		- Othe		Sample Tem	Yes perature	T D	+ =	+	(GRO	1418	1 50	or 8	als	NO3	les /		YON I			Yor
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		BTEX + MTBE	BTEX + MTBE	TPH 8015B (	TPH (Method	EDB (Method 504.1)	PAH's (8310 or	RCRA 8 Metals	Anions (F,CI,	8081 Pesticides	8260B (VOA)	8270 (Semi-VOA)			Air Bubbles (Y or N)
3/6/14	1330	50:1	C-8	Me OHIC'LE	MeOH Cold	The state of the s	×		X							-				
16/14	Mark Andrews		C-9	1		-002	X		X											
1614	1400	Soil	C-10			-003	X		X											1
16114	1402	Soil	C-11			7004	X		X											A.
a week a service of	1425	The state of the state of	C-12			7005	X		X											
	1514		C-13			-1006	X		X											
The state of the s	T. V. S. C. S. C.	5021	C-14			-007	×		×											
A STATE OF THE PARTY OF THE PAR	THE TOTAL PROPERTY.	Soil	C-15	1	Ţ	-008	×		X											
																				-
Date:	Time:	Relinquishe	ed by:	Received by:	\	Qate Time	Rer	narks	3:					2.63						
16/14	1840	Hoa	the M. Woods	Mistry	Mala	8/6/4 1848														
Date:	Time:	Relinquishe		Received by:	1	Date Time														
611	1920	1.hn	istervalter &		080	7/14 0745														
r II	necessary,	samples subr	mitted to Hall Environmental may be sub-	contracted to other a	ocredited laboratorie	es. This serves as notice of this	possi	bility. /	Any su	ib-cont	racted	data	will be	clear	y nota	ted on	the anal	ytical repo	ort.	



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

August 14, 2014

Kyle Summers
Enterprise Field Services
614 Reilly Ave.
Farmington, NM 87401
TEL: (505) 599-2141

FAX

RE: Lateral K-31 (2014)

OrderNo.: 1408415

#### Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/9/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

## Lab Order 1408415 Date Reported: 8/14/2014

Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Enterprise Field Services

Client Sample ID: C-16

Project: Lateral K-31 (2014)

Collection Date: 8/8/2014 11:40:00 AM

Lab ID: 1408415-001

Matrix: SOIL

Received Date: 8/9/2014 9:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	t: BCN
Diesel Range Organics (DRO)	43	9.8	mg/Kg	1	8/14/2014 2:13:57 AM	14691
Surr: DNOP	99.2	57.9-140	%REC	1	8/14/2014 2:13:57 AM	14691
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	8/12/2014 4:45:54 PM	14696
Surr: BFB	87.7	80-120	%REC	1	8/12/2014 4:45:54 PM	14696
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.049	mg/Kg	1	8/12/2014 4:45:54 PM	14696
Toluene	ND	0.049	mg/Kg	1	8/12/2014 4:45:54 PM	14696
Ethylbenzene	ND	0.049	mg/Kg	1	8/12/2014 4:45:54 PM	14696
Xylenes, Total	ND	0.097	mg/Kg	1	8/12/2014 4:45:54 PM	14696
Surr: 4-Bromofluorobenzene	92.3	80-120	%REC	1	8/12/2014 4:45:54 PM	14696

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

Page 1 of 4

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

48

4.8

10

50.00

5.000

WO#:

1408415 14-Aug-14

Client:

Enterprise Field Services

Project:

Lateral K-31 (2014)

Sample ID MB-14690 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics Client ID: **PBS** Batch ID: 14690 RunNo: 20514 Prep Date: 8/11/2014 Analysis Date: 8/12/2014 SeqNo: 596471 Units: %REC Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Surr: DNOP 9.4 10.00 94 2 57.9 140 Sample ID MB-14691 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics **PBS** Client ID: Batch ID: 14691 RunNo: 20514 Prep Date: 8/11/2014 Analysis Date: 8/12/2014 SeqNo: 596472 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND Surr: DNOP 9.7 10.00 96.7 57.9 140 Sample ID LCS-14690 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics Client ID: LCSS Batch ID: 14690 RunNo: 20514 Prep Date: 8/11/2014 Analysis Date: 8/12/2014 SegNo: 596474 Units: %REC Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Surr: DNOP 4.8 5.000 96.4 57.9 140 Sample ID LCS-14691 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics Client ID: LCSS Batch ID: 14691 RunNo: 20514 Prep Date: 8/11/2014 Analysis Date: 8/12/2014 SegNo: 596475 Units: mg/Kg Analyte Result **RPDLimit** PQL SPK value SPK Ref Val %REC HighLimit %RPD LowLimit Qual

Sample ID MB-14719	SampType: MI	BLK	TestCode: I	EPA Method	8015D: Diese	el Range (	Organics	
Client ID: PBS	Batch ID: 14	719	RunNo:	20529				
Prep Date: 8/12/2014	Analysis Date: 8/	13/2014	SeqNo:	597002	Units: %RE	С		
Analyte	Result PQL	SPK value SPI	K Ref Val %REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7	10.00	96.9	57.9	140			

0

96.4

96.7

68.6

57.9

130

140

Sample ID LCS-14719	SampType: LCS	TestCode: EPA Method	8015D: Diesel Range (	Organics
Client ID: LCSS	Batch ID: 14719	RunNo: 20529		
Prep Date: 8/12/2014	Analysis Date: 8/13/2014	SeqNo: 597313	Units: %REC	
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: DNOP	4.6 5.00	91.5 57.9	140	

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range

Diesel Range Organics (DRO)

Surr: DNOP

- 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

Page 2 of 4

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408415

14-Aug-14

**Client:** 

**Enterprise Field Services** 

Project:	Lateral K	-31 (2014)	)								
Sample ID	MB-14696	SampT	уре: МЕ	BLK	Test	Code: El	PA Method	8015D: Gaso	oline Rang	е	
Client ID:	PBS	Batch	ID: <b>14</b>	696	R	tunNo: 2	0533				
Prep Date:	8/11/2014	Analysis D	ate: 8/	12/2014	S	eqNo: 5	97262	Units: mg/F	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	ND	5.0								
Surr: BFB		920		1000		91.5	80	120			
Sample ID	LCS-14696	SampT	ype: LC	S	Test	Code: El	PA Method	8015D: Gaso	oline Rang	е	
Client ID:	LCSS	Batch	ID: 14	696	R	lunNo: 2	0533				
Prep Date:	8/11/2014	Analysis D	ate: 8/	12/2014	S	eqNo: 5	97263	Units: mg/F	<b>⟨</b> g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	24	5.0	25.00	0	96.0	65.8	139			
Surr: BFB		970		1000		97.2	80	120			
Sample ID	1408415-001AMS	SampT	ype: MS	3	Test	tCode: El	PA Method	8015D: Gaso	oline Rang	е	
Client ID:	C-16	Batch	ID: 14	696	R	lunNo: 2	0533				
Prep Date:	8/11/2014	Analysis D	ate: 8/	12/2014	S	eqNo: 5	97274	Units: mg/F	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	26	4.8	24.22	0	107	71.8	132			
Surr: BFB		970		969.0		99.8	80	120			
Sample ID	1408415-001AMSI	D SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	e	
Client ID:	C-16	Batch	ID: <b>14</b>	696	R	RunNo: 2	0533				
Prep Date:	8/11/2014	Analysis D	ate: 8/	12/2014	S	SeqNo: 5	97276	Units: mg/k	<b>(</b> g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	e Organics (GRO)	24	4.8	24.18	0	101	71.8	132	5.67	20	
Surr: BFB		1000		967.1		104	80	120	0	0	

#### 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
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Sample pH greater than 2.
- Reporting Detection Limit

Page 3 of 4

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1408415

14-Aug-14

Client:

Enterprise Field Services

Project:

Lateral K-31 (2014)

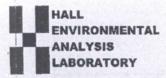
Project: Lateral	K-31 (2014)	)								
Sample ID MB-14696	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batch	ID: <b>14</b>	696	F	RunNo: 2	0533				
Prep Date: 8/11/2014	Analysis D	ate: 8/	12/2014	S	SeqNo: 5	97291	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
(ylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			
Sample ID LCS-14696	SampT	ype: LC	s	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: LCSS	Batch	ID: 14	696	F	RunNo: 2	0533				
Prep Date: 8/11/2014	Analysis D	ate: 8/	12/2014	S	SeqNo: 5	97292	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.050	1.000	0	87.4	80	120			
Toluene	0.86	0.050	1.000	0	85.6	80	120			
Ethylbenzene	0.88	0.050	1.000	0	88.2	80	120			
Kylenes, Total	2.8	0.10	3.000	0	92.4	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	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

Page 4 of 4

- P Sample pH greater than 2.
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuguerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

## Sample Log-In Check List

			-	
Client Name: Enterprise	Work Order Number:	1408415		RcptNo: 1
Received by/date:	and ali			
14	08/09/14 8/9/2014 9:00:00 AM		Analy Aller	
Logged By: Lindsay Manigin				
Completed By: Lindsay Mangin	8/9/2014 9:53:13 AM		Juney Hady D	
Reviewed By:	08/11/2014			
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 samp	les?	Yes 🗸	No	NA '
5. Were all samples received at a tempera	ture 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 to	est(s)?	Yes 🗸	No	
8. Are samples (except VOA and ONG) pro	operly preserved?	Yes 🗸	No i	
9. Was preservative added to bottles?		Yes Li	No 🗸	NA
10.VOA vials have zero headspace?		Yes	No	No VOA Vials ✔
11. Were any sample containers received b	oroken?	Yes	No 🗸	
				# of preserved bottles checked
12.Does paperwork match bottle labels?		Yes 🗸	No	for pH:
(Note discrepancies on chain of custody				(<2 or >12 unless noted Adjusted?
13. Are matrices correctly identified on Chai		Yes V	No No	
14. Is it clear what analyses were requested 15. Were all holding times able to be met?	1	Yes Y	No	Checked by:
(If no, notify customer for authorization.)		165 3		
Special Handling (if applicable)				
16. Was client notified of all discrepancies v	vith this order?	Yes	No L	NA 💉
Person Notified:	Date:			
By Whom:	Via:	eMail	Phone Fax	In Person
Regarding:				CAD DATA DE DECEMBRA DE LA CASA DEL CASA DE LA CASA DE
Client Instructions:				Allegan page a commence and the annual allegan
17. Additional remarks:				
18. Cooler Information				
IV. VOUIDI IIIIVIIIIALIVII				
Cooler No Temp °C Condition	Seal Intact   Seal No	Seal Date	Signed By	

C	hain-	of-Cu	stody Record	Turn-Around	Time:						AL		E	NIX	TE	20	NIN	1EN	TA	
Client:	Enterp	rise Fi	eld Services LLC	Xi Standard	□ Rush													RAT		
				Project Name	:						www	v.hal	lenv	ironi	ment	tal.co	om			
Mailing	Address	614	Reilly Avenue	Lateral	K-31 (2	2014)		49	01 H								M 87	109		
F	armia	aton,	NM 87401	Project #:				Te	el. 50	5-34	15-3		Name and Address of the Owner, where	_	THE OWNER OF THE OWNER OWNER OF THE OWNER OWNE	-	4107			
Phone #	#: 505	-716-	2787									A	naly	/sis	Req	uest				
email or	Philippin Park Committee			Project Mana	ger:		=	nly)	(SEE					04)	40					
QA/QC F	Package:						(8021)	38 0	-			(S)		8,4	CB's					
Stan	dard		□ Level 4 (Full Validation)	K. Sum			1	(G	DRO /			SIMS)		PC,	2 P(					
Accredi		□ Othe	r	Sampler: A	. jubods	VII NO		TPH (Gas only)	-	8.1)	4.1)	8270		3,NO	808/		2			2
□ EDD				Sample Tem	perature:	4	#	3E +	(GRO	d 41	d 50	or 8	tals	N,	des	0	100			8
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	Un.	BTEX + MARKE	BTEX + MTBE	<b>TPH 8015B</b>	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or	RCRA'8 Metals	Anions (F,Cl,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)			Air Bubbles (Y or N)
3/8/14	1140	50:1	C-16	9-402 Jar	cold	-001	X		X											
/																				
	1																			
			MES																	
			1.00																	
							-													
Date:	Time: 1755	Relinquish Hear Relinquish	then M. Woods	Received by:	Whele	Date Time Date Time Date Time	Rei	mark D'i	s: rect	bili	1 to	En	ikri	الديمان	e					
18/14	1758	Must	to Walk	V of	- 08	balled ogas														
	f necessary.	samples sub	mitted to Hall Environmental may be sub	Contracted to other a	coredited laborator	es. This serves as notice of thi	s poss	bility.	Any S	ub-con	uracte	u data	WIII D	e ciear	ly note	ated of	n me an	alyucai re	port.	



#### SUPPLEMENTAL SITE INVESTIGATION REPORT

Property:

Lateral K-31 (7/26/2014) Pipeline Release NW 1/4, S16 T25N R6W Rio Arriba County, New Mexico

> March 31, 2015 Apex Project No. 7030414G028

> > Prepared for:

Enterprise Field Services, LLC 614 Reilly Avenue Farmington, NM 87401 Attn: Mr. Thomas Long

Prepared by:

Heather M. Woods, P.G. Senior Project Manager

Elizabeth Scaggs, P.G.

**Division Director** 

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Арре	endix D	: Laboratory Analytical Reports & Chain of Custody Documentation	



#### SUPPLEMENTAL SITE INVESTIGATION REPORT

Lateral K-31 (7/26/2014) Pipeline Release NW 1/4, S16 T25N R6W Rio Arriba County, New Mexico

Apex Project No. 7030414G028

#### 1.0 INTRODUCTION

#### 1.1 Site Description & Background

The Lateral K-31 pipeline release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the northwest (NW) ¼ of Section 16 in Township 25 North, Range 6 West (36.40479N, 107.47813W), in Rio Arriba County, New Mexico, referred to hereinafter as the "Site" or "subject Site". The Site is located on land owned by the State of New Mexico, and consists of native vegetation range land periodically interrupted with oil and gas gathering facilities, including one (1) Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

On July 31, 2014, Enterprise shut in the Lateral K-31 pipeline and initiated excavation activities at the Site in an effort to locate and repair a subsurface release. The release was subsequently identified and repaired. Natural gas and natural gas condensate were released from the pipeline as a result of internal corrosion. The release was identified by a discharge of natural gas at the ground surface.

Corrective action activities began July 31, 2014, and were completed August 6, 2014. During hydrocarbon-affected soil removal, groundwater was encountered at the floor of the excavation prior to soils achieving acceptable New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) *Remediation Action Level* concentrations. Therefore, additional site investigation of groundwater was warranted. Details of the corrective actions pertaining to hydrocarbon-affected soils are provided in the *Corrective Action Report – Lateral K-31* (2014) *Pipeline Release* (Apex) dated September 18, 2014.

A topographic map depicting the location of the Site is included as Figure 1, a Site Vicinity Map is included as Figure 2, and a Site Plan is included as Figure 3 in Appendix A.

#### 1.2 Project Objective

The primary objective of the supplemental site investigation was to evaluate the magnitude and extent of dissolved phase constituents of concern (COCs), if present, in the initial groundwater-bearing unit at the Site.



#### 2.0 SITE RANKING

In accordance with the New Mexico ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex TITAN, Inc. (Apex) utilized the general site characteristics obtained during the completion of corrective action activities and information available from the Office of the New Mexico Office of the State Engineer to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Rankin	Ranking Criteria							
	<50 feet	20						
Depth to Groundwater	50 to 99 feet	10	20					
	>100 feet	0						
Wellhead Protection Area • <1,000 feet from a water	Yes	20	0					
source, or; <200 feet from private domestic water source.	No	0	0					
	<200 feet	20						
Distance to Surface Water Body	200 to 1,000 feet	10	20					
	>1,000 feet	0						
Total Ran	40							

Based on Apex's evaluation of the scoring criteria, the Site would have a maximum Total Ranking Score of "40". This ranking is based on the following:

- Depth to groundwater, as measured in on-Site monitoring wells, ranges from approximately 8 to 10 feet below grade surface (bgs), resulting in a depth to groundwater ranking of "20".
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site. The lack of water source proximities results in a well head protection area ranking of "0".
- The Site encompasses the channel of a small ephemeral wash draining to an unnamed tributary to the Largo Wash approximately 150 feet east of the release location. Also, the Site is located approximately 840 feet west of the Largo Wash ordinary high-water mark. Based on these proximities, a maximum ranking for distance to surface water was assigned at "20".

#### 3.0 SITE INVESTIGATION

#### 3.1 Soil Boring and Monitoring Well Installations

During January 2015, four (4) soil borings (MW-1 through MW-4) were advanced in the vicinity of the former pipeline release utilizing a truck-mounted, hollow stem auger drilling rig. Soil boring MW-1 was advanced topographically upgradient from the point of release, and soil boring MW-4 was advanced as near as practicable to the former point of release and topographically downgradient from the release. Soil borings MW-2 and MW-3 were advanced topographically downgradient from the point of release on the north and east sides of the former excavation.

Figure 3 of Appendix A is a Site Map which depicts the location of the soil boring locations and former extents of the excavation.



Soil samples were collected continuously, utilizing five-foot core barrel samplers to the termination depth of each soil boring. Soil samples were observed to document soil lithology, color, moisture content, and visual and olfactory evidence of petroleum hydrocarbons. Field headspace analysis was conducted by placing the portion of the soil sampled designated for field screening into a plastic Ziplock® bag. The plastic bag was sealed, and the sample allowed to volatilize. The air above the sample, the headspace, was then evaluated using a photoionization detector (PID) capable of detecting volatile organic compounds (VOCs). The PID was calibrated utilizing an isobutylene standard prior to use in the field.

During the completion of each soil boring, an on-Site geoscientist documented the lithology encountered and constructed a continuous profile of the soil column from the surface to the boring terminus. Soil samples from each boring location were visually inspected and classified in the field. The lithology observed during the advancement of soil borings generally consisted of interbedded silt with clay, clayey silt, and silty sand underlain by poorly graded sand with silt to silty sand. Detailed lithologic descriptions are presented on the soil boring logs included in Appendix C.

Overall, PID readings ranged from zero (0) parts per million (ppm) to 17 ppm (MW-4). Field screening results are presented on soil boring logs included in Appendix C.

Subsequent to advancement, the soil borings were completed as monitoring wells. The monitoring wells were completed using the following methodology:

- Installation of 15 feet of 2-inch inside diameter, 0.010-inch machine slotted PVC well screen with a threaded bottom cap;
- Installation of 2-inch inside diameter, threaded flush joint PVC riser pipe to the ground surface:
- Addition of pre-sieved 10/20 grade annular silica sand pack from the bottom of the soil boring to 2-feet above the top of the well screen;
- Placement of two feet of hydrated bentonite pellets above the sand;
- · Addition of cement/bentonite slurry to the surface; and
- Installation of an above-grade steel riser with an integrated padlock hasp.

The monitoring wells were developed by surging and removing groundwater with a disposable bailer until the fluid appeared relatively free of fine-grained sediment. Purged groundwater was placed into a labeled drum for storage until appropriate disposal measures are determined. Monitoring well construction details are presented on the soil boring logs included in Appendix C.

#### 3.2 Soil Sampling Program

One (1) soil sample was collected from each soil boring from one of the following locations:

- The depth interval exhibiting the highest concentration of VOCs based on PID evidence;
- An interval exhibiting visual/olfactory evidence of impairment;
- The capillary fringe zone;
- From a change in lithology; or
- From the bottom of the boring.

The soil samples were collected in laboratory supplied containers, sealed with custody tape and placed on ice in a cooler secured with a custody seal. The sample cooler and completed chain-of-custody forms were relinquished to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico.



#### 3.3 Groundwater Sampling Program

Prior to sample collection, the monitoring wells were purged of approximately three (3) to five (5) casing volumes of groundwater or until effectively dry, utilizing a dedicated, disposable bailer for each well. Subsequent to the completion of the purging process and adequate groundwater recharge, one (1) groundwater sample was collected from each monitoring well utilizing a disposable bailer. The groundwater samples were collected in laboratory supplied containers, sealed with custody tape and placed on ice in a cooler secured with a custody seal. The sample cooler and completed chain-of-custody forms were relinquished to HEAL in Albuquerque, New Mexico.

#### 3.4 Laboratory Analytical Program

Soil samples were analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) utilizing Environmental Protection Agency (EPA) SW-846 Method 8015 and benzene, toluene, ethylbenzene, and xylenes (BTEX) utilizing EPA SW-846 Method 8021. Groundwater samples were analyzed for BTEX utilizing EPA SW-846 Method 8021. Sample containers for groundwater organic analyses were pre-preserved with HgCl<sub>2</sub>.

A summary of the analysis, sample type, and EPA-approved methods is presented in the following table:

Analysis	Sample Type	No. of Samples	EPA Method
TPH GRO/DRO	Soil	4	SW-846 8015
BTEX	Soil/Groundwater	4/4	SW-846 8021

Soil and groundwater laboratory results are summarized in Tables 1 and 2 (Appendix A), respectively. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

#### 4.0 GROUNDWATER FLOW DIRECTION

Each of the monitoring wells was surveyed for top-of-casing (TOC) elevations. Apex gauged the depth to fluids in each monitoring well. The groundwater flow direction (gradient) at the Site is generally toward the north. The observed gradient during the monitoring event averaged 0.003 ft/ft across the north portion of the Site and 0.010 ft/ft across the south portion of the Site. Groundwater is present at depths ranging from approximately 8 to 10 feet bgs at the Site.

Groundwater measurements collected during the sampling event are presented with TOC elevations in Table 2 (Appendix B). A groundwater gradient map for the sampling event is included as Figure 4 (Appendix A).

#### 5.0 DATA EVALUATION

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to crude oil/condensate releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the EMNRD/OCD rules, specifically New Mexico Administrative Code 19.15.29 *Remediation Plan*.



These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action. Additionally, the New Mexico EMNRD OCD utilizes the New Mexico WQCC *Groundwater Quality Standards* to determine baseline groundwater assessment.

#### 5.1 Soil Samples

Apex compared the BTEX and TPH concentrations or reporting limits (RLs) associated with monitoring well soil boring samples to the OCD *Remediation Action Levels* for sites having a total ranking score of "40".

- The laboratory analysis of the soil samples collected from the monitoring well soil borings indicate benzene concentrations ranging from below the laboratory reporting limits to 0.12 milligrams per kilogram (mg/kg), which are below the OCD Remediation Action Level.
- The laboratory analysis of the soil samples collected from the monitoring well soil borings indicate total BTEX concentrations ranging from below laboratory reporting limits to 1.1 mg/kg, which are below the OCD Remediation Action Level.
- The laboratory analyses of the soil samples collected from the monitoring well soil borings indicate combined TPH GRO/DRO concentrations below the laboratory reporting limits, which are below the OCD Remediation Action Level.

No data qualifier flags were associated with the soil analytical results. Confirmation sample results are provided in Tables 1A and 1B in Appendix B.

#### 5.2 Groundwater Samples

Apex compared BTEX concentrations or laboratory reporting limits (RLs) associated with the groundwater samples collected from the Site monitoring wells to the WQCC *Groundwater Quality Standards*.

The groundwater samples collected from monitoring wells MW-1 through MW-4 did not
exhibit benzene, toluene, ethylbenzene, or xylenes concentrations above the laboratory
reporting limits, which are below the applicable WQCC Groundwater Quality Standards.

No data qualifier flags were associated with the groundwater analytical results. The results of the groundwater sample analyses are summarized in Table 2 of Appendix B. Laboratory data sheets and chain-of-custody documentation are provided as Appendix C.

#### 6.0 FINDINGS AND RECOMMENDATIONS

The primary objective of the supplemental site investigation was to evaluate the magnitude and extent of dissolved phase COCs, if present, in the initial groundwater-bearing unit at the Site.

- Apex installed four (4) soil borings/monitoring wells at the Lateral K-31 (7/26/2014) release Site utilizing a hollow stem auger drilling rig.
- During the completion of the sampling event, one (1) groundwater sample was collected from each monitoring wells utilizing a dedicated disposable bailer.



- Based on field measurements, the groundwater flow direction at the Site is generally towards the north, with an approximate gradient of 0.003 ft/ft across the north portion of the Site and 0.010 ft/ft across the south portion of the Site.
- The soil samples collected from MW-1 through MW-4 did not exhibit benzene, total BTEX, or TPH GRO/DRO above the OCD applicable Remediation Action Levels.
- The groundwater samples collected from monitoring wells MW-1 through MW-4 did not exhibit benzene, toluene, ethylbenzene, or xylenes concentrations above the laboratory reporting limits, which are below the applicable WQCC Groundwater Quality Standards.

Based on the results of the supplemental site investigation, Apex has the following recommendations:

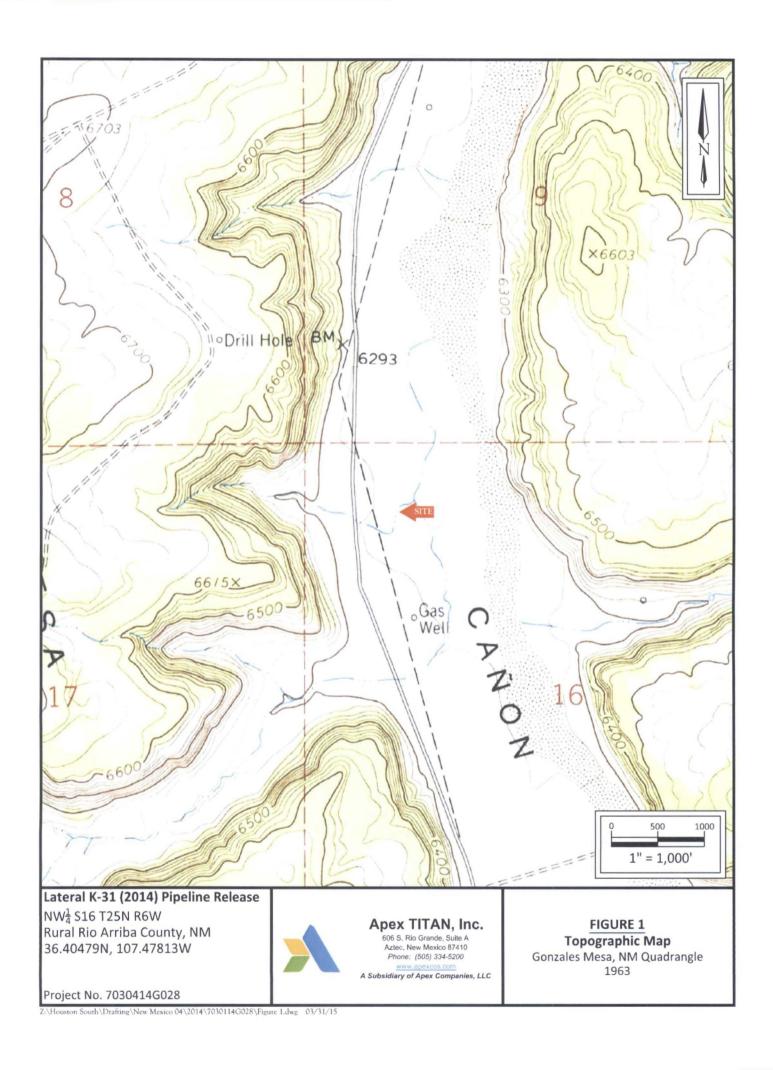
- Report the supplemental site investigation results to the OCD; and
- Plug and abandon the monitoring wells;
- Request that no further action be required in relation to this release at this time.

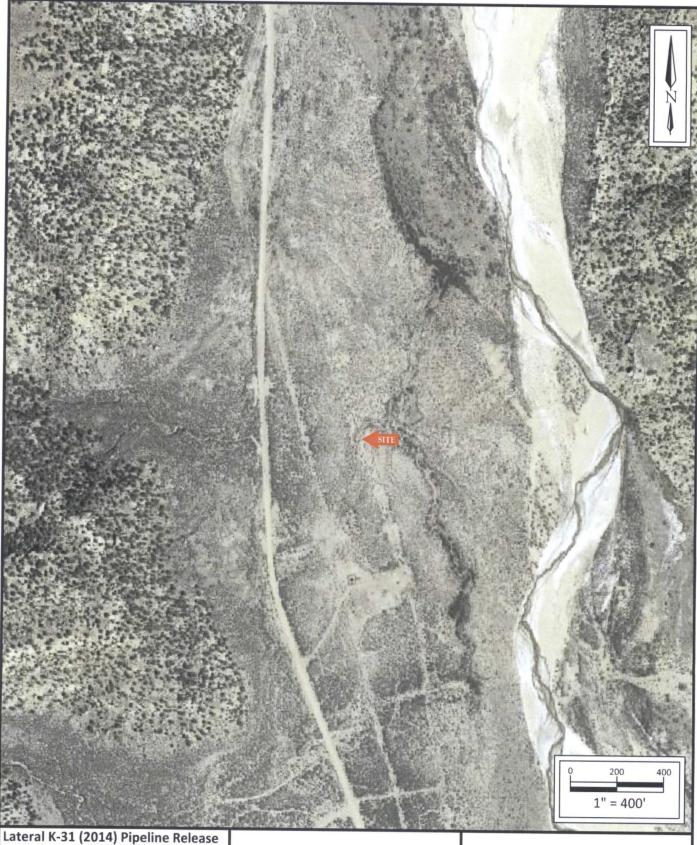
#### 7.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE

Apex's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client.

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Apex cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Apex's findings and recommendations are based solely upon data available to Apex at the time of these services.

This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the expressed written authorization of Enterprise and Apex. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and Apex's Agreement. The limitation of liability defined in the agreement is the aggregate limit of Apex's liability to the client.





NW<sup>1</sup>/<sub>4</sub> S16 T25N R6W Rural Rio Arriba County, NM 36.40479N, 107.47813W

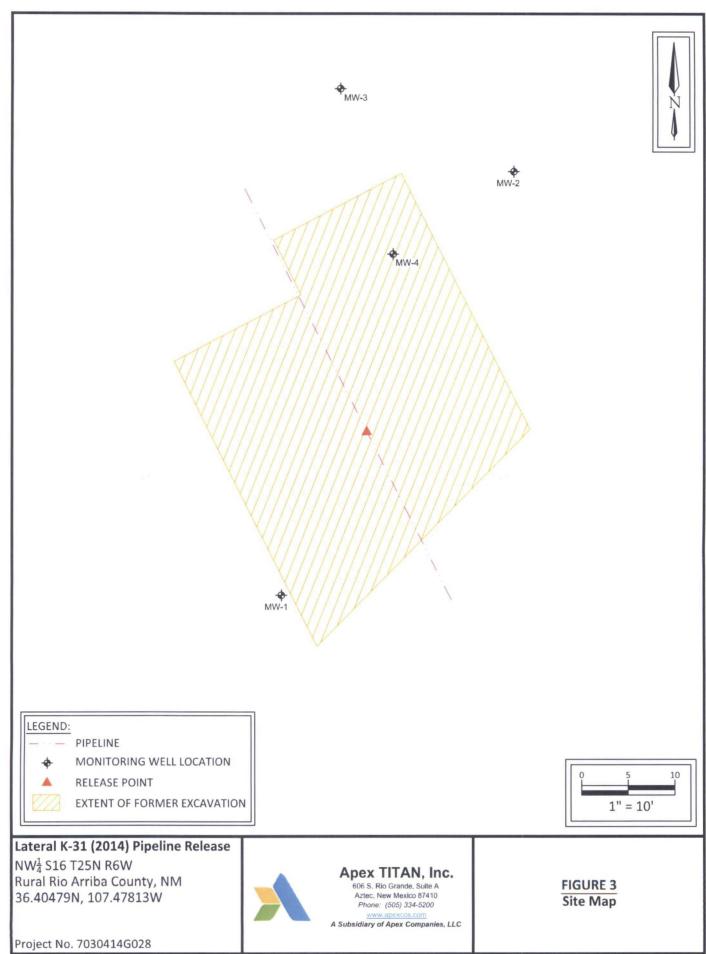
Apex TITAN, Inc. 606 S. Rio Grande, Suite A Aztec. New Mexico 87410 Phone: (505) 334-5200

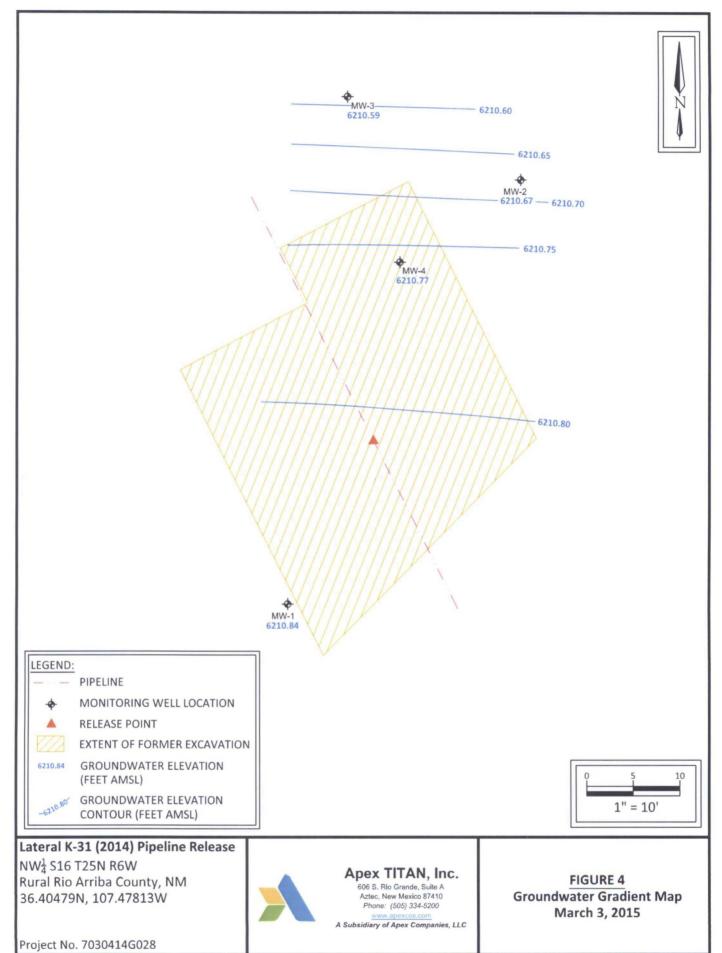
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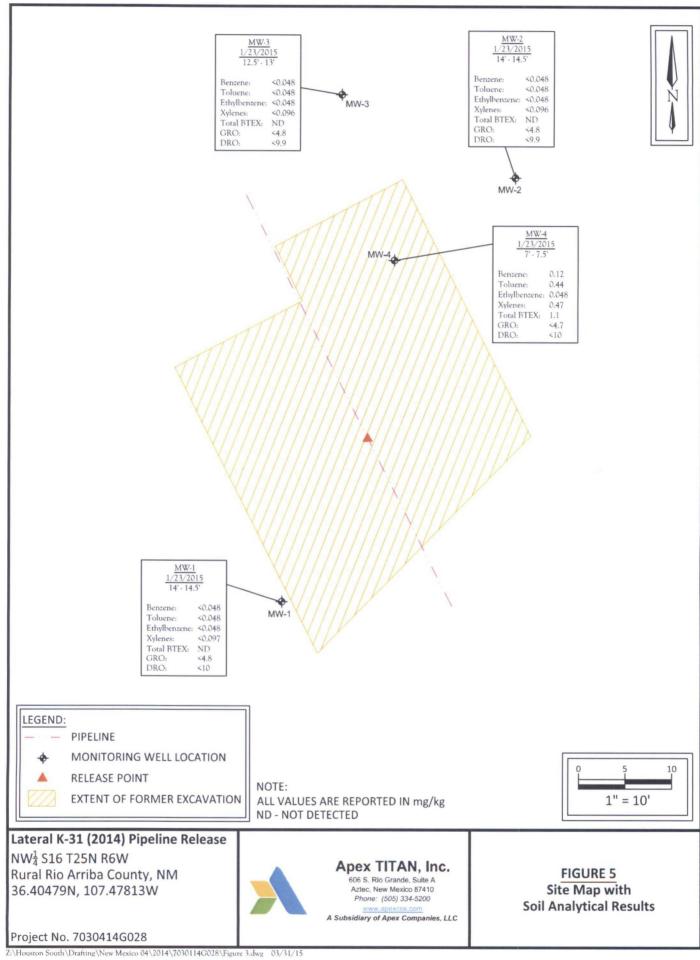
FIGURE 2 Site Vicinity Map 2013 Aerial Photograph

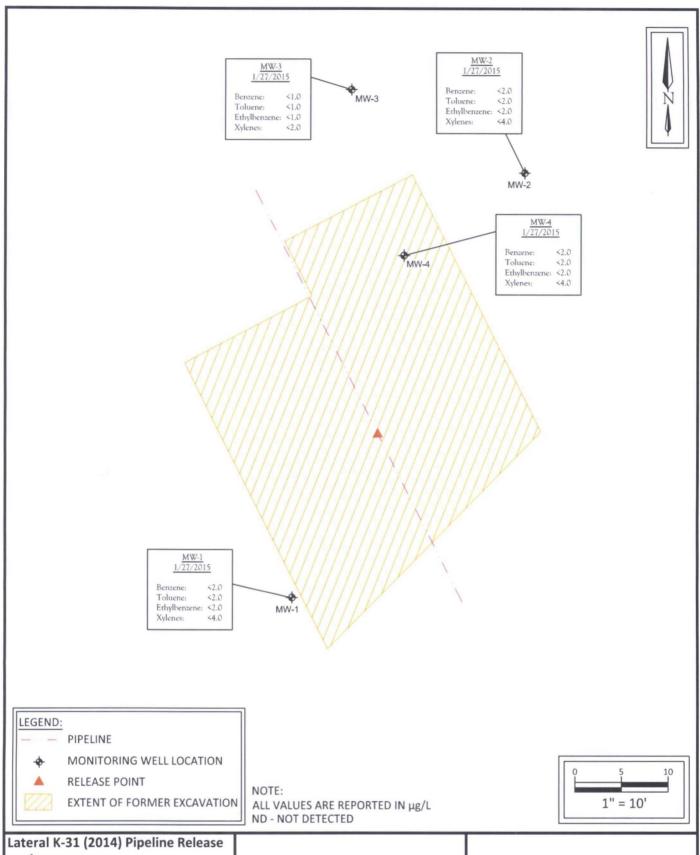
Project No. 7030414G028

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NW $\frac{1}{4}$  S16 T25N R6W Rural Rio Arriba County, NM 36.40479N, 107.47813W



#### Apex TITAN, Inc.

606 S. Rio Grande, Suite A Aztec, New Mexico 87410 Phone: (505) 334-5200

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FIGURE 6
Site Map with
Groundwater Analytical Results

Project No. 7030414G028



## TABLE 1 Lateral K-31 (2014) Pipeline Release SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
New Mexico Ener Department, Oil Cons	gy, Mineral & Natura ervation Division, R Level	The second secon	10	NE	NE	NE	50	10	00
		HANNEY STORY	Soil Bo	oring Samples	by AES				
MW-1	1.23.15	14 to 14.5	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<10
MW-2	1.23.15	14 to 14.5	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.9
MW-3	1.23.15	12.5 to 13	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.9
MW-4	1.23.15	7 to 7.5	0.12	0.44	0.048	0.47	1.1	<4.7	<10

Note: Concentrations in **bold** and yellow exceed the applicable WQCC GQS

NA = Not Analyzed

NE = Not Established

<1.0= the numeral (in this case "1.0") identifies the laboratory Reporting limit



# TABLE 2 Lateral K-31 (2014) Pipeline Release GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (μg/L)	Toluene (μg/L)	Ethylbenzene (µg/L)	Xylenes (μg/L)
Commission Gro	er Quality Control oundwater Quality dards	10	750	750	620
MW-1	01.27.15	<2.0	<2.0	<2.0	<4.0
MW-2	01.27.15	<2.0	<2.0	<2.0	<4.0
MW-3	01.27.15	<1.0	<1.0	<1.0	<2.0
MW-4	01.27.15	<2.0	<2.0	<2.0	<4.0

Note: Concentrations in **bold** and yellow exceed the applicable WQCC GQS

NA = Not Analyzed

NE = Not Established

<1.0= the numeral (in this case "1.0") identifies the laboratory Reporting limit



# TABLE 3 Lateral K-31 (2014) Pipeline Release GROUNDWATER ELEVATIONS

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	TOC Elevations (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-1	03.03.15	ND	12.09	ND	6222.93	6210.84
MW-2	03.03.15	ND	12.46	ND	6223.13	6210.67
MW-3	03.03.15	ND	10.85	ND	6221.44	6210.59
MW-4	03.03.15	ND	11.35	ND	6222.12	6210.77

<sup>\* -</sup> corrected for presence of phase-sepated hydrocarbon using a site-specific density correction factor of 0.729

BTOC - below top of casing

AMSL - above mean sea level

TOC - top of casing

ND - Not detected

NM - Not measured

#### Apex TITAN, Inc. Client: EPROD BORING LOG NUMBER 606 S. Rio Grande, Suite A Aztec, New Mexico 87410 Project Name: Lateral K-31 (2014) Pipeline Release MW-1 Project Location: Rural Rio Arriba County, New Mexico Phone: (505) 334-5200 Project Manager: Kyle Summers Project #\_ A Subsidiary of Apex Companies, LLC Ground Surface Elevation: $\frac{6220.241}{6222.929}$ January 23, 2015 Borehole Diameter: Date Sampled: Enviro-Drill, Inc. Casing Diameter: Drilled by: J. Barraza North Coordinate: 36.40469 Well Materials: PVC Driller: West Coordinate: -107.47816 Surface Completion: Above Grade Boring Method: Hollow Stem Augers Logged by: H. Woods Sampler: H. Woods Bench Mark Elevation: At Completion At Well Stabilization FID/PID READING (ppm) GEOLOGIC LOG SYMBOL POTENTIO-METRIC SURFACE RECOVERY (%) SAMPLE SAMPLE DEPTH (ft) BORING / WELL COMPLETION GEOLOGIC DESCRIPTION (GRAPHIC DEPICTION) CLAYEY SAND: yellowish brown, very fine grained, moist, no hydrocarbon 0.2 80 Grouted Casing 0.1 Flush threaded 2" ID Schedule 40 PVC casing Hydrated Bentonite Seal 5.0 SILTY CLAY: brown, moist, no hydrocarbon odor, no staining 1.5 100 -heavily gypsiferous 0.2 0.2 Flush threaded 2" ID C with 0.010" machine I openings (5 - 20 feet) 100 14-14.5 0.2 SILTY SAND: brown, wet, no hydrocarbon odor, no staining Filter pack (20-40 clean silica sand) CLAYEY SILT: brown, moist, no hydrocarbon odor, no staining Schedule 40 PVC s

-transitioned to brown with greenish gray patches

SILTY SAND: brown, wet, no hydrocarbon odor, no staining -grading to poorly graded sand with silt, grayish brown, possible staining

TOTAL DEPTH OF BORING - 20.0 feet BGS

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0.2

0.2

0.3

50

#### Apex TITAN, Inc.

606 S. Rio Grande, Suite A Aztec, New Mexico 87410 Phone: (505) 334-5200

A Subsidiary of Apex Companies, LLC

Client: EPROD

Project Name: Lateral K-31 (2014) Pipeline Release Project Location: Rural Rio Arriba County, New Mexico

Project Manager: Kyle Summers

BORING LOG NUMBER

7030414G028

January 23, 2015 Date Sampled: Enviro-Drill, Inc. Drilled by: J. Barraza Driller: H. Woods Logged by: H. Woods

Ground Surface Elevation: 6220.493
Top of Casing Elevation: 6223.276
North Coordinate: 36.40488
West Coordinate: -107.47802
Bench Mark Elevation:

Borehole Diameter: Casing Diameter: \_ Well Materials: PVC Surface Completion: Above Grade
Boring Method: Hollow Stem Augers

SILTY CLAY: brown, slightly moist, no hydrocarbon odor, no staining, some  SILTY CLAY: brown, slightly moist, no hydrocarbon odor, no staining, some  SILTY CLAY: brown, moist, no hydrocarbon odor, no staining, very few small greenish gray patches  SILTY CLAY: brown, moist, no hydrocarbon odor, no staining, very few small greenish gray patches  SILTY CLAY: brown, moist, no hydrocarbon odor, no staining, very few small greenish gray patches  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining. Supplementary of small grained gypsum  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining.	SILTY CLAY: brown, slightly moist, no bydrocarbon odor, no staining, some  1.5  80  .  0.4  0.5  3.6  8.5  .  1.2  .  5.0  SILTY CLAY: brown, moist, no bydrocarbon odor, no staining, very few small greened gray patches  100  .  14-14.5  4.4  .  CLAYEY SILTY SAND: brown, very fine grained, wet, no bydrocarbon odor, no staining.  Transitioned to graywish brown, very fine grained, wet, no bydrocarbon odor, no staining.  Transitioned to graywish brown, very fine grained, moist, no bydrocarbon odor, no staining.  Transitioned to graywish brown, very fine grained, moist, no bydrocarbon odor, no staining.  SILTY SAND: graywish brown, very fine grained, wet, no bydrocarbon odor, no staining.  Transitioned to graywish brown, very fine grained, moist, no bydrocarbon odor, no staining.		T		(ii		At	Completion Well Stabilization	
14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5	14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5	C(ft) SAMPLE INTERVAL	SAMPLE	RECOVERY (%)	FID/PID READING (ppi	POTENTIO- METRIC SURFACE	GEOLOGIC LOG SYMBO	GEOLOGIC DESCRIPTION	
14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5	14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5								
14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5	14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5			80	1.5				Grouted Casing
14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5	14-14.5  4.4  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  CLAYEY SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no staining  150  1.5  50  1.5			85	3.6				School School
20 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	20 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5		14-14.5	100				small greenish gray patches	
NR SILTY SAND: grayish brown, very fine grained, moist, no hydrocarbon odor, possible staining  TOTAL DEPTH OF BORING - 21.0 feet BGS	NR SILTY SAND: grayish brown, very fine grained, moist, no hydrocarbon odor, possible staining  TOTAL DEPTH OF BORING - 21.0 feet BGS			50	1.5			no staining	Filter clean composition of the proposition of the
		=		NR				possible staining	carbon odor,

#### Apex TITAN, Inc. Client: EPROD BORING LOG NUMBER 606 S. Rio Grande, Suite A Aztec, New Mexico 87410 Project Name: Lateral K-31 (2014) Pipeline Release MW-3 Project Location: Rural Rio Arriba County, New Mexico Phone: (505) 334-5200 Project Manager: Kyle Summers Project # A Subsidiary of Apex Companies, LLC Ground Surface Elevation: $\frac{6218.626}{6221.437}$ January 23, 2015 Borehole Diameter: Date Sampled: Drilled by: Enviro-Drill, Inc. Casing Diameter: North Coordinate: 36.40494 J. Barraza Well Materials: Driller: West Coordinate: -107.47814 Surface Completion: Above Grade Boring Method: Hollow Stem Augers H. Woods Logged by: Sampler: H. Woods Bench Mark Elevation: Boring Method: At Completion At Well Stabilization FID/PID READING (ppm) GEOLOGIC LOG SYMBOL RECOVERY (%) SAMPLE SAMPLE BORING / WELL COMPLETION (H) GEOLOGIC DESCRIPTION (GRAPHIC DEPICTION) SILTY CLAY: brown, moist to slightly moist, no hydrocarbon odor, no 1.7 90 Grouted Casing Flush threaded 2" ID Schedule 40 PVC casing 1.8 SANDY SILTY CLAY: brown, slightly moist, no hydrocarbon odor, no 1.4 SILTY SAND: brown, very fine grained, slightly moist, no hydrocarbon odor, 85 SILTY CLAY: brown, moist, no hydrocarbon odor, no staining, very few 3.8 greenish gray patches -increasing greenish gray patches up to 50% of broken surface 100 12.5-13 4.2 Flush threaded 2" ID Schedule 40 PVC with 0.010" machine slotted openings (5 - 20 feet) 2.9 SILTY SAND: grayish brown, moist to wet, no hydrocarbon odor, possible Filter pack (20-40 clean silica sand) 45 1.9 TOTAL DEPTH OF BORING - 20.0 feet BGS

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#### Apex TITAN, Inc. Client: EPROD BORING LOG NUMBER 606 S. Rio Grande, Suite A Aztec, New Mexico 87410 Project Name: Lateral K-31 (2014) Pipeline Release Project Location: Rural Rio Arriba County, New Mexico Phone: (505) 334-5200 Project Manager: Kyle Summers Project #\_ A Subsidiary of Apex Companies, LLC January 23, 2015 Ground Surface Elevation: 6219.128 Top of Casing Elevation: 62222.119 Borehole Diameter: \_ Date Sampled: Drilled by: Enviro-Drill, Inc. Top of Casing Elevation: Casing Diameter: J. Barraza North Coordinate: 36.40481 Well Materials: Driller: West Coordinate: -107.47809 Surface Completion: Above Grade Boring Method: Hollow Stem Augers H. Woods Logged by: Sampler: H. Woods Bench Mark Elevation: At Completion At Well Stabilization FID/PID READING (ppm) GEOLOGIC LOG SYMBOL RECOVERY (%) SAMPLE SAMPLE (£) BORING / WELL COMPLETION GEOLOGIC DESCRIPTION (GRAPHIC DEPICTION) FILL;CLAYEY SAND: brown, very fine grained, moist, no hydrocarbon odor no staining 100 NATIVE SILTY CLAY: brown, moist, no hydrocarbon odor, no staining 5.0 13.6 -heavily gypsiferous from 5-7.5' -some greenish gray patches 5.0 7-7.5 17.0 100 15.4 12.4 SANDY CLAYEY SILT: brown, very fine grained, very moist, no hydrocarbon odor, no staining SILTY SAND: brown, very fine grained, wet, no hydrocarbon odor, no SILTY CLAY: brown, very moist to wet, no hydrocarbon odor, no staining, 100 Filter pack (20-40 clean silica sand) heavy greenish gray patches 1.0 Flush threaded 2" ID 40 PVC with 0.010" machine slotted openings (5 - 20 feet) SILTY SAND: brown, wet, no hydrocarbon odor, no staining POORLY GRADED SAND: light yellowish brown, very fine grained, wet, no hydrocarbon odor, no staining 2.1 TOTAL DEPTH OF BORING - 20.0 feet BGS

Z:\Houston South\Drafting\New Mexico 04\2014\7030114G028\logs\Boring Logs.dwg 03/31/15



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

OrderNo.: 1501A35

February 02, 2015

Heather Woods
APEX TITAN
606 S. Rio Grande Unit A
Aztec. NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-31 (2014)

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/29/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1501A35

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-3 @ 12.5-13

**Project:** Lateral K-31 (2014)

**Collection Date:** 1/23/2015 2:15:00 PM

Lab ID: 1501A35-001

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	nal Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/30/2015 2:19:21 PM	17469
Surr: DNOP	95.4	63.5-128	%REC	1	1/30/2015 2:19:21 PM	17469
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/30/2015 8:29:36 PM	17463
Surr: BFB	95.3	80-120	%REC	1	1/30/2015 8:29:36 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.048	mg/Kg	1	1/30/2015 8:29:36 PM	17463
Toluene	ND	0.048	mg/Kg	1	1/30/2015 8:29:36 PM	17463
Ethylbenzene	ND	0.048	mg/Kg	1	1/30/2015 8:29:36 PM	17463
Xylenes, Total	ND	0.096	mg/Kg	1	1/30/2015 8:29:36 PM	17463
Surr: 4-Bromofluorobenzene	106	80-120	%REC	1	1/30/2015 8:29:36 PM	17463

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

Page 1 of 7

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501A35

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-4 @ 7-7.5

Project: Lateral K-31 (2014)

Collection Date: 1/23/2015 3:30:00 PM

Lab ID: 1501A35-002

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	nal Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/30/2015 5:00:57 PM	17469
Surr: DNOP	96.8	63.5-128	%REC	1	1/30/2015 5:00:57 PM	17469
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/30/2015 8:58:21 PM	17463
Surr: BFB	100	80-120	%REC	1	1/30/2015 8:58:21 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	0.12	0.047	mg/Kg	1	1/30/2015 8:58:21 PM	17463
Toluene	0.44	0.047	mg/Kg	1	1/30/2015 8:58:21 PM	17463
Ethylbenzene	0.048	0.047	mg/Kg	1	1/30/2015 8:58:21 PM	17463
Xylenes, Total	0.47	0.095	mg/Kg	1	1/30/2015 8:58:21 PM	17463
Surr: 4-Bromofluorobenzene	110	80-120	%REC	1	1/30/2015 8:58:21 PM	17463

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

Page 2 of 7

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501A35

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-2 @ 14-14.5

Project: Lateral K-31 (2014)

Collection Date: 1/23/2015 12:00:00 PM

Lab ID: 1501A35-003

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGI	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/30/2015 5:22:20 PM	17469
Surr: DNOP	96.3	63.5-128	%REC	1	1/30/2015 5:22:20 PM	17469
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/30/2015 9:27:02 PM	17463
Surr: BFB	94.9	80-120	%REC	1	1/30/2015 9:27:02 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.048	mg/Kg	1	1/30/2015 9:27:02 PM	17463
Toluene	ND	0.048	mg/Kg	1	1/30/2015 9:27:02 PM	17463
Ethylbenzene	ND	0.048	mg/Kg	1	1/30/2015 9:27:02 PM	17463
Xylenes, Total	ND	0.096	mg/Kg	1	1/30/2015 9:27:02 PM	17463
Surr: 4-Bromofluorobenzene	106	80-120	%REC	1	1/30/2015 9:27:02 PM	17463

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- 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 Sample pH greater than 2.

Page 3 of 7

- RL Reporting Detection Limit

#### Lab Order 1501A35

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-1 @ 14-14.5

**Project:** Lateral K-31 (2014)

**Collection Date:** 1/23/2015 9:30:00 AM

**Lab ID:** 1501A35-004

Matrix: SOIL

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/30/2015 5:44:00 PM	17469
Surr: DNOP	99.4	63.5-128	%REC	1	1/30/2015 5:44:00 PM	17469
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/30/2015 9:55:43 PM	17463
Surr: BFB	95.0	80-120	%REC	1	1/30/2015 9:55:43 PM	17463
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.048	mg/Kg	1	1/30/2015 9:55:43 PM	17463
Toluene	ND	0.048	mg/Kg	1	1/30/2015 9:55:43 PM	17463
Ethylbenzene	ND	0.048	mg/Kg	1	1/30/2015 9:55:43 PM	17463
Xylenes, Total	ND	0.097	mg/Kg	1	1/30/2015 9:55:43 PM	17463
Surr: 4-Bromofluorobenzene	106	80-120	%REC	1	1/30/2015 9:55:43 PM	17463

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

Page 4 of 7

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1501A35 02-Feb-15

			,		J ,						02 1 00 1
Client:	APEX TI	TAN									
Project:	Lateral K	-31 (2014)	)								
Sample ID	MB-17473	SampT	ype: MI	BLK	Tes	tCode: E	PA Method	8015D: Diese	Range (	Organics	
Client ID:	PBS	Batch	ID: 17	473	F	RunNo: 2	3997				
Prep Date:	1/30/2015	Analysis D	ate: 1	30/2015	5	SeqNo: 7	07649	Units: %RE	С		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		8.0		10.00		79.9	63.5	128			
Sample ID	LCS-17473	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Diese	el Range (	Organics	
Client ID:	LCSS	Batch	ID: <b>17</b>	473	F	RunNo: 2	3997				
Prep Date:	1/30/2015	Analysis D	ate: 1	30/2015		SeqNo: 7	07738	Units: %RE	С		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		4.9		5.000		97.1	63.5	128			
Sample ID	LCS-17469	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Diese	el Range (	Organics	
Client ID:	LCSS	Batch	ID: 17	469	F	RunNo: 2	3997				
Prep Date:	1/29/2015	Analysis D	ate: 1	30/2015		SeqNo: 7	07987	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	rganics (DRO)	40	10	50.00	0	80.3	67.8	130			
Surr: DNOP		4.7		5.000		94.9	63.5	128			
Sample ID	MB-17469	SampT	ype: MI	BLK	Tes	tCode: E	PA Method	8015D: Diese	el Range (	Organics	
Client ID:	PBS	Batch	ID: 17	469	F	RunNo: 2	3997				
Prep Date:	1/29/2015	Analysis D	ate: 1	30/2015	5	SeqNo: 7	07988	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	ND	10	40.00		70.6	62.5	100			
Surr: DNOP		7.9		10.00		78.6	63.5	128			
Sample ID	1501A35-001AMS	SampT	ype: MS	S	Tes	tCode: E	PA Method	8015D: Diese	el Range (	Organics	
Client ID:	MW-3 @ 12.5-13	Batch	ID: <b>17</b>	469	F	RunNo: 2	3997				
Prep Date:	1/29/2015	Analysis D	ate: 1	/30/2015	5	SeqNo: 7	08459	Units: mg/K	g		
Analyte		Result			SPK Ref Val				%RPD	RPDLimit	Qual
Diesel Range C Surr: DNOP	Organics (DRO)	50	10	50.05 5.005	0	100 128	29.2	176 128			S
Suii. DNOP		6.4		5.005		120	03.5	120			
	1501A35-001AMSI		ype: MS					8015D: Diese	el Range (	Organics	
	MW-3 @ 12.5-13		ID: 17			RunNo: 2					
Prep Date:	1/29/2015	Analysis D	ate: 1	/30/2015		SeqNo: 7	08460	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dissel Dance C	\ (DDO)	AC	40	40.00	0	00 0	20.2	470	0 0 4	22	

#### Qualifiers:

Surr: DNOP

\* Value exceeds Maximum Contaminant Level.

46

6.1

49.90

4.990

E Value above quantitation range

Diesel Range Organics (DRO)

- 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

29.2

63.5

176

128

8.04

0

ND Not Detected at the Reporting Limit

92.8

122

- P Sample pH greater than 2.
- RL Reporting Detection Limit

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23

0

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1501A35

02-Feb-15

Client:

APEX TITAN

Project:

Lateral K-31 (2014)

Sample ID MB-17463	SampT	ype: ME	BLK	TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch	ID: 17	463	R	RunNo: 2	4020					
Prep Date: 1/29/2015 Analysis Date: 1/30/2015 SeqNo: 708315 Un								(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	950		1000		94.9	80	120				

Sample ID LCS-17463	SampTy	ype: LC	S	Test	Code: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: LCSS	463	RunNo: <b>24020</b>								
Prep Date: 1/29/2015						08316	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	65.8	139			
Surr: RER	1000		1000		102	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

Page 6 of 7

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1501A35

02-Feb-15

Client:

APEX TITAN

Project:

Lateral K-31 (2014)

Sample ID MB-17463	SampT	ype: ME	RI K	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	S Batch ID: 17463				RunNo: <b>24020</b>							
Prep Date: 1/29/2015	Analysis D	Analysis Date: 1/30/2015			SeqNo: 7	08415	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	ND	0.050										
Toluene	ND	0.050										
Ethylbenzene	ND	0.050										
Xylenes, Total	ND	0.10										
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120					
Sample ID LCS-17463	SampT	ype: LC	S	Tes	tCode: El	PA Method	8021B: Vola	tiles				
Client ID: LCSS	Batch ID: 17463			F								

Sample ID LCS-17463	SampT	ype: LC	S	Tes	tCode: El	tiles				
Client ID: LCSS	Batch	n ID: 17	463	R	RunNo: 2	4020				
Prep Date: 1/29/2015	Analysis D	ate: 1/	30/2015	S	eqNo: 7	08416	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	80	120			
Toluene	1.0	0.050	1.000	0	99.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		115	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

Page 7 of 7



Hall Environmentai Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

# Sample Log-In Check List

TFL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Client Name	e: APEX AZTEC	Work Order Number:	1501A35		RoptNo: 1	
Received by	ridate: A	0129 15				
Logged By:	Ashley Gallegos	1/29/2015 8:00:00 AM		A		
Completed B	By: Ashley Gallegos	1/29/2015 11:08:08 AM		A		
Reviewed B	y. M	Miloolie		Q		
Chain of C	Custody	20/15				
	seals intact on sample bettles'	?	Yes	No .	Not Present	
	of Custody complete?		Yes 🗸	No 🗌	Nat Present	
3. How was	s the sample delivered?		Courier			
Log In						
4. Was an	atlempt made to cool the sam	ples?	Yes 🗸	No 🗌	NA 🗆	
5. Were all	samples received at a tempera	ature of >0° C to 6.0°C	Yes 🗸	No 🗌	NA 🗆	
6. Sample	(s) in proper container(s)?		Yes 🗸	No 📙		
7. Sufficien	at sample volume for indicated	test(s)?	Yes 🗸	No 🗌		
8. Are sam	ples (except VOA and ONG) p	roperly preserved?	Yes 🗸	No 🗌		
9. Was pre	servative added to bottles?		Yes	No 🗸	NA	
10. VOA via	is have zero headspace?		Yes	No 🗌	No VOA Vials	
11. Were ar	ny sample containers received	broken?	Yes	No 🗹	# of preserved	
10 0			V	Me 🗆	bottles checked for pH:	
	perwork match bottle labels? screpancies on chain of custod	y)	Yes 🗸	No 🗔		>12 unless noted)
	rices correctly identified on Cha		Yes 🗸	No 🗌	Adjusted?	
14. Is it clea	r what analyses were requester	d?	Yes 🗸	No 🗌		
	holding times able to be met? http://documents.com/documents/	)	Yes 🗸	No 🗌	Checked by:	
	andling (if applicable)			w- D	[2]	
16. Was clie	nt notified of all discrepancies	with this order?	Yes	No L	NA 🗸	
	rson Notified:	Date				
	Whom:	Via:	eMail [_	Phone Fax	In Person	
	garding:					
Cli	ent Instructions:					
17. Addition	nal remarks:					
18. Cooler						
Coole			Seal Date	Signed By		
1	1.0 Good	Yes				

																				CH	AIN C	OF C	USTOL	Y RECO	KD
Offic Proje Sample	e Location ect Manager's Name	n Azle				Laboratory: Address: A Contact: A Phone: PO/SO #: Sampler's Signs	thuc ndy 7031	Fre	que, umar	NM 1		٥٠		RE	ALYSIS QUEST	ED (020,003)							Temp. of content when received Page	oolers / /	-
Proj. N	wher h	100012	Proje	ect Na	ame	(I wacuru	~ ~	ı. w	77.5	pe of C	ontain	nere			87ex	11	1	//	1	/	/				
MICAE	04146	028			ral K-31	(2011)			140/19	pe or c	Villali	1013			0 F	/	11	/	1	//					
Matrix	Date	Time	JUOED	Grab	CHARLES AND A SECOND	ks of Sample(s)	Start	End	VOA	A/G	250 ml	Glass	P/0	80-	BOIS TOW	//	//	//	//	/	L	ab Sa	ample ID (La	ab Use Only)	
5_	1/23/15	1415			MW-3@	12.5-13						1		x	×						150	01	435	-001	
5	1/23/15	1530			MW-46	7-7.5						1		×	×								-(	003	
5	1/23/15	1200			MW-2	@14-14.5						1		×	×									003	
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Matrix Contain	ww	/ - Wastewa				S - Soil SD - Soi	lid L	- Liqui		- Air Ba	ag outh			rcoal to	ube S	SL - slud	je	O - Oil							



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

February 02, 2015

Heather Woods

**APEX TITAN** 

606 S. Rio Grande Unit A

Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-31 (2014)

OrderNo.: 1501A36

#### Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/29/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

#### Lab Order 1501A36

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-1

Project: Lateral K-31 (2014)

Collection Date: 1/27/2015 4:06:00 PM

**Lab ID:** 1501A36-001

Matrix: AQUEOUS Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	2.0	μg/L	2	1/30/2015 1:50:14 PM	R24022
Toluene	ND	2.0	μg/L	2	1/30/2015 1:50:14 PM	R24022
Ethylbenzene	ND	2.0	µg/L	2	1/30/2015 1:50:14 PM	R24022
Xylenes, Total	ND	4.0	µg/L	2	1/30/2015 1:50:14 PM	R24022
Surr: 4-Bromofluorobenzene	111	66.6-167	%REC	2	1/30/2015 1:50:14 PM	R24022

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

Page 1 of 5

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501A36

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-2

Project: Lateral K-31 (2014)

Collection Date: 1/27/2015 4:46:00 PM

Lab ID: 1501A36-002 Matrix: AQUEOUS

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	2.0	µg/L	2	1/30/2015 3:39:36 PM	R24022
Toluene	ND	2.0	μg/L	2	1/30/2015 3:39:36 PM	R24022
Ethylbenzene	ND	2.0	µg/L	2	1/30/2015 3:39:36 PM	R24022
Xylenes, Total	ND	4.0	µg/L	2	1/30/2015 3:39:36 PM	R24022
Surr: 4-Bromofluorobenzene	113	66.6-167	%REC	2	1/30/2015 3:39:36 PM	R24022

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
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 5

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501A36

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-3

Project: Lateral K-31 (2014)

Collection Date: 1/27/2015 5:11:00 PM

**Lab ID:** 150

1501A36-003

Matrix: AOUEOUS Received Date:

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analysi	: NSB
Benzene	ND	1.0	μg/L	1	1/30/2015 4:06:50 PM	R24022
Toluene	ND	1.0	µg/L	1	1/30/2015 4:06:50 PM	R24022
Ethylbenzene	ND	1.0	µg/L	1	1/30/2015 4:06:50 PM	R24022
Xylenes, Total	ND	2.0	μg/L	1	1/30/2015 4:06:50 PM	R24022
Surr: 4-Bromofluorobenzene	110	66.6-167	%REC	1	1/30/2015 4:06:50 PM	R24022

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

Page 3 of 5

- P Sample pH greater than 2.
- RL Reporting Detection Limit

#### Lab Order 1501A36

Date Reported: 2/2/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: MW-4

Project: Lateral K-31 (2014)

Collection Date: 1/27/2015 4:20:00 PM

Lab ID: 1501A36-004

Matrix: AQUEOUS

Received Date: 1/29/2015 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	2.0	μg/L	2	1/30/2015 4:34:08 PM	R24022
Toluene	ND	2.0	µg/L	2	1/30/2015 4:34:08 PM	R24022
Ethylbenzene	ND	2.0	μg/L	2	1/30/2015 4:34:08 PM	R24022
Xylenes, Total	ND	4.0	µg/L	2	1/30/2015 4:34:08 PM	R24022
Surr: 4-Bromofluorobenzene	111	66.6-167	%REC	2	1/30/2015 4:34:08 PM	R24022

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

Page 4 of 5

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1501A36

02-Feb-15

Client:

APEX TITAN

Project:

Lateral K-31 (2014)

Sample ID 5ML RB	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBW	Batch	ID: R2	4022	F	RunNo: 2	4022				
Prep Date:	Analysis D	ate: 1/	30/2015	8	SeqNo: 7	08479	Units: µg/L		•	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	22		20.00		112	66.6	167			
Sample ID 100NG BTEX LCS	SampT	ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSW	Batch	ID: R2	4022	F	RunNo: 2	4022				
Prep Date:	Analysis D	ate: 1/	30/2015	5	SeaNo: 7	08480	Units: ua/L			

Sample ID TOUNG BIEN LC	Sampi	ype. Lo	3	163	loue. Li	AMethod	OUZID. VOIAL	163		
Client ID: LCSW	Batch	ID: R2	4022	F	RunNo: 2	4022				
Prep Date:	Analysis Da	ate: 1/	30/2015	S	SeqNo: 7	08480	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.5	80	120			
Toluene	20	1.0	20.00	0	98.7	80	120			
Ethylbenzene	20	1.0	20.00	0	99.6	80	120			
Xylenes, Total	63	2.0	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	23		20.00		117	66.6	167			

Sample ID 1501A36-001AMS	SampT	ype: MS	3	TestCode: EPA Method 8021B: Volatiles						
Client ID: MW-1	Batch	ID: R2	4022	F	RunNo: 2	4022				
Prep Date:	Analysis D	ate: 1/	30/2015	S	SeqNo: 7	08482	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	39	2.0	40.00	0	96.8	77.5	121			
Toluene	39	2.0	40.00	0.5680	95.2	78.6	122			
Ethylbenzene	39	2.0	40.00	0.6080	96.6	78.1	128			
Xylenes, Total	130	4.0	120.0	1.512	103	80	120			
Surr: 4-Bromofluorobenzene	46		40.00		116	66.6	167			

Sample ID	1501A36-001AMSD	) SampTyp	e: MS	SD	Tes	tCode: El	PA Method	8021B: Volati	les		
Client ID:	MW-1	Batch I	D: <b>R2</b>	24022	R	RunNo: 2	4022				
Prep Date:		Analysis Dat	e: 1/	30/2015	S	SeqNo: 7	08483	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		40	2.0	40.00	0	100	77.5	121	3.38	20	
Toluene		40	2.0	40.00	0.5680	98.5	78.6	122	3.33	20	
Ethylbenzene		40	2.0	40.00	0.6080	99.5	78.1	128	2.94	20	
Xylenes, Total		130	4.0	120.0	1.512	105	80	120	1.32	20	
Surr: 4-Brom	nofluorobenzene	48		40.00		119	66.6	167	0	0	

#### 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

Page 5 of 5



Hall Environmental Analysis Laboratory 4901 Hawkins NE

Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

# Sample Log-In Check List

EL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Client Name:	APEX AZTEC	Work Order Number:	1501A36		RoptNo: 1	
Received by/da	ate:	01/29/15				
Logged By:	Ashley Gallegos	1/29/2015 8:00:00 AM		A		
Completed By:	Ashley Gallegos	1/29/2015 11:13:20 AM		A		
Reviewed By:	CS	01/29/15		Q		
Chain of Cu	stody	` '				
1. Custody se	eals intact on sample bottle:	s?	Yes	No 🗌	Not Present	
2. Is Chain of	Custody complete?		Yes 🗸	No	Not Present	
3. How was t	he sample delivered?		Courier			
Log In						
4. Was an at	tempt made to cool the san	nples?	Yes 🗹	No 🗆	NA 🗌	
5. Were all s	amples received at a tempe	rature of >0° C to 6.0°C	Yes 🗸	No 🗌	NA 🗌	
6. Sample(s)	in proper container(s)?		Yes 🗸	No 🗌		
7. Sufficient s	sample volume for indicated	i test(s)?	Yes 🗸	No 🗌		
8. Are sample	es (except VOA and ONG)	properly preserved?	Yes 🗸	No 🗌		
9. Was prese	ervative added to bottles?		Yes	No 🗸	NA	
10.VOA vials	have zero headspace?		Yes 🗸	No 🗌	No VOA Vials	
11. Were any	sample containers received	i broken?	Yes	No 🗸	# of preserved bottles checked	
	erwork match bottle labels? repancies on chain of custo	dy)	Yes 🗸	No 🗆	for pH:	2 unless noted)
	es correctly identified on Ch		Yes 🗸	No 🗌	Adjusted?	
14. Is it clear v	what analyses were request	ed?	Yes 🗸	No 🗌		
	olding times able to be met y customer for authorization		Yes 🗸	No 🗌	Checked by:	
0	dline (if annline his)					
	ndling (if applicable) notified of all discrepances	with this order?	Yes 🗌	No 🗆	NA 🗸	
	-		100	140	WY C	
	on Notified:	Date	J - 4.0 - 71 - 17	Dhana 🖂 Fau	□ In Passes	
	Vhom:	Via:	eMail	Phone Fax	In Person	
_	arding: nt Instructions:					
17. Additional						
18. Cooler In Cooler	where the same and the same and	n   Seal Intact   Seal No   S	Seal Date	Signed By	ĺ	
1	1.0 Good	Yes	July Date	o give of		

																	(	CHAIN	OF (	CUSTODY RE	CORD
	-													ANALYSIS	11	11	1	11	1	Lab use only	
	36					Laboratory:	Uni	I E	מאנור	<b>2000</b>	on to	0		REQUESTE	D / /	11	/	//	11	Due Date:	
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				14/		Address. 1	TIOU	quer	que	, 10	1-,	100.7			11	///	//	//	/	Temp. of coolers when received (C°):	1.0
Offic	e Locatio	n AZAE	C, 1	32		Contact: A		-					-		111	///	/	11		1 2 3 4	
				100 M		Contact: A	ma	gri	FEM	un			-	/	//	//	/	//	/		
		- 11	1.1.	1.		Phone:	703-		,	2 11			-	/	11	11	11	/		Page of	-
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	ler's Name	ulands	18	lan	ee Dead	Sampler's Sign	ature	and	du	ulu	1000	ماد		N /	///	///		//			
Proj. I	No.								No/T	ype of (	Contain	ners		7	11	11	//	//			
703	0414602	28	La	ten	ame al K-31 (									9	11	///	//	/			
Matrix	Date	Time	DOED	rab	Identifying Mar	ks of Sample(s)	Start	End	VOA	A/G 1Lt.	250 ml	Glass	P/0	BOZIBIEZ	///	III	/			ample ID (Lab Use O	The second second second
W	1/27/15	1606			MW-1				3	137				x				150	11/	136-001 -002 -003	
	1/27/15				MW-2				3					X						-002	
	1/27/15				MW-3				3					x				1,200		- 003	14.6
	1/27/15				MW-4				3					×						-004	
			13				-														Sept 1
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Relino	juished by (	Signature)			Date:	ime: Receiv	ved by:	(Signa	iture)			Date:	1	Time:							
Matrix	ww	/ - Wastewa	iter		W - Water S	- Soil SD - So	lid I	L - Liquid	d A	- Air B	ag	Ç-(	Charc	coal tube SL	- sludge	O - Oil					
Contai		A - 40 ml via			A/G - Amber / Or		1	250 ml -						stic or other							

<u>District I</u> 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 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505

### State of New Mexico **Energy Minerals and Natural** Resources

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

Oil Conservation Division 1220 South St. Francis Dr.

Form C-141

Revised August 8, 2011

Santa Fe, NM 87505												
	F	Releas	e Notifica	ation	and C	orrective	Acti	on				
OPERATOR Initial Report Final Repo										Repor		
ompany:	Enterprise I	Field Serv	vices LLC	(	Contact: Thomas Long							
			l 87401		Telephone No. 505-599-2286							
me: Mobil	Apache #1	10		F	Facility Type: Natural Gas Gathering Pipeline							
vner: Jica	rilla Apach	e Tribe	Mineral O	wner:	Jicarilla A	pache Tribe		API No				
			LOCA	TION	OF REL	EASE						
Section		South	Feet from		West	County						
P 13 23N 3W the Line						the	Line	50	Rio Arriba	t		
1		Lat	ituda 36 218	701		a 107 00020	2	OIL	CONS. DI	V DI	ST. 3	
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ease: Natur	al Gas		14/414	J1(L			19	Volume F	Recovered:	Non	9	
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elease: Sev	verea Pipelin	е			The second secon		rence:				ery:	
iate Notice					If YES, To	Whom? Cory		NMOCD;	Hobson Sar	ndov	al – JA	EPO;
rcourse Re		Yes	⊠ No		IT YES, VO	olume impactin	ig the vv	atercourse				
				0.0041	-1.1.00	F-1	0 1	-111	11-1-1			P
esentative s	tated while c	rossing ov	er the top of ar	n Enter	nterprise ROW the tires slid into a rut allowing the mow board to come into						nto	
											s. Ente	rprise
were dispat	cried and ver	med the p	iipeiine strike. I	ne pip	eline was is	olated, blown	down, io	cked out a	na taggea o	ut.		
ea Affected	and Cleanup	p Action T	aken.* No fluids	s were	released ar	nd no surface i	mpacts	were obser	ved. No fur	ther	action	is
perator of I	iability should	d their ope	erations have fa	iled to	adequately	investigate an	d remed	liate contar	nination tha	t pos	e a thr	eat to
ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the												
esponsibilit	ty for complie	nce with a	any other feder	al, state	e, or local la				DIVISIA	N		_
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ne: Jon E. F	ields			F	Approved by	/ Environmenta	al Specia	alist:	4.4		س	1
or Environn	nental				Approval Da	te: 6/30/	15	Expiration	Date:			
, LIVIIOIII	nontai				pprovai De	10. 6/ 50/		LAPITATION	Date.			
E-mail Address:jefields@eprod.com  Conditions of Approval:												
	Section 13  Section 13  Section 13  Section 13  Sease: Naturelease: Section 13  Sease: Naturelease: Section 13  Sease: Naturelease: Section 14  Sease: Maturelease: Section 15  Sease: Naturelease: Section 16  Sease: Naturelease: Section 17  Sease: Naturelease: Section 18  Sease: Naturelease: Sease: Naturelease: Sease: Naturelease: Naturelease: Naturelease: Naturelease: Naturelease	Section 13 Township 23N  Section 13 Township 23N  Section 13 Yes  Course was Impacted, Desause of Problem and Resease of Problem and Resease of Problem and Resease tative stated while of the Enterprise pipeline were dispatched and verse was Impacted and verse was Impacted, Desause of Problem and Resease of Problem and Resease of Problem and Resease tative stated while of the Enterprise pipeline were dispatched and verse was Impacted, Desause of Problem and Resease tative stated while of the Enterprise pipeline were dispatched and versease and cleanus tify that the information of gulations all operators are propositely for compliance was propositely for compliance was propositely for compliance was propositely for compliance was propositely for compliance. Fields	Section 13	Release Notification  Image: Mobil Apache #10  Image: Mobil Apache Tribe  Image: Mineral O  Image: Mobil Apache Tribe  Image: Mineral O  Image: Mobil Apache Tribe  Image: Mineral O  Image: Mineral	Release Notification OP Company: Enterprise Field Services LLC 14 Reilly Ave, Farmington, NM 87401 me: Mobil Apache #10  Wher: Jicarilla Apache Tribe  Mineral Owner:  LOCATION Section Township Range Feet from Indicate Apache 13 23N 3W Feet from Indicate Apache Latitude 36.218794  NATURE  Rease: Natural Gas Release: Severed Pipeline Rease: Notice Given? Reached? Rease Reached? Rease Reached? Rease Reached? Rease Reached? Rease Reached Reservation off of Jicarilla Tribal Fease Reached Reservation off of Jicarilla Reservation off of Jicarilla Reservation Reserv	Release Notification and C OPERATOR Telephone Me: Mobil Apache #10 Facility Typ  Wher: Jicarilla Apache Tribe Mineral Owner: Jicarilla A  LOCATION OF REL  Section Township Range Feet from the Unine g19  Latitude 36.218794 Longitude  NATURE OF RELI  Lease: Natural Gas Volume of MCF Date and 4/23/2018  Liate Notice Given? If YES, To Bryce Har  Thomas Long Date and If YES, Volumes was Impacted, Describe Fully.* Late was Impacted, Describe Fully.* Late of Problem and Remedial Action: On April 23, 2015, at 4:22pm Late of Problem and Remedial Action: On April 23, 2015, at 4:22pm Late of Problem and Remedial Action: On April 23, 2015, at 4:22pm Late of Problem and Remedial Action: A New Mexico one concept of Problem and Remedial Action: A New Mexico one concept of Special Composition of the Dipeline Servering the pipeline. A New Mexico one concept of Special Composition of the Dipeline Servering of Special Composition of the Dipeline was is lease Affected and Cleanup Action Taken.* No fluids were released and tify that the information given above is true and complete to the best guildeness are required to report and/or file certain release and and public health or the environment. The acceptance of a Composition of Late of the Dipeline Servering the pipeline Servering the pipeline Servering the Late of Late o	Release Notification and Corrective OPERATOR  Company: Enterprise Field Services LLC Ontact: Thomas Long Telephone No. 505-599 The Mobil Apache #10  Wher: Jicarilla Apache Tribe  Mineral Owner: Jicarilla Apache Tribe  Mineral Owner: Jicarilla Apache Tribe  LOCATION OF RELEASE  Section Township Range Feet from the line 919  Latitude 36.218794 Longitude 107.09929  NATURE OF RELEASE  Pase: Natural Gas  Wolume of Release: 1,24 MCF  Bate Notice Given?  Yes No Not Required  Thomas Long  Proourse Reached?  Thomas Long  Proourse Reached?  Was of Problem and Remedial Action: On April 23, 2015, at 4:22pm Enterprise Gases entative stated while crossing over the top of an Enterprise ROW the tires slid in the Enterprise pipeline severing the pipeline. A New Mexico one call was not in pwere dispatched and verified the pipeline strike. The pipeline was isolated, blown and applied to the pipeline strike. The pipeline was isolated, blown and applied to the pipeline strike. The pipeline was isolated, blown and applied to the poperators are required to report and/or file certain release notification and applied to the pipeline strike. The pipeline was isolated, blown and the pipeline strike and complete to the best of my knowled gulations all operators are required to report and/or file certain release notification and applied to the pipeline strike. The pipeline was isolated, blown and the pipeline strike and complete to the best of my knowled gulations all operators are required to report and/or file certain release notification and pipeline was isolated, blown and the pipeline strike. The pipeline was isolated, blown and the pipeline strike and complete to the best of my knowled gulations all operators are required to report and/or file certain release notification and pipeline was isolated. The pipeline was isolated, blown and pipeline was isolated. The pipeline was isolated and verified the pipeline strike. The pipeline was isolated, blown and pipeline was isolated. The port by pipeline was isolated. The pipeline was isolate	Release Notification and Corrective Action PERATOR  Company: Enterprise Field Services LLC Contact: Thomas Long 14 Reilly Ave, Farmington, NM 87401 Telephone No. 505-599-2286 Mine: Mobil Apache #10 Facility Type: Natural Gas Gat Wher: Jicarilla Apache Tribe Mineral Owner: Jicarilla Apache Tribe  LOCATION OF RELEASE Section Township Range Feet from North Couth file 13 23N 3W Feet from Line 13 23N 3W Feet from North Couth Feet from Line 13 23N ANW Feet from North Couth Feet from Line 14 Latitude 36.218794 Longitude 107.099292  NATURE OF RELEASE Bease: Natural Gas Wolume of Release: 1,249 MCF Date and Hour of Occurrence: 4/23/2015 @ 4:22 p.m. liate Notice Given? Yes No Not Required Bryce Hammond - JAOGA Thomas Long Procurse Reached? Yes No If YES, To Whom? Cory Smith—Bryce Hammond - JAOGA If YES, Volume Impacting the W If YES, V	Release Notification and Corrective Action OPERATOR	Release Notification and Corrective Action OPERATOR   Initial Report O	Release Notification and Corrective Action OPERATOR	Release Notification and Corrective Action  OPERATOR

\* Attach Additional Sheets If Necessary

Phone: (713) 381-6684

5-5-15

4NC> 15/8/42638



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 OIL CONS. DIV DIST. 3
JUN 2 9 2015

Form C-141 Revised August 8, 2011

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

# Release Notification and Corrective Action OPERATOR Initial Report Final Report Contact: Thomas Long Address: 614 Reilly Ave, Farmington, NM 87401 Facility Name: Lateral 2C-143 Facility Type: Natural Gas Gathering Pipeline

Surface Owner: Jicarilla Apache Tribe Mineral Owner: Jicarilla Apache Tribe API No.

#### **LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from	North/South	Feet from	East/West	County
G	31	24N	4W	the	Line	the	Line	Sandoval

Latitude 36.266286 Longitude 107.292940

#### NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Suspected internal corrosion	Date and Hour of Occurrence: 6/12/2015 @ 11:25 p.m.	Date and Hour of Discovery: 6/12/2015 @ 5:00 p.m.
Was Immediate Notice Given?		fication to Cory Smith – NMOCD;
☐ Yes ☐ No ☒ Not Required	Hobson Sandoval - JAEPO	
By Whom? Thomas Long	Date and Hour	
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	atercourse
☐ Yes ☒ No		
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action: On July 12, 2015		
release on the Lateral 2C-143 pipeline. The pipeline was isolated, or	depressurized, locked out and tagg	ed out. Remediation and repairs are in
the scheduling process.		
Describe Area Affected and Cleanup Action Taken.* A small area of	of dead vegetation was observed or	the ground surface. Subsurface
impacts are unknown and will be assessed during the repair activiti		
corrective action report.	oo. // iiidi o iii wiii bo odbiiiido	a apon receipt of the time party
I hereby certify that the information given above is true and comple	te to the best of my knowledge and	understand that pursuant to NMOCD
rules and regulations all operators are required to report and/or file		
which may endanger public health or the environment. The accept		
relieve the operator of liability should their operations have failed to		
ground water, surface water, human health or the environment. In operator of responsibility for compliance with any other federal, state		
operator of responsibility for compliance with any other rederal, sta		
1 6 11	OIL CONSERV	ATION DIVISION
Signature: An Prelob		
	Approved by Environmental Specia	diet: / we
Printed Name. Jon E. Fields	Approved by Environmental opecie	mist.
	2/1/-	
Title: Director, Field Environmental	Approval Date: (/8//5	Expiration Date:
	/ /	
E-mail Address:jefields@eprod.com	Conditions of Approval:	
		Attached
Date: 6/04/2045 Phone: (742)294-6094		
Date: 6/24/2015 Phone: (713)381-6684		

\* Attach Additional Sheets If Necessary

#NCS 1518952081

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<u>District I</u> 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

OIL CONS. DIV DIST. 3

JUN 2 9 2015 Form C-141
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				Sai	nta Fe, INIVI 8	7505			
		F	Releas	e Notific	ation and	Corrective	Action		
					OPERATO	OR		al Report	☐ Final Report
Name of C	Company:	Enterprise I	Field Ser	vices LLC	Contact:	Thomas Long			
Address: 6	14 Reilly A	Ave, Farmin	gton, NN	187401	Telephor	ne No. 505-599	-2286		
Facility Na	me: Apacl	he Hills #2			Facility T	ype: Natural C	Sas Gathering	Pipeline	
Surface O	wner: <b>Jica</b>	rilla Apach	e Tribe		Owner: Jicarilla		e API	No.	
Unit Letter N	Section 8	Township 23N	Range 3W	Feet from the	North/South Line	Feet from the	East/West Line	County Rio Arri	ba
			L	atitude_36.2	3355 Longitu	ıde_107.18543	3		

NATURE	OF RELEASE						
Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release: Unknown	Volume Recovered: None					
Source of Release: Suspected internal corrosion	Date and Hour of Occurrence: 6/9/2015 @ 3:20 p.m.	Date and Hour of Discovery: 6/9/2015 @ 4:00 p.m.					
Was Immediate Notice Given?  ☐ Yes ☐ No ☐ Not Required	If YES, To Whom? Cory Smith - NMOCD; Hobson Sandoval -						
By Whom? Thomas Long	Date and Hour 6/10/2014 @ 7:48	8 a.m.					
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the W						
If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action: On July 9, 2015 gas release on the Apache Hills #2 well tie. The pipeline was isolated the scheduling process.							
Describe Area Affected and Cleanup Action Taken.* A small area impacts are unknown and will be assessed during the repair activit corrective action report.  I hereby certify that the information given above is true and complete.	ties. A "final" C-141 will be submitte	ed upon receipt of the third party					
rules and regulations all operators are required to report and/or file which may endanger public health or the environment. The accep relieve the operator of liability should their operations have failed to ground water, surface water, human health or the environment. In operator of responsibility for compliance with any other federal, sta	e certain release notifications and per tance of a C-141 report by the NMC o adequately investigate and remed a addition, NMOCD acceptance of a	erform corrective actions for releases OCD marked as "Final Report" does not liate contamination that pose a threat to C-141 report does not relieve the					
Signature: Teichl  Printed Name: Jon E. Fields	OIL CONSER\ Approved by Environmental Specia	VATION DIVISION  alist:					
Title: Director, Field Environmental	Approval Date: V8/15	Expiration Date:					
E-mail Address:jefields@eprod.com  Date: 6/73/70/5 Phone: (713)381-6684	Conditions of Approval:	Attached					

\* Attach Additional Sheets If Necessary

HNCS 1518952955

