

**3R-1011**

**Release Report/ General  
Correspondence**

**Enterprise SJ**

**Date: Jan-Mar 2016**

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

Form C-141  
Revised August 8, 2011

MAR 28 2016  
Submit 1 Copy to appropriate District Office  
in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final 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: Federal E#3A	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: BLM	Mineral Owner: BLM	Serial Number: NM 038138
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LOCATION OF RELEASE

Unit Letter K	Section 13	Township 27N	Range 8W	Feet from the 2051	North/South Line	Feet from the 1535	East/West Line	County San Juan
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Latitude 36.571880 Longitude -107.638095

NATURE OF RELEASE

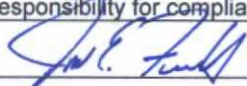

Type of Release: Natural Gas and Condensate	Volume of Release Unknown	Volume Recovered: None
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: 2/9/2016 @ 4:30 p.m.	Date and Hour of Discovery: 2/9/2016 @ 6:00 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Time	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On February 9, 2016, Enterprise technicians discovered a gas leak on the Federal E#3A pipeline. The pipeline was isolated, blown down, locked out and tagged out. Due to the inclement weather conditions, initial repair and remediation activities were not initiated until February 29, 2016. Enterprise has determined this release to be reportable per NMOCD and BLM regulation on March 16, 2016 due to the volume of subsurface impacts.

Describe Area Affected and Cleanup Action: Permanent repairs and remediation are scheduled for March 24, 2016. Enterprise will remove the contaminant mass by mechanical excavation. A third party corrective action report will be included with the "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.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Environmental	Approval Date: 03/28/16	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 3/23/2016	Phone: (713)381-6684	

\* Attach Additional Sheets If Necessary

NVF1608855555

①



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## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final 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: Trunk MD 16 Inch Pipeline	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No.
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### LOCATION OF RELEASE

Unit Letter O	Section 36	Township 30N	Range 11W	Feet from the 161	North <del>South</del> Line	Feet from the 2310	East <del>West</del> Line	County San Juan	C.
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Latitude 36.76163 Longitude -107.94178

### NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release <b>21,300 MCF Gas</b>	Volume Recovered: <b>None</b>
Source of Release: Pipeline Rupture	Date and Hour of Occurrence: <b>2/12/16 @ 8:45 p.m.</b>	Date and Hour of Discovery: <b>2/12/16 @ 10:00 p.m.</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Notification to Brandon Powell - NMOCD; <b>OIL CONS. DIV DIST. 3</b>	
By Whom? Thomas Long	Date and Time 2/12/2016 @ 10:00 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume <b>FEB 26 2016</b>	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On February 12, 2016, Enterprise responded to investigate a pressure loss into Val-Verde plant. The area supervisor dispatched technicians to check the Trunk MD corridor. A gas release was the found approximately 2 miles north of Val-Verde plant. Enterprise technician isolated, depressurized, locked out and tagged out the pipeline. Gas loss was calculated to be 21,300 mcf. Repairs to the pipeline were completed and the pipeline was returned to service on February 14, 2016

Describe Area Affected and Cleanup Action: Minimal fluids were released as a result of the rupture. A third party environmental contractor collected soil samples for laboratory analysis prior to backfill of the excavation. All sample results were below the site specific remediation standard. A third party corrective action report will be submitted with the "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.

Signature: <i>Jon E. Fields</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Director, Environmental	Approval Date: <u>03/09/2016</u>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>2-23-2016</u> Phone: (713)381-6684	<i>Sample Area BTEX TPH Chlorides</i> <i>NOF 1606929306</i>	

\* Attach Additional Sheets If Necessary



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JAN 15 2016

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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

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: <b>Bruington #15E</b>	Facility Type: <b>Natural Gas Gathering Pipeline</b>

Surface Owner: <b>Private</b>	Mineral Owner: <b>Private</b>	API No. 41
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## LOCATION OF RELEASE

Unit Letter <b>F</b>	Section <b>15</b>	Township <b>30N</b>	Range <b>11W</b>	Feet from the 1877	<u>North</u> South Line	Feet from the 2168	East <u>West</u> Line	County <b>San Juan</b>
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Latitude 36.814070 Longitude -107.98030

## NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release <b>4.47 MCF Gas; 5-10 BBLs Fluids</b>	Volume Recovered: <b>None</b>
Source of Release: Internal Corrosion	Date and Hour of Occurrence: <b>11/12/15 @ 10:34 a.m.</b>	Date and Hour of Discovery: <b>11/12/15 @ 11:20 a.m.</b>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy Notification to Cory Smith - NMOCD;	
By Whom? <b>Thomas Long</b>	Date and Time: <b>11/21/2015 @ 1:57 p.m.</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On November 12, 2015, Enterprise technicians discovered a gas leak on the Bruington #15E pipeline. A small amount of fluids ground surface. The pipeline was isolated, blown down, locked out and tagged out for safety and environmental concerns. Remediation was completed on November 20, 2105.

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 40 feet long by 17 feet wide and ranging from 9 to 12 feet deep. Approximately 204 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation approved 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.

Signature: <i>Jon Fields</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jon E. Fields	Approved by Environmental Specialist <i>[Signature]</i>	
Title: Director, Environmental	Approval Date: <u>1-22-2016</u>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>1-12-2016</u> Phone: (713)381-6684		

\* Attach Additional Sheets If Necessary

NCS1534129032

30





**OIL CONS. DIV DIST. 3**

**JAN 15 2016**

**CORRECTIVE ACTION REPORT**

Property:

**Bruington # 15E Well Tie Release  
NW 1/4, S15 T30N R11W  
San Juan County, New Mexico**


December 17, 2015  
Apex Project No. 7250415026

Prepared for:

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

Prepared by:

  
\_\_\_\_\_  
Chad D'Aponti  
Project Scientist

  
\_\_\_\_\_  
Kyle Summers, CPG  
Branch Manager/Senior Geologist



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## **CORRECTIVE ACTION REPORT**

### **Bruington #15E Well Tie Release**

NW 1/4, S15 T30N R11W  
San Juan County, New Mexico

**Apex Project No. 7250415026**

## **1.0 INTRODUCTION**

### **1.1 Site Description & Background**

The Bruington #15E Well Tie Release Site is located within the Enterprise Products Operating LLC (Enterprise) pipeline right-of-way (ROW) in the northwest (NW) ¼ of Section 15 in Township 30 North and Range 11 West in rural San Juan County, New Mexico (36.81407N, 107.98030W), referred to hereinafter as the "Site" or "subject Site". The Site is located on private property owned by Aztec Orchards Inv Co Trust c/o R. Chaffee, and consists of native vegetation rangeland periodically interrupted with oil and gas gathering facilities, including the Enterprise natural gas well tie which formerly traversed the area from east to west.

On November 19, 2015, Enterprise initiated excavation activities to facilitate the repair of the pipeline and to remediate potential hydrocarbon impact. The release point was identified, and the pipeline to the non-producing well was subsequently taken out of service by physical removal. The release was caused by corrosion of the pipeline. The surface expression of the release was identified by soil discoloration and minimal evidence of dried liquid.

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 action 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* (RALs) 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 EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex utilized the general site characteristics obtained during the completion of corrective action activities to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:



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

\*Based on an anticipated groundwater depth of >50 feet below grade surface (bgs).

Based on Apex's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 20. This ranking is based on the following:

- The nearest residence is located over 1,500 feet northwest of the site and the nearest identified water well documented by the Office of the State Engineer website database is located over 2,000 feet northwest of the Site, with a recorded depth to water of 30 feet. However, due to the difference in elevation of approximately 100 feet, the depth to groundwater at the Site is anticipated to be greater than 50 feet below grade surface (bgs), resulting in a ranking of "10" for depth to groundwater.
- 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. These proximities result in a wellhead protection area ranking of "0".
- The release point is located approximately 300 feet southwest of an ephemeral wash, which is identified as a "blue line" on the United States Geological Society topographic map. This information supports a distance to surface water ranking of "20".

### 3.0 RESPONSE ACTIONS

#### 3.1 Soil Excavation Activities

On November 19, 2015, Enterprise shut in the Bruington #15E well tie and initiated excavation activities at the Site to repair the subsurface leak, and remediate potential hydrocarbon impact. The release point was identified, and the pipeline to the non-producing well was subsequently taken out of service by physical removal. The surface expression of the release included soil discoloration and minimal liquids. During the corrective action activities, West States Energy Contractors provided heavy equipment and labor support, and Raneer Deechilly and Chad D'Aponti, Apex environmental professionals, provided environmental support.

Subsequent to the removal of approximately 200 feet of pipe, additional hydrocarbon affected soils were removed at the source of the release. Confirmation soil samples (C-1 through C-8) were collected from the sidewalls and base of the excavation for laboratory analysis. The final excavation measured approximately 40 feet long by 17 feet wide at the maximum extents, with total depths ranging from approximately nine (9) feet bgs to twelve (12) feet bgs.

A total of approximately 204 cubic yards of hydrocarbon affected soils were transported to the Industrial Ecosystems, Inc. (IEI) landfarm on Crouch Mesa, near Aztec, 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.



### 3.2 Soil Sampling Program

Apex screened head-space samples of the impacted soils with a photoionization detector (PID) fitted with a 10.6 eV lamp to estimate excavation limits.

Apex's soil sampling program included the collection of eight (8) confirmation samples (C-1 through C-8) from the sidewalls and base of the 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 label, and placed on ice in a cooler, which was secured with a custody seal. The samples and completed chain-of-custody form were relinquished to Hall Environmental Laboratory of Albuquerque, New Mexico for analysis.

### 3.3 Laboratory Analytical Methods

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

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 NMAC 19.15.29 *Release Notification*. 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 (RLs) associated with the final confirmation samples (C-1 through C-8) collected from the excavated area to the OCD RALs for sites having a total ranking score of "20".

- The laboratory analyses of the confirmation samples from soils remaining in place did not indicate benzene concentrations above the laboratory reporting limits, which are below the OCD RAL of 10 milligram per kilogram (mg/kg).
- The laboratory analyses of the confirmation samples from soils remaining in place indicate total BTEX concentrations ranging from below the laboratory reporting limits to 0.87 mg/kg (C-5), which are below the OCD RAL of 50 mg/kg.
- The laboratory analyses of confirmation samples collected from soils remaining in place indicate combined TPH GRO/DRO concentrations ranging from below laboratory reporting limits to 65.7 mg/kg (C-5), which are below the OCD RAL of 100 mg/Kg for a Site ranking of "20".

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

## 5.0 FINDINGS AND RECOMMENDATIONS

The Bruington #15E Well Tie Release Site is located within the Enterprise pipeline ROW in the NW ¼ of Section 15 in Township 30 North and Range 11 West in rural San Juan County, New Mexico. The Site is located on private land belonging to Aztec Orchards Inv Co Trust c/o R. Chaffe, and consists of native vegetation rangeland periodically interrupted with oil and gas gathering facilities, including the Enterprise natural gas well tie, which formerly traversed the area from east to west.

On November 19, 2015, Enterprise shut in the Bruington #15E well tie and initiated excavation activities at the Site to repair the subsurface leak, and remediate potential hydrocarbon impact. The release point was identified, and the pipeline to the non-producing well was subsequently taken out of service by physical removal. The release occurred as a result of corrosion. The subsurface expression of the release was identified by soil discoloration and minimal liquid 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 silty-sands, shaly-sandstone, and mudstone.
- The final excavation measure approximately 40 feet long by 17 feet wide at the maximum extents, with total depths ranging from nine (9) to twelve (12) feet bgs.
- Prior to backfilling, eight (8) confirmation soil samples were collected from the resulting final excavation for laboratory analyses. Based on analytical results, soils remaining in place do not exhibit BTEX or TPH GRO/DRO concentrations above the OCD RALs for a site ranking of "20".
- A total of approximately 204 cubic yards of hydrocarbon affected soils were transported to the IEI landfarm on Crouch Mesa, near Aztec, NM for disposal/remediation. The excavation was backfilled with clean imported fill and contoured to the approximate surrounding grade.

**Based on the laboratory analytical results, no additional investigation or corrective action appears warranted at this time.**



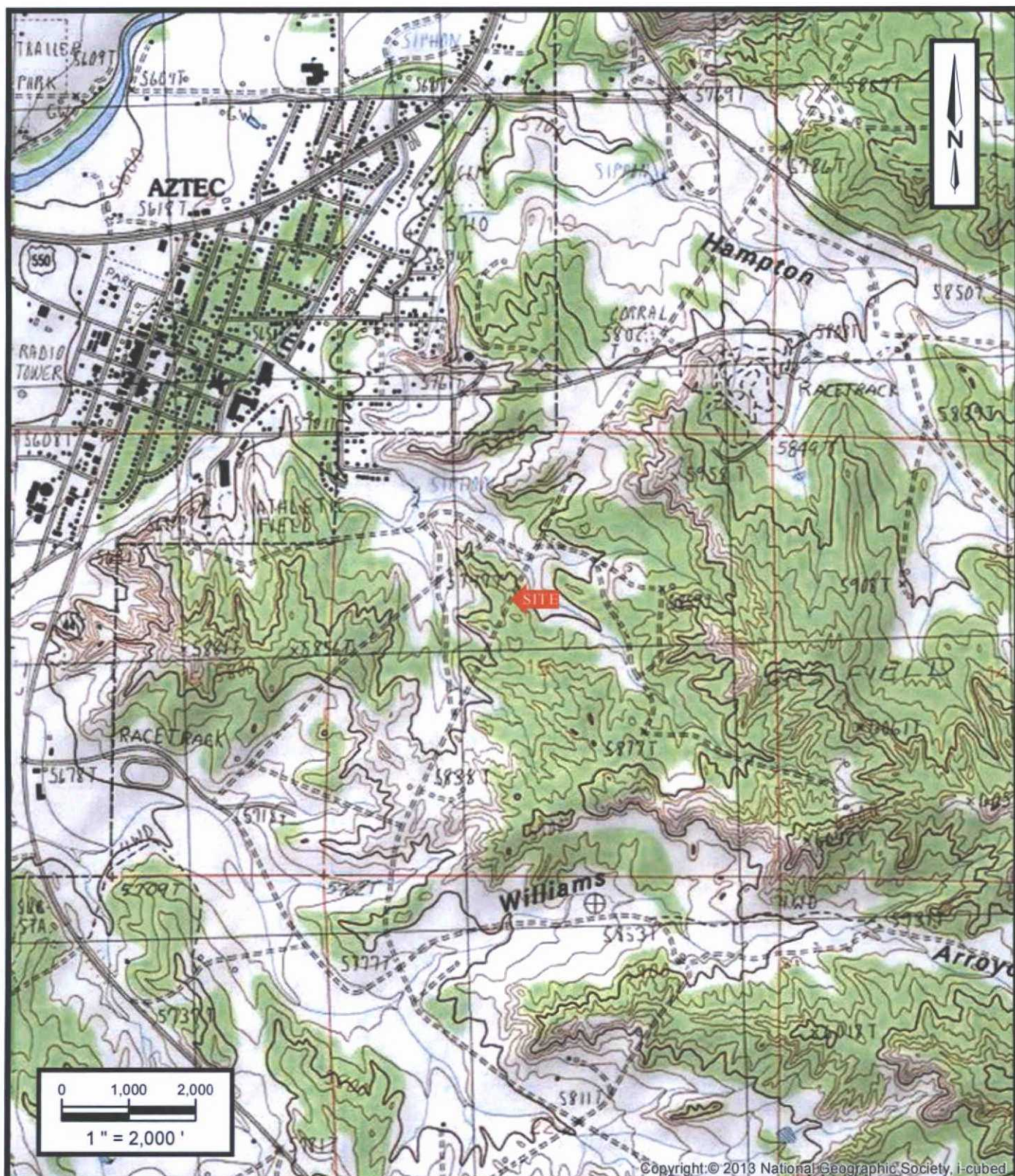
## **6.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE**

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. 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.





**Bruington #15E Well Tie Release**  
 NW1/4 Sec15 T30N R11W  
 San Juan County, New Mexico  
 36.81407N, 107.98030W

Project No. 7250415026

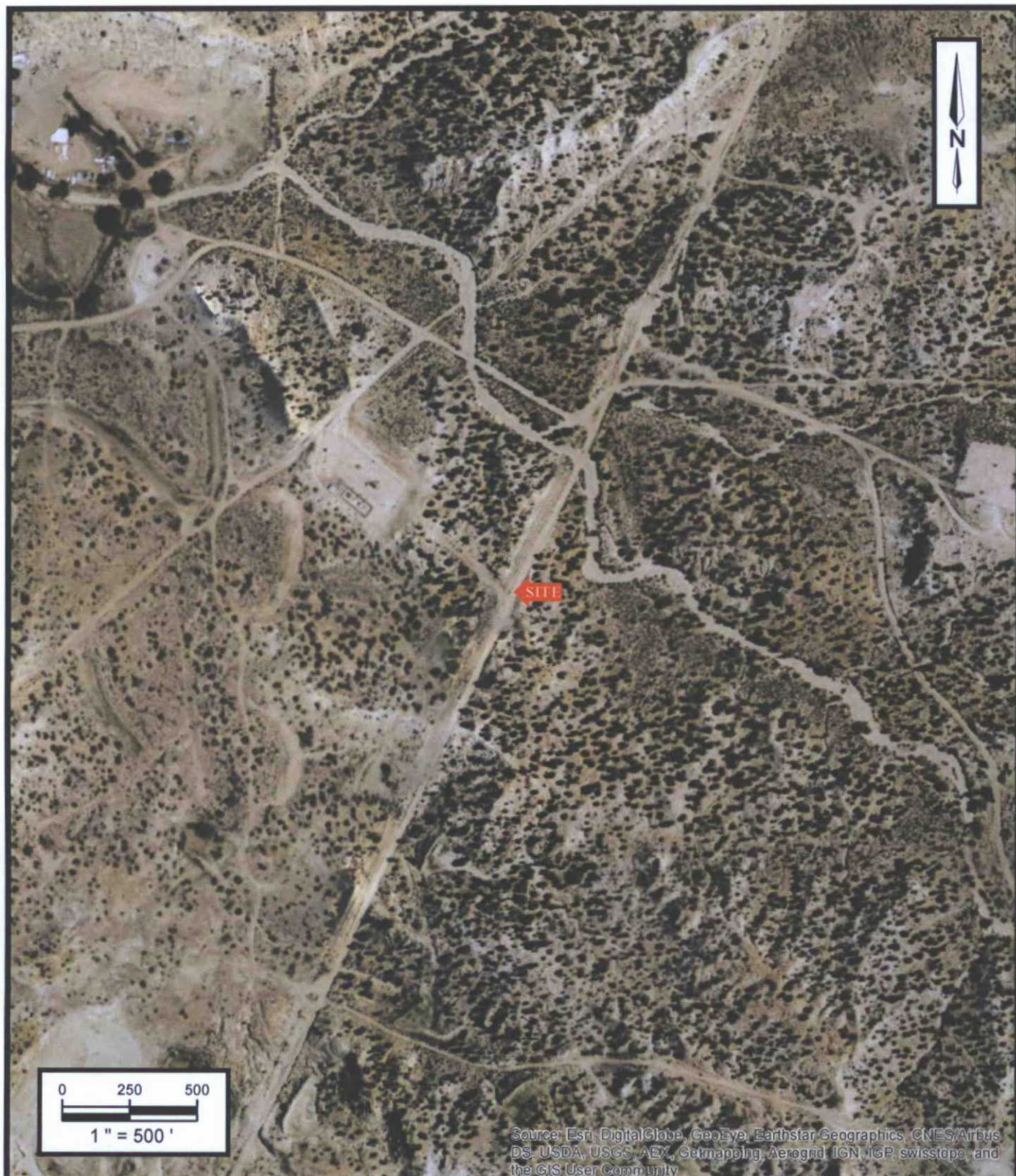


**Apex TITAN, Inc.**  
 606 South Rio Grande, Suite A  
 Aztec, NM 87410  
 Phone: (505) 334-5200  
[www.apexcoos.com](http://www.apexcoos.com)  
 A Subsidiary of Apex Companies, LLC

**FIGURE 1**

**Topographic Map**  
 Aztec, NM Quadrangle  
 1985





**Bruington #15E Well Tie Release**  
 NW1/4 Sec15 T30N R11W  
 San Juan County, New Mexico  
 36.81407N, 107.98030W

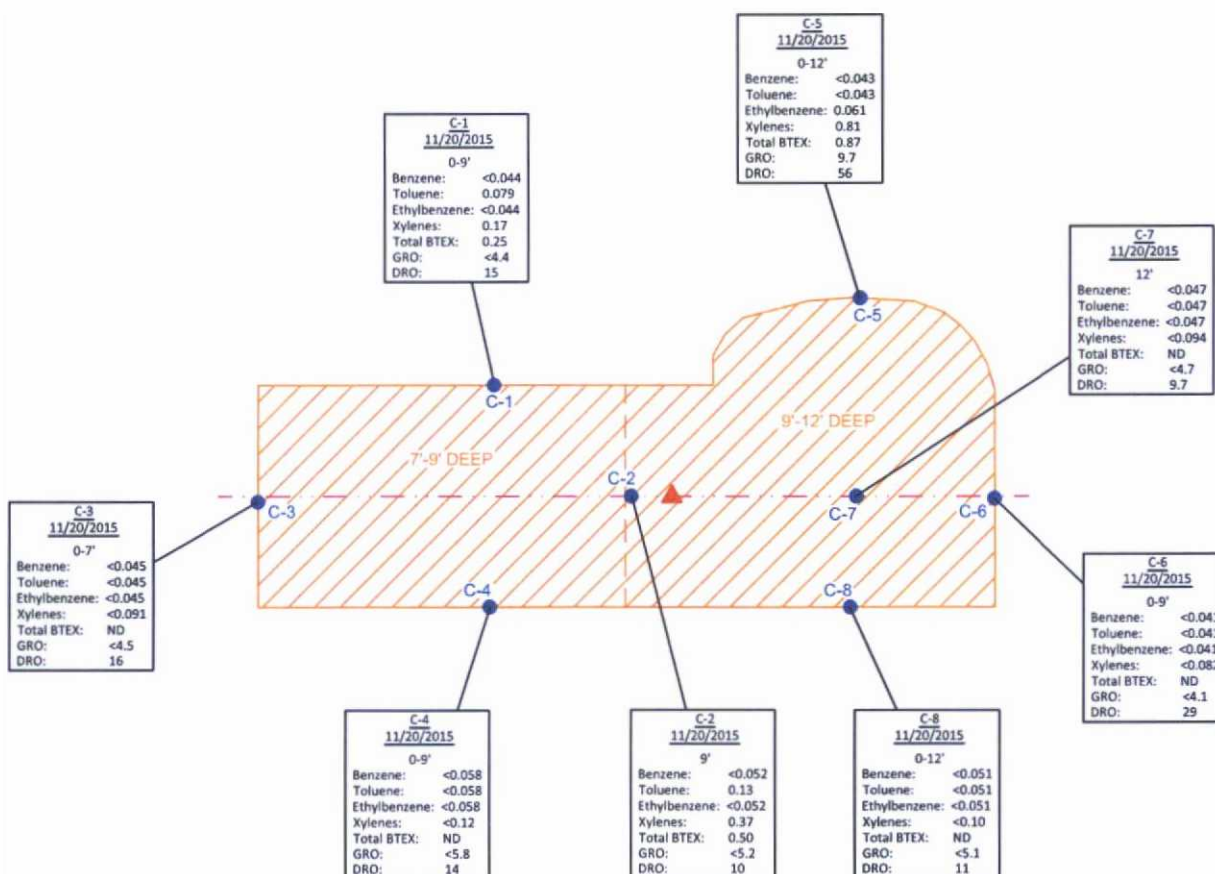
Project No. 7250415026



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

**FIGURE 2**  
**Site Vicinity Map**

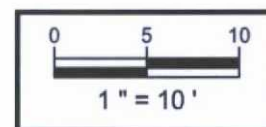




**LEGEND:**

- APPROXIMATE PIPELINE LOCATION
- SAMPLE LOCATION
- ▲ RELEASE POINT
- ▨ EXTENT OF SOIL REMOVAL DUE TO IMPACT

NOTE: ALL VALUES ARE REPRESENTED IN mg/kg;  
ND - NOT DETECTED



**Bruington #15E Well Tie Release**  
NW1/4 Sec15 T30N R11W  
San Juan County, New Mexico  
36.81407N, 107.98030W



**Apex TITAN, Inc.**  
606 S. Rio Grande, Suite A  
Aztec, New Mexico 87410  
Phone: (505) 334-5200  
[www.apexcos.com](http://www.apexcos.com)  
A Subsidiary of Apex Companies, LLC

**FIGURE 3**  
**Site Map with**  
**Soil Analytical Results**

Project No. 7250415026



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

Form C-138  
Revised August 1, 2011

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

1. **Generator Name and Address:**  
Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401

2. **Originating Site:**  
Bruington #15E

3. **Location of Material (Street Address, City, State or ULSTR):**  
Unit Letter F Section 15 T30N R11W; 36.814070, -107.980300, San Juan County, NM

4. **Source and Description of Waste:** Excavated soil impacted with hydrocarbons associated with a pipeline release.

5. **Estimated Volume** 50 yd<sup>3</sup> bbls **Known Volume** (to be entered by the operator at the end of the haul) 144 yd<sup>3</sup> / bbls  
11/23/15 - 600 cy

5. **GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS**

I, Thomas Long *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 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 hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is not hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide details in Box 4)

**GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFILL**

I, Thomas Long *Thomas Long*, representative for Enterprise Field Services, LLC authorize IEI, Inc. to  
Generator Signature  
complete the required testing/sign the Generator Waste Testing Certification.

I, h. Delph *h. Delph*, representative for IEI, 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 landfills 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: To Be Determined**

### OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: JFJ Landfarm/Industrial Ecosystems, Inc. \* Permit #: NM 01-0010B  
Address of Facility: #49 CR 2150 Aztec, New Mexico

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: h. Delph  
SIGNATURE: h. Delph  
Surface Waste Management Facility Authorized Agent

TITLE: Clerk  
TELEPHONE NO.: 505-632-1782

DATE: 11/20/15

11/15

## Photograph 1

View of in-progress corrective action activities, facing east.



## Photograph 2

View of in-progress corrective action activities, facing northwest.



## Photograph 3

View of the final excavation, facing north.





**Photograph 4**

View of the final excavation, facing west.



**TABLE 1**  
**Bruington #15E Well Tie 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)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100	
Excavation Confirmation Samples									
C-1	11.20.15	0-9	<0.044	0.079	<0.044	0.17	0.25	<4.4	15
C-2	11.20.15	9	<0.052	0.13	<0.052	0.37	0.50	<5.2	10
C-3	11.20.15	0 to 7	<0.045	<0.045	<0.045	<0.091	ND	<4.5	16
C-4	11.20.15	0 to 9	<0.058	<0.058	<0.058	<0.12	ND	<5.8	14
C-5	11.20.15	0 to 12	<0.043	<0.043	0.061	0.81	0.87	9.7	56
C-6	11.20.15	0 to 9	<0.041	<0.041	<0.041	<0.082	ND	<4.1	29
C-7	11.20.15	12	<0.047	<0.047	<0.047	<0.094	ND	<4.7	9.7
C-8	11.20.15	0 to 12	<0.051	<0.051	<0.051	<0.10	ND	<5.1	11

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

ND = Not Detected above the Laboratory Reporting Limits

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](http://www.hallenvironmental.com)

November 24, 2015

Kyle Summers  
APEX TITAN  
606 S. Rio Grande Unit A  
Aztec, NM 87410  
TEL: (903) 821-5603  
FAX

RE: H-46/Bruington #15G

OrderNo.: 1511987

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 11/21/2015 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 1511987

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-1

Project: H-46/Bruington #15G

Collection Date: 11/20/2015 12:00:00 PM

Lab ID: 1511987-001

Matrix: MEOH (SOIL)

Received Date: 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	15	9.7		mg/Kg	1	11/23/2015 10:19:53 AM	22461
Surr: DNOP	95.9	70-130		%REC	1	11/23/2015 10:19:53 AM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	11/23/2015 11:00:04 AM	A30417
Surr: BFB	87.6	75.4-113		%REC	1	11/23/2015 11:00:04 AM	A30417
<b>EPA METHOD 8021B: VOLATILES *</b>							Analyst: NSB
Benzene	ND	0.044		mg/Kg	1	11/23/2015 11:00:04 AM	B30417
Toluene	0.079	0.044		mg/Kg	1	11/23/2015 11:00:04 AM	B30417
Ethylbenzene	ND	0.044		mg/Kg	1	11/23/2015 11:00:04 AM	B30417
Xylenes, Total	0.17	0.088		mg/Kg	1	11/23/2015 11:00:04 AM	B30417
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	11/23/2015 11:00:04 AM	B30417

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

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



## Analytical Report

Lab Order 1511987

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-2

Project: H-46/Bruington #15G

Collection Date: 11/20/2015 12:10:00 PM

Lab ID: 1511987-002

Matrix: MEOH (SOIL)

Received Date: 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	10	9.9		mg/Kg	1	11/23/2015 10:41:18 AM	22461
Surr: DNOP	95.1	70-130		%REC	1	11/23/2015 10:41:18 AM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.2		mg/Kg	1	11/23/2015 11:24:41 AM	A30417
Surr: BFB	91.4	75.4-113		%REC	1	11/23/2015 11:24:41 AM	A30417
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.052		mg/Kg	1	11/23/2015 11:24:41 AM	B30417
Toluene	0.13	0.052		mg/Kg	1	11/23/2015 11:24:41 AM	B30417
Ethylbenzene	ND	0.052		mg/Kg	1	11/23/2015 11:24:41 AM	B30417
Xylenes, Total	0.37	0.10		mg/Kg	1	11/23/2015 11:24:41 AM	B30417
Surr: 4-Bromofluorobenzene	118	80-120		%REC	1	11/23/2015 11:24:41 AM	B30417

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

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

**Analytical Report**

Lab Order 1511987

Date Reported: 11/24/2015

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** APEX TITAN**Client Sample ID:** C-3**Project:** H-46/Bruington #15G**Collection Date:** 11/20/2015 12:20:00 PM**Lab ID:** 1511987-003**Matrix:** MEOH (SOIL)**Received Date:** 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	16	10		mg/Kg	1	11/23/2015 11:02:39 AM	22461
Surr: DNOP	96.8	70-130		%REC	1	11/23/2015 11:02:39 AM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	11/23/2015 11:49:10 AM	A30417
Surr: BFB	87.6	75.4-113		%REC	1	11/23/2015 11:49:10 AM	A30417
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.045		mg/Kg	1	11/23/2015 11:49:10 AM	B30417
Toluene	ND	0.045		mg/Kg	1	11/23/2015 11:49:10 AM	B30417
Ethylbenzene	ND	0.045		mg/Kg	1	11/23/2015 11:49:10 AM	B30417
Xylenes, Total	ND	0.091		mg/Kg	1	11/23/2015 11:49:10 AM	B30417
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	11/23/2015 11:49:10 AM	B30417

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

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



## Analytical Report

Lab Order 1511987

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-4

Project: H-46/Bruington #15G

Collection Date: 11/20/2015 12:30:00 PM

Lab ID: 1511987-004

Matrix: MEOH (SOIL)

Received Date: 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	14	9.4		mg/Kg	1	11/23/2015 11:31:35 AM	22461
Surr: DNOP	86.4	70-130		%REC	1	11/23/2015 11:31:35 AM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.8		mg/Kg	1	11/23/2015 12:13:47 PM	A30417
Surr: BFB	87.0	75.4-113		%REC	1	11/23/2015 12:13:47 PM	A30417
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.058		mg/Kg	1	11/23/2015 12:13:47 PM	B30417
Toluene	ND	0.058		mg/Kg	1	11/23/2015 12:13:47 PM	B30417
Ethylbenzene	ND	0.058		mg/Kg	1	11/23/2015 12:13:47 PM	B30417
Xylenes, Total	ND	0.12		mg/Kg	1	11/23/2015 12:13:47 PM	B30417
Surr: 4-Bromofluorobenzene	111	80-120		%REC	1	11/23/2015 12:13:47 PM	B30417

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

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

## Analytical Report

Lab Order 1511987

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-5

Project: H-46/Bruington #15G

Collection Date: 11/20/2015 12:40:00 PM

Lab ID: 1511987-005

Matrix: MEOH (SOIL)

Received Date: 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	56	9.9		mg/Kg	1	11/23/2015 11:53:04 AM	22461
Surr: DNOP	94.7	70-130		%REC	1	11/23/2015 11:53:04 AM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	9.7	4.3		mg/Kg	1	11/23/2015 12:38:16 PM	A30417
Surr: BFB	151	75.4-113	S	%REC	1	11/23/2015 12:38:16 PM	A30417
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.043		mg/Kg	1	11/23/2015 12:38:16 PM	B30417
Toluene	ND	0.043		mg/Kg	1	11/23/2015 12:38:16 PM	B30417
Ethylbenzene	0.061	0.043		mg/Kg	1	11/23/2015 12:38:16 PM	B30417
Xylenes, Total	0.81	0.087		mg/Kg	1	11/23/2015 12:38:16 PM	B30417
Surr: 4-Bromofluorobenzene	145	80-120	S	%REC	1	11/23/2015 12:38:16 PM	B30417

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

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



## Analytical Report

Lab Order 1511987

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-6

Project: H-46/Bruington #15G

Collection Date: 11/20/2015 12:50:00 PM

Lab ID: 1511987-006

Matrix: MEOH (SOIL)

Received Date: 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	29	9.5		mg/Kg	1	11/23/2015 12:14:22 PM	22461
Surr: DNOP	94.9	70-130		%REC	1	11/23/2015 12:14:22 PM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	11/23/2015 1:02:45 PM	A30417
Surr: BFB	87.3	75.4-113		%REC	1	11/23/2015 1:02:45 PM	A30417
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.041		mg/Kg	1	11/23/2015 1:02:45 PM	B30417
Toluene	ND	0.041		mg/Kg	1	11/23/2015 1:02:45 PM	B30417
Ethylbenzene	ND	0.041		mg/Kg	1	11/23/2015 1:02:45 PM	B30417
Xylenes, Total	ND	0.082		mg/Kg	1	11/23/2015 1:02:45 PM	B30417
Surr: 4-Bromofluorobenzene	111	80-120		%REC	1	11/23/2015 1:02:45 PM	B30417

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

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

## Analytical Report

Lab Order 1511987

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-7

Project: H-46/Bruington #15G

Collection Date: 11/20/2015 1:00:00 PM

Lab ID: 1511987-007

Matrix: MEOH (SOIL)

Received Date: 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	9.7	9.4		mg/Kg	1	11/23/2015 12:35:41 PM	22461
Surr: DNOP	97.6	70-130		%REC	1	11/23/2015 12:35:41 PM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/23/2015 1:27:11 PM	A30417
Surr: BFB	83.5	75.4-113		%REC	1	11/23/2015 1:27:11 PM	A30417
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	11/23/2015 1:27:11 PM	B30417
Toluene	ND	0.047		mg/Kg	1	11/23/2015 1:27:11 PM	B30417
Ethylbenzene	ND	0.047		mg/Kg	1	11/23/2015 1:27:11 PM	B30417
Xylenes, Total	ND	0.094		mg/Kg	1	11/23/2015 1:27:11 PM	B30417
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	11/23/2015 1:27:11 PM	B30417

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

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



**Analytical Report**

Lab Order 1511987

Date Reported: 11/24/2015

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** APEX TITAN**Client Sample ID:** C-8**Project:** H-46/Bruington #15G**Collection Date:** 11/20/2015 1:10:00 PM**Lab ID:** 1511987-008**Matrix:** MEOH (SOIL)**Received Date:** 11/21/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	11	10		mg/Kg	1	11/23/2015 12:57:06 PM	22461
Surr: DNOP	97.9	70-130		%REC	1	11/23/2015 12:57:06 PM	22461
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	11/23/2015 1:51:44 PM	A30417
Surr: BFB	83.6	75.4-113		%REC	1	11/23/2015 1:51:44 PM	A30417
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.051		mg/Kg	1	11/23/2015 1:51:44 PM	B30417
Toluene	ND	0.051		mg/Kg	1	11/23/2015 1:51:44 PM	B30417
Ethylbenzene	ND	0.051		mg/Kg	1	11/23/2015 1:51:44 PM	B30417
Xylenes, Total	ND	0.10		mg/Kg	1	11/23/2015 1:51:44 PM	B30417
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	11/23/2015 1:51:44 PM	B30417

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1511987

24-Nov-15

Client: APEX TITAN

Project: H-46/Bruington #15G

Sample ID	MB-22461	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	22461	RunNo:	30412					
Prep Date:	11/23/2015	Analysis Date:	11/23/2015	SeqNo:	928020	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	9.2		10.00		91.9	70	130			

Sample ID	LCS-22461	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	22461	RunNo:	30412					
Prep Date:	11/23/2015	Analysis Date:	11/23/2015	SeqNo:	928030	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	57.4	139			
Surr: DNOP	5.1		5.000		102	70	130			

Sample ID	1511987-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	C-1	Batch ID:	22461	RunNo:	30412					
Prep Date:	11/23/2015	Analysis Date:	11/23/2015	SeqNo:	928534	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	9.6	48.12	15.17	82.6	31.2	162			
Surr: DNOP	4.8		4.812		99.3	70	130			

Sample ID	1511987-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	C-1	Batch ID:	22461	RunNo:	30412					
Prep Date:	11/23/2015	Analysis Date:	11/23/2015	SeqNo:	928535	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	9.7	48.64	15.17	83.5	31.2	162	1.55	31.7	
Surr: DNOP	4.7		4.864		97.6	70	130	0	0	

Sample ID	MB-22479	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	22479	RunNo:	30412					
Prep Date:	11/23/2015	Analysis Date:	11/23/2015	SeqNo:	928537	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.3		10.00		82.9	70	130			

Sample ID	LCS-22479	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	22479	RunNo:	30412					
Prep Date:	11/23/2015	Analysis Date:	11/23/2015	SeqNo:	928538	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.8	70	130			

## Qualifiers:

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1511987

24-Nov-15

Client: APEX TITAN

Project: H-46/Bruington #15G

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	A30417	RunNo:	30417					
Prep Date:		Analysis Date:	11/23/2015	SeqNo:	928599	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		85.7	75.4	113			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	A30417	RunNo:	30417					
Prep Date:		Analysis Date:	11/23/2015	SeqNo:	928600	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.8	79.6	122			
Surr: BFB	1000		1000		103	75.4	113			

Sample ID	1511987-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	C-1	Batch ID:	A30417	RunNo:	30417					
Prep Date:		Analysis Date:	11/23/2015	SeqNo:	928601	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.4	22.03	0	94.7	62.5	151			
Surr: BFB	930		881.1		105	75.4	113			

Sample ID	1511987-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	C-1	Batch ID:	A30417	RunNo:	30417					
Prep Date:		Analysis Date:	11/23/2015	SeqNo:	928602	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.4	22.03	0	92.4	62.5	151	2.39	22.1	
Surr: BFB	920		881.1		104	75.4	113	0	0	

Sample ID	MB-22448	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	22448	RunNo:	30417					
Prep Date:	11/20/2015	Analysis Date:	11/23/2015	SeqNo:	928603	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	830		1000		83.2	75.4	113			

Sample ID	LCS-22448	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	22448	RunNo:	30417					
Prep Date:	11/20/2015	Analysis Date:	11/23/2015	SeqNo:	928604	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.0	75.4	113			

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1511987

24-Nov-15

Client: APEX TITAN

Project: H-46/Bruington #15G

Sample ID	5ML RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID: B30417			RunNo: 30417					
Prep Date:		Analysis Date: 11/23/2015			SeqNo: 928618		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		106	80	120			

Sample ID	100NG BTEX LCS	SampType: LCS			TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID: B30417			RunNo: 30417					
Prep Date:		Analysis Date: 11/23/2015			SeqNo: 928619		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	104	80	120			
Toluene	0.95	0.050	1.000	0	95.0	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	95.0	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		128	80	120			S

Sample ID	1511987-002AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	C-2	Batch ID:	B30417	RunNo:	30417					
Prep Date:		Analysis Date:	11/23/2015	SeqNo:	928620	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.052	1.044	0.02870	93.7	69.6	136			
Toluene	1.1	0.052	1.044	0.1341	90.2	76.2	134			
Ethylbenzene	1.0	0.052	1.044	0.02234	93.7	75.8	137			
Xylenes, Total	3.2	0.10	3.131	0.3737	90.7	78.9	133			
Surr: 4-Bromofluorobenzene	1.2		1.044		119	80	120			

Sample ID	1511987-002AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	C-2	Batch ID:	B30417	RunNo:	30417					
Prep Date:		Analysis Date:	11/23/2015	SeqNo:	928621	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.052	1.044	0.02870	91.8	69.6	136	1.97	20	
Toluene	1.0	0.052	1.044	0.1341	87.0	76.2	134	3.15	20	
Ethylbenzene	0.96	0.052	1.044	0.02234	89.8	75.8	137	4.17	20	
Xylenes, Total	3.1	0.10	3.131	0.3737	86.0	78.9	133	4.67	20	
Surr: 4-Bromofluorobenzene	1.3		1.044		120	80	120	0	0	S

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1511987

24-Nov-15

Client: APEX TITAN

Project: H-46/Bruington #15G

Sample ID	MB-22448	SampType	MBLK	TestCode	EPA Method 8021B: Volatiles					
Client ID	PBS	Batch ID	22448	RunNo	30417					
Prep Date	11/20/2015	Analysis Date	11/23/2015	SeqNo	928622	Units	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	LCS-22448	SampType	LCS	TestCode	EPA Method 8021B: Volatiles					
Client ID	LCSS	Batch ID	22448	RunNo	30417					
Prep Date	11/20/2015	Analysis Date	11/23/2015	SeqNo	928623	Units	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.3		1.000		128	80	120			S

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL 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: APEX AZTEC

Work Order Number: 1511987

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

11/21/15 8:30:00 AM

Completed By: Lindsay Mangin

11/21/2015 8:37:59 AM

Reviewed By:

RA 11-23-15

### Chain of Custody

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

### Log In

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

### Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:


17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			



## CHAIN OF CUSTODY RECORD

 <b>APEX</b> Office Location <u>Aztec, NM</u>		Laboratory: <u>Hall Environmental</u> Address: <u>Albuquerque, NM</u> Contact: <u>A. Fruman</u> Phone: _____ Project Manager: <u>K. Summers</u> PO/SO #: <u>7250415026</u>		ANALYSIS REQUESTED  <div style="transform: rotate(-45deg); transform-origin: center;">             8021 BTEX              8015 TPH GED/DEO           </div>		Lab use only Due Date: _____  Temp. of coolers when received (C°): <u>1, 2</u> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:20%;">1</td> <td style="width:20%;">2</td> <td style="width:20%;">3</td> <td style="width:20%;">4</td> <td style="width:20%;">5</td> </tr> </table> Page <u>1</u> of <u>1</u>		1	2	3	4	5		
		1	2			3	4	5						
Sampler's Name: <u>Renee Deechilly / chad D. April</u> Sampler's Signature: <u>Renee Deechilly</u> <u>Chad D. April</u>														
Proj. No.: <u>7250415026</u> Project Name: <u>H-46 / Brington #156</u> No/Type of Containers: _____														
Matrix	Date	Time	C o m p	G r a b	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)	
S	11/20/15	1200			C-1								X X	1511987-001
		1210			C-2									-002
		1220			C-3									-003
		1230			C-4									-004
		1240			C-5									-005
		1250			C-6									-006
		1300			C-7									-007
		1310			C-8									-008
NPS														
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>Same day</u>														
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:	NOTES:  Bill to Tom Long ARE: RB 21200 <u>Rush</u>						
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:							
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:							
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:							

Matrix Container    WW - Wastewater    W - Water    S - Soil    SD - Solid    L - Liquid    A - Air Bag    C - Charcoal tube    SL - sludge    O - Oil  
 VOA - 40 ml vial    A/G - Amber / Or Glass 1 Liter    250 ml - Glass wide mouth    P/O - Plastic or other



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

FEB 01 2016

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

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long	
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286	
Facility Name: Tafoya #1R	Facility Type: Natural Gas Gathering Pipeline	
Surface Owner: BLM	Mineral Owner: BLM	API No.

LOCATION OF RELEASE

Unit Letter K	Section 35	Township 32N	Range 13W	Feet from the 1465	North/South Line	Feet from the 2538	East/West Line	County San Juan
------------------	---------------	-----------------	--------------	-----------------------	---------------------	-----------------------	-------------------	--------------------

Latitude 36.93999 Longitude -108.173155

NATURE OF RELEASE

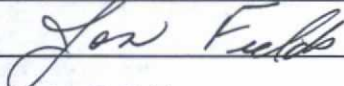
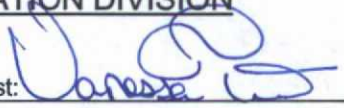
Type of Release: Natural Gas and Condensate	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: 1/10/2016 @ 5:45 a.m.	Date and Hour of Discovery: 1/10/2016 @ 11:45 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Time	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On January 10, 2016, Enterprise technicians discovered a gas leak on the Tafoya #1R pipeline. A small amount of fluids were observed on the ground surface. The pipeline was isolated, blown down, locked out and tagged out. On January 25, 2016, Enterprise made temporary repairs to the pipeline.

Describe Area Affected and Cleanup Action: On January 25, 2016, Enterprise made temporary repairs to the pipeline. Due to the inclement weather conditions, permanent repairs and remediation could not be complete. Enterprise will return in the spring of 2016 to complete the repairs and remediation. A third party corrective action report will be included with the "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.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Environmental	Approval Date: 2/8/2016	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1-27-2016	Phone: (713)381-6684	

\* Attach Additional Sheets If Necessary

NUE 1603955604



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

JAN 14 2016

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

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final 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 2C-6	Facility Type: Natural Gas Gathering Pipeline
Surface Owner: BLM	Mineral Owner: BLM
API No.	

### LOCATION OF RELEASE

Unit Letter L	Section 12	Township 25N	Range 8W	Feet from the 2522	North/ <u>South</u> Line	Feet from the 935	East/ <u>West</u> Line	County San Juan
------------------	---------------	-----------------	-------------	-----------------------	-----------------------------	----------------------	---------------------------	--------------------

Latitude 36.41415 Longitude -107.63967

### NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release <u>4.62 MCF Gas</u>	Volume Recovered: None
Source of Release: Internal Corrosion	Date and Hour of Occurrence: <u>10/28/15 @ 10:15 a.m.</u>	Date and Hour of Discovery: <u>10/28/15 @ 11:40 a.m.</u>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy Notification to Cory Smith – NMOCD; Katherina Diemer - BLM	
By Whom? Thomas Long	Date and Time <u>11/13/2015 @ 8:01 a.m.</u>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On October 28, 2015, Enterprise technicians discovered a gas leak on the Lateral 2C-6 pipeline. No fluids were observed on the ground surface. The pipeline was isolated, blown down, locked out and tagged out for safety and environmental concerns. Repairs were completed on December 2, 2015.

Describe Area Affected and Cleanup Action Repairs were completed on December 2, 2015. A third party environmental contractor conducted an investigation during the repair activities. The investigation indicated that the natural gas release caused no subsurface impacts. Soil excavated during repair activities was 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.

Signature: <u>Jon Fields</u>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: <u>[Signature]</u>	
Title: Director, Environmental	Approval Date: <u>2/15/16</u>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>1-12-2016</u> Phone: (713)381-6684		

\* Attach Additional Sheets If Necessary

MS153428687

(45)

JAN 14 2016

## **Lateral 2C-6 Pipeline Release Report**

Unit Letter L, Section 12,  
Township 25 North, Range 8 West  
San Juan County, New Mexico

December 29, 2015

Prepared for:  
Enterprise Field Services, LLC  
614 Reilly Avenue  
Farmington, New Mexico 87401

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



# **Enterprise Field Services, LLC Lateral 2C-6 Pipeline Release Report**

Prepared for:

Enterprise Field Services, LLC  
614 Reilly Avenue  
Farmington, New Mexico 87401

Prepared by:

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



---

Heather M. Woods, P.G., Area Manager

Reviewed by:



---

Russell Knight, PG, Principal Hydrogeologist

December 29, 2015

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## Tables

Table 1	NMOCD Site Ranking Determination
Table 2	Soil Sample Results – VOCs, Benzene, Total BTEX, and TPH

## Figures

Figure 1	Topographic Map
Figure 2	Site Map

## Appendices

Appendix A	Photograph Log
Appendix B	Analytical Laboratory Reports



## 1.0 Introduction

The Enterprise Field Services, LLC (Enterprise) Lateral 2C-6 pipeline release site is located in Unit Letter L, Section 12, Township 25 North, Range 8 West, in San Juan County, New Mexico. The release resulted from two corrosion holes in the pipeline approximately 40 feet apart which were discovered on October 28, 2015.

On August 28, 2015, Enterprise initiated repair activities at the location. The release consisted of an unknown quantity of natural gas and pipeline liquids. Site work included replacement the broken valve and excavation of hydrocarbon impacted soils.

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

## 2.0 Release Summary

<b>Site Name</b>	Lateral 2C-6 Pipeline Release		
<b>Site Location Description</b>	Unit Letter L, Section 12, Township 25 North, Range 8 West (N36.41415, W107.63966)		
<b>Land Jurisdiction</b>	Bureau of Land Management (BLM)		
<b>Discovery Date</b>	October 28, 2015		
<b>Release Report Date</b>	November 12, 2015	<b>Reported by</b>	Thomas Long
<b>Agency Notification</b>	New Mexico Oil Conservation Division (NMOCD) and BLM		
<b>Release Source</b>	Two corrosion holes approximately 40 feet apart		
<b>Substance(s) Released</b>	Natural Gas and Pipeline Liquids	<b>Volume Released</b>	Undetermined
<b>NMOCD Site Rank</b>	10		
<b>Distance to Nearest Surface Water</b>	Unnamed ephemeral wash approximately 810 feet southeast which drains to Palluche Canyon		
<b>Estimated Depth to Groundwater</b>	Greater than 100 feet below grade surface (bgs)	<b>Distance to Nearest Water Well or Spring</b>	Greater than 1,000 feet
<b>Contractor</b>	Halo Services, Inc. (Halo)	<b>Repair Excavation Dimensions</b>	122 feet by 10 feet by 4 feet in depth

## 3.0 NMOCD Site Ranking

In accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 10 (Table 1).

Depth to groundwater at the site is estimated to be greater than 100 feet bgs based on the elevation differential between the release location and the wash in Palluche Canyon.

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 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

An ephemeral washes traverses the area approximately 810 feet southeast of the release location and drains to the wash in Palluche Canyon.

Based on the ranking score of 10, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

#### **4.0 Field Activities**

On November 12, 2015, Enterprise initiated repair activities at the location. Halo provided heavy equipment operation and repair support. Rule Engineering, LLC (Rule) personnel provided excavation guidance and collected confirmation samples from the resultant excavation and stockpiled soils. The repair included the replacement of approximately 120 feet of pipeline. The final repair excavation measured approximately 122 feet by 10 feet by 4 feet in depth. The repair excavation was backfilled with the stockpiled soils.

A depiction of the excavation with sample locations and summary of analytical results is included as Figure 2. A photograph log is included in Appendix A.

#### **5.0 Soil Sampling**

Rule collected confirmation excavation soil samples (SC-1 through SC-11) from the sidewalls and base of the excavation and stockpile composite samples (SP-1 through SP-5). Each confirmation soil sample is a representative composite comprised of five equivalent aliquots of soil collected from the sampled area.

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 (GRO/DRO) per USEPA 8015D. Laboratory analytical results are summarized in Table 2, and the analytical laboratory reports are included in Appendix B.

A portion of each sample was field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photoionization 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.

## 6.0 Laboratory Analytical Results

Laboratory analytical results for excavation confirmation samples SC-1 through SC-11 reported benzene and total BTEX concentrations below the laboratory reporting limits, which are below the applicable NMOCD action levels. Laboratory analytical results for confirmations samples SC-1 through SC-11 reported TPH (GRO/DRO) concentrations ranging from below laboratory reporting limits to 440 mg/kg, which are below the NMOCD action level of 1,000 mg/kg for a site rank of 10.

Laboratory analytical results for stockpile composite samples SP-1 through SP-5 reported benzene below the laboratory reporting limits, which is below the applicable NMOCD action level. Total BTEX concentrations for stockpile composite samples SP-1 through SP-5 were reported below the laboratory reporting limits, which is below the applicable NMOCD action level. Laboratory analytical results for stockpile composite samples SP-1 through SP-5 reported TPH (GRO/DRO) concentrations ranging from below laboratory reporting limits to 173 mg/kg, which are below the NMOCD action level of 1,000 mg/kg for a site rank of 10. Laboratory analytical results are summarized in Table 2 and presented on Figure 3.

## 7.0 Conclusions

The Enterprise Lateral 2C-6 pipeline release site is located in Unit Letter L, Section 12, Township 25 North, Range 8 West, in San Juan County, New Mexico. The release resulted from two corrosion holes in the pipeline discovered on July 29, 2015. The repair included the replacement of approximately 120 feet of pipeline. Confirmation samples were collected from the sidewalls and base of the resultant repair excavation which measured approximately 122 feet by 10 feet by 4 feet in depth. Confirmation samples were also collected from the stockpiled soil. Laboratory analytical results for the soil confirmation samples (SC-1 through SC-11 and SP-1 through SP-5) reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable NMOGA action levels. The repair excavation was backfilled with the stockpiled soils.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended.

## 8.0 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 report and 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**  
**Enterprise Field Services, LLC**  
**Lateral 2C-6 Pipeline Release**  
**San Juan County, New Mexico**

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Elevation differential information derived from the topographic map of the area, hydrogeological report for nearby well Quitzau #3 located approximately 2,000 feet to southwest.	NMOCD Online database, Thompson Mesa Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Thompson Mesa Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	An unnamed, ephemeral wash located approximately 810 feet southeast of release location which drains to the wash in Palluche Canyon.	Thompson Mesa Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		10		

**Table 2. Soil Sampling Results**  
**Enterprise Field Services, LLC**  
**Lateral 2C-6 Pipeline Release**  
**San Juan County, New Mexico**

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
NMOCD Action Level*			100	10	NE	NE	NE	50	1,000**	
Excavation Confirmation Samples										
SC-1	12/2/2015	1 to 4	0.8	<0.048	<0.048	<0.048	<0.097	ND	<4.8	21
SC-2	12/2/2015	1 to 4	1.8	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.9
SC-3	12/2/2015	4	3.3	<0.048	<0.048	<0.048	<0.095	ND	<4.8	<9.3
SC-4	12/2/2015	1 to 4	0.8	<0.050	<0.050	<0.050	<0.10	ND	<5.0	<9.7
SC-5	12/2/2015	1 to 4	4.6	<0.048	<0.048	<0.048	<0.096	ND	<4.8	15
SC-6	12/2/2015	4	3.6	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<9.6
SC-7	12/2/2015	1 to 4	2.1	<0.049	<0.049	<0.049	<0.097	ND	<4.9	<9.9
SC-8	12/2/2015	1 to 4	9.6	<0.049	<0.049	<0.049	<0.098	ND	<4.9	21
SC-9	12/2/2015	4	16.3	<0.048	<0.048	<0.048	<0.096	ND	<4.8	35
SC-10	12/2/2015	1 to 4	32.2	<0.048	<0.048	<0.048	<0.096	ND	<4.8	140
SC-11	12/2/2015	1 to 4	78.5	<0.048	<0.048	<0.048	<0.096	ND	<4.8	330
Stockpile Samples										
SP-1	12/2/2015	Stockpile	0.6	<0.050	<0.050	<0.050	<0.099	ND	<5.0	<9.6
SP-2	12/2/2015	Stockpile	848	<0.12	3.2	1.1	11	15	63	110
SP-3	12/2/2015	Stockpile	430	<0.048	0.091	0.065	0.64	0.80	8.6	26
SP-4	12/2/2015	Stockpile	4.6	<0.048	0.048	<0.048	<0.097	ND	<4.8	<9.7
SP-5	12/2/2015	Stockpile	46.8	<0.049	<0.049	<0.049	<0.098	ND	<4.9	82

Notes: VOCs - volatile organic compounds  
PID - photoionization detector  
ft bgs - feet below grade surface  
ppm - parts per million  
mg/kg - milligrams per kilogram  
NE - not-established

ND - not detected above laboratory reporting limits  
BTEX - benzene, toluene, ethylbenzene, and xylenes  
TPH - total petroleum hydrocarbons  
GRO - gasoline range organics  
DRO - diesel range organics  
NMOCD - New Mexico Oil Conservation Division

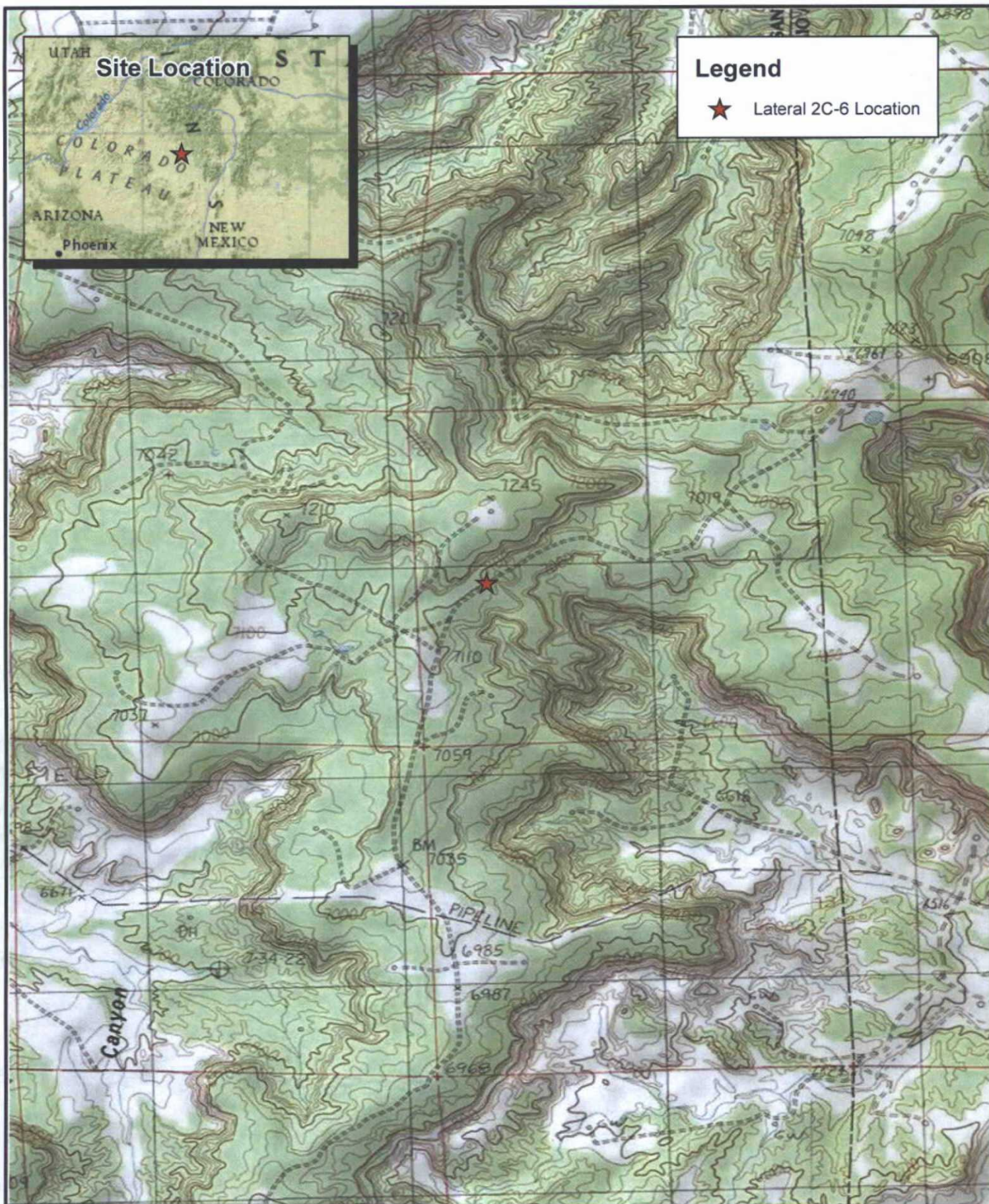
\*Based on the NMOCD Guidelines for Remediation of Leaks, Spills and Releases (August 1993)

\*\*Based on a site ranking of 10



## Figures





**Rule Engineering, LLC**  
Solutions to Regulations for Industry

0 0.25 0.5 0.75 Miles

Thompson Mesa Quadrangle Scale 1:24000



UL L, Sec 12 T25N R08W  
N36.41415, W107.63966  
San Juan County, NM




**Figure 1**  
**Topographic Map**  
Lateral 2C-6  
Pipeline Release

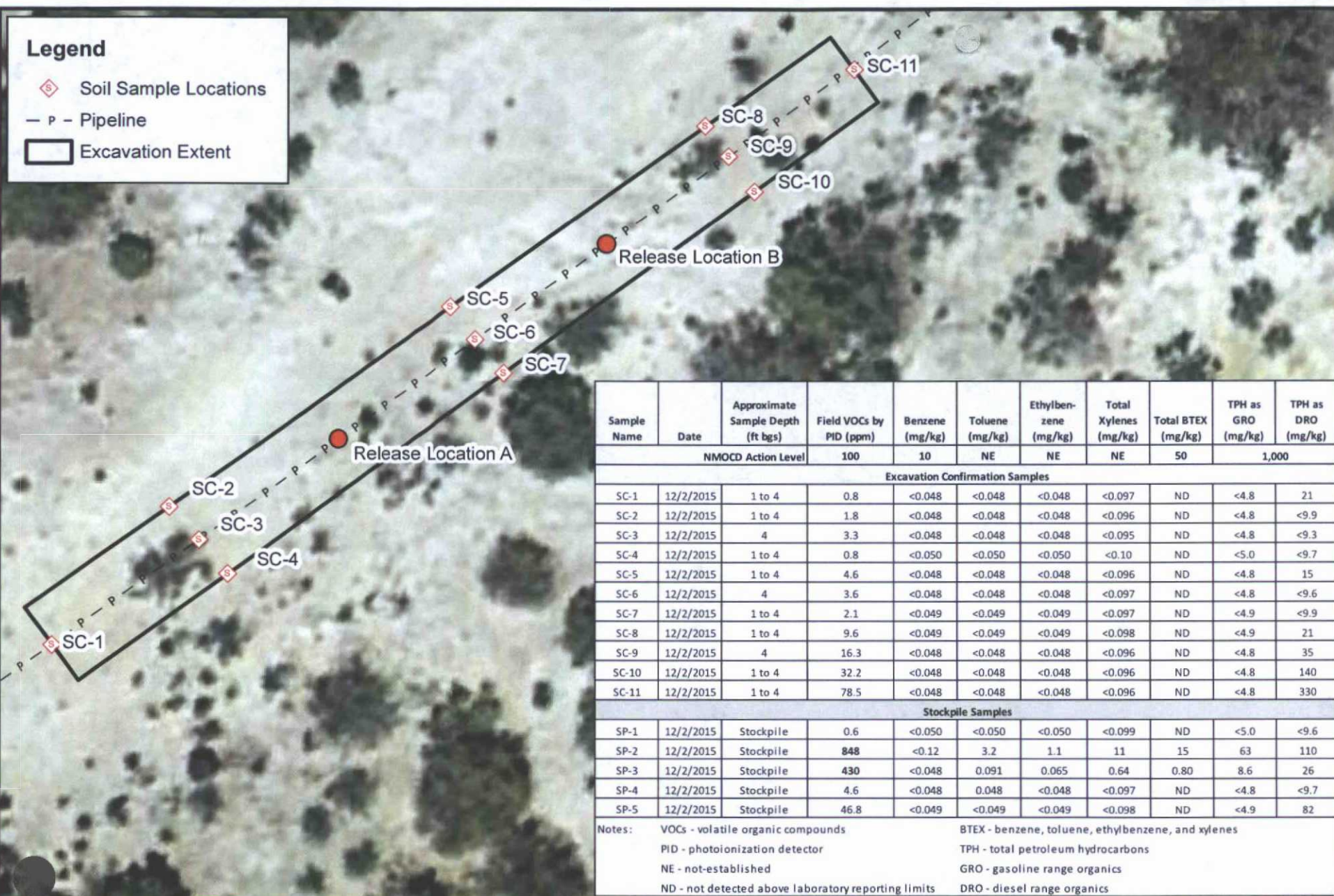
Date: 12/29/2015

Source: Copyright: © 2013 National Geographic Society, i-cubed  
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.



## Legend

-  Soil Sample Locations
-  Pipeline
-  Excavation Extent



Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
NMOCD Action Level			100	10	NE	NE	NE	50	1,000	
Excavation Confirmation Samples										
SC-1	12/2/2015	1 to 4	0.8	<0.048	<0.048	<0.048	<0.097	ND	<4.8	21
SC-2	12/2/2015	1 to 4	1.8	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.9
SC-3	12/2/2015	4	3.3	<0.048	<0.048	<0.048	<0.095	ND	<4.8	<9.3
SC-4	12/2/2015	1 to 4	0.8	<0.050	<0.050	<0.050	<0.10	ND	<5.0	<9.7
SC-5	12/2/2015	1 to 4	4.6	<0.048	<0.048	<0.048	<0.096	ND	<4.8	15
SC-6	12/2/2015	4	3.6	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<9.6
SC-7	12/2/2015	1 to 4	2.1	<0.049	<0.049	<0.049	<0.097	ND	<4.9	<9.9
SC-8	12/2/2015	1 to 4	9.6	<0.049	<0.049	<0.049	<0.098	ND	<4.9	21
SC-9	12/2/2015	4	16.3	<0.048	<0.048	<0.048	<0.096	ND	<4.8	35
SC-10	12/2/2015	1 to 4	32.2	<0.048	<0.048	<0.048	<0.096	ND	<4.8	140
SC-11	12/2/2015	1 to 4	78.5	<0.048	<0.048	<0.048	<0.096	ND	<4.8	330
Stockpile Samples										
SP-1	12/2/2015	Stockpile	0.6	<0.050	<0.050	<0.050	<0.099	ND	<5.0	<9.6
SP-2	12/2/2015	Stockpile	848	<0.12	3.2	1.1	11	15	63	110
SP-3	12/2/2015	Stockpile	430	<0.048	0.091	0.065	0.64	0.80	8.6	26
SP-4	12/2/2015	Stockpile	4.6	<0.048	0.048	<0.048	<0.097	ND	<4.8	<9.7
SP-5	12/2/2015	Stockpile	46.8	<0.049	<0.049	<0.049	<0.098	ND	<4.9	82
Notes:	VOCs - volatile organic compounds					BTEX - benzene, toluene, ethylbenzene, and xylenes				
	PID - photoionization detector					TPH - total petroleum hydrocarbons				
	NE - not-established					GRO - gasoline range organics				
	ND - not detected above laboratory reporting limits					DRO - diesel range organics				

**Rule Engineering, LLC**  
Solutions to Regulations for Industry

0 10 20 30 40 Feet  
Scale: 1:160

**Enterprise Products**


UL L, Sec 12 T25N R08W  
N36.41415, W107.63966  
San Juan County, NM

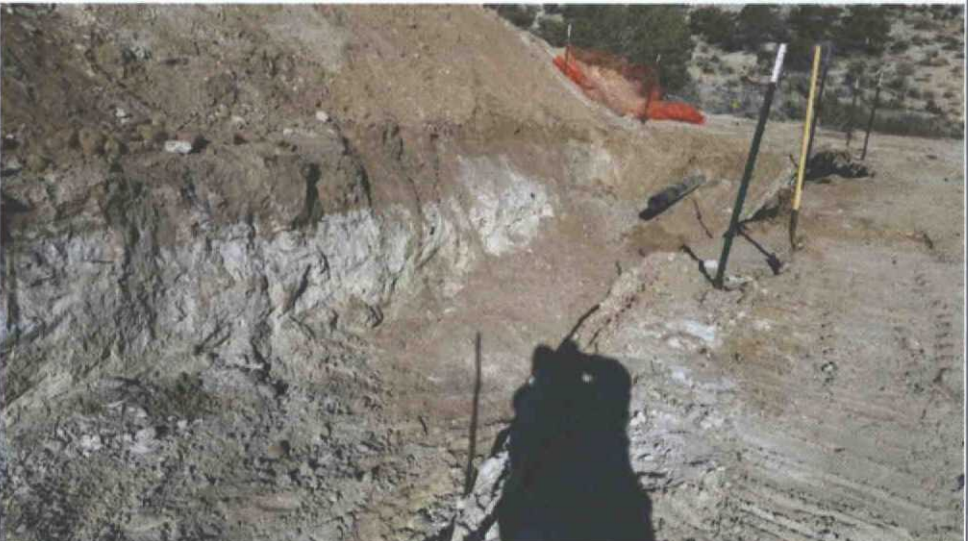
**Figure 2**  
**Site Map**  
**Lateral 2C-6**  
**Pipeline Release**


## Appendix A

### Photograph Log



Photograph #1	
Client: Enterprise	
Site Name:  Lateral 2C-6 Pipeline Release	
Date Photo Taken: December 1, 2015	
Release Location: N36.41415, W107.63966  L-12-25N-8W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing west, general view of final excavation after damaged pipeline removal.

Photograph #2	
Client: Enterprise	
Site Name:  Lateral 2C-6 Pipeline Release	
Date Photo Taken: December 1, 2015	
Release Location: N36.41415, W107.63966  L-12-25N-8W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing northeast, general view of southern portion of final excavation after damaged pipeline removal.

Photograph #3	
Client: Enterprise	
Site Name:  Lateral 2C-6 Pipeline Release	
Date Photo Taken: December 2, 2015	
Release Location: N36.41415, W107.63966  L-12-25N-8W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing northeast, general view of final excavation showing new pipeline section.



## Appendix B

### 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](http://www.hallenvironmental.com)

December 09, 2015

Heather Woods  
Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: Enterprise Lateral 2C-6

OrderNo.: 1512137

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 11 sample(s) on 12/3/2015 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



**Analytical Report**

Lab Order 1512137

Date Reported: 12/9/2015

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-1**Project:** Enterprise Lateral 2C-6**Collection Date:** 12/2/2015 1:30:00 PM**Lab ID:** 1512137-001**Matrix:** SOIL**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	21	9.7		mg/Kg	1	12/7/2015 2:02:29 PM	22612
Surr: DNOP	90.3	70-130		%REC	1	12/7/2015 2:02:29 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 5:35:39 PM	22611
Surr: BFB	92.4	66.2-112		%REC	1	12/4/2015 5:35:39 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.048		mg/Kg	1	12/4/2015 5:35:39 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 5:35:39 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 5:35:39 PM	22611
Xylenes, Total	ND	0.097		mg/Kg	1	12/4/2015 5:35:39 PM	22611
Surr: 4-Bromofluorobenzene	121	80-120	S	%REC	1	12/4/2015 5:35:39 PM	22611

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

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC  
**Project:** Enterprise Lateral 2C-6  
**Lab ID:** 1512137-002

**Matrix:** SOIL

**Client Sample ID:** SC-2  
**Collection Date:** 12/2/2015 1:35:00 PM  
**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/4/2015 10:59:09 AM	22612
Surr: DNOP	107	70-130		%REC	1	12/4/2015 10:59:09 AM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 6:00:44 PM	22611
Surr: BFB	96.4	66.2-112		%REC	1	12/4/2015 6:00:44 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/4/2015 6:00:44 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 6:00:44 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 6:00:44 PM	22611
Xylenes, Total	ND	0.096		mg/Kg	1	12/4/2015 6:00:44 PM	22611
Surr: 4-Bromofluorobenzene	124	80-120	S	%REC	1	12/4/2015 6:00:44 PM	22611

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

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



**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-3**Project:** Enterprise Lateral 2C-6**Collection Date:** 12/2/2015 1:40:00 PM**Lab ID:** 1512137-003**Matrix:** SOIL**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/4/2015 11:20:27 AM	22612
Surr: DNOP	84.9	70-130		%REC	1	12/4/2015 11:20:27 AM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 8:05:48 PM	22611
Surr: BFB	89.5	66.2-112		%REC	1	12/4/2015 8:05:48 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/4/2015 8:05:48 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 8:05:48 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 8:05:48 PM	22611
Xylenes, Total	ND	0.095		mg/Kg	1	12/4/2015 8:05:48 PM	22611
Surr: 4-Bromofluorobenzene	115	80-120		%REC	1	12/4/2015 8:05:48 PM	22611

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

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

# Analytical Report

Lab Order **1512137**

Date Reported: **12/9/2015**

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

**Project:** Enterprise Lateral 2C-6

**Lab ID:** 1512137-004

**Matrix:** SOIL

**Client Sample ID:** SC-4

**Collection Date:** 12/2/2015 1:45:00 PM

**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/4/2015 11:41:58 AM	22612
Surr: DNOP	102	70-130		%REC	1	12/4/2015 11:41:58 AM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/4/2015 8:30:39 PM	22611
Surr: BFB	88.6	66.2-112		%REC	1	12/4/2015 8:30:39 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.050		mg/Kg	1	12/4/2015 8:30:39 PM	22611
Toluene	ND	0.050		mg/Kg	1	12/4/2015 8:30:39 PM	22611
Ethylbenzene	ND	0.050		mg/Kg	1	12/4/2015 8:30:39 PM	22611
Xylenes, Total	ND	0.10		mg/Kg	1	12/4/2015 8:30:39 PM	22611
Surr: 4-Bromofluorobenzene	116	80-120		%REC	1	12/4/2015 8:30:39 PM	22611

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

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



**Analytical Report**

Lab Order 1512137

Date Reported: 12/9/2015

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-5**Project:** Enterprise Lateral 2C-6**Collection Date:** 12/2/2015 1:50:00 PM**Lab ID:** 1512137-005**Matrix:** SOIL**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	15	10		mg/Kg	1	12/4/2015 12:03:16 PM	22612
Surr: DNOP	104	70-130		%REC	1	12/4/2015 12:03:16 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 8:55:28 PM	22611
Surr: BFB	84.8	66.2-112		%REC	1	12/4/2015 8:55:28 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.048		mg/Kg	1	12/4/2015 8:55:28 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 8:55:28 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 8:55:28 PM	22611
Xylenes, Total	ND	0.096		mg/Kg	1	12/4/2015 8:55:28 PM	22611
Surr: 4-Bromofluorobenzene	111	80-120		%REC	1	12/4/2015 8:55:28 PM	22611

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1512137

Date Reported: 12/9/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-6

Project: Enterprise Lateral 2C-6

Collection Date: 12/2/2015 1:55:00 PM

Lab ID: 1512137-006

Matrix: SOIL

Received Date: 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/4/2015 12:24:40 PM	22612
Surr: DNOP	83.2	70-130		%REC	1	12/4/2015 12:24:40 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 9:20:09 PM	22611
Surr: BFB	86.1	66.2-112		%REC	1	12/4/2015 9:20:09 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/4/2015 9:20:09 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 9:20:09 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 9:20:09 PM	22611
Xylenes, Total	ND	0.097		mg/Kg	1	12/4/2015 9:20:09 PM	22611
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	12/4/2015 9:20:09 PM	22611

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

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



**Analytical Report**Lab Order **1512137**Date Reported: **12/9/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-7**Project:** Enterprise Lateral 2C-6**Collection Date:** 12/2/2015 2:00:00 PM**Lab ID:** 1512137-007**Matrix:** SOIL**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/4/2015 12:46:00 PM	22612
Surr: DNOP	104	70-130		%REC	1	12/4/2015 12:46:00 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/4/2015 9:44:46 PM	22611
Surr: BFB	85.0	66.2-112		%REC	1	12/4/2015 9:44:46 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.049		mg/Kg	1	12/4/2015 9:44:46 PM	22611
Toluene	ND	0.049		mg/Kg	1	12/4/2015 9:44:46 PM	22611
Ethylbenzene	ND	0.049		mg/Kg	1	12/4/2015 9:44:46 PM	22611
Xylenes, Total	ND	0.097		mg/Kg	1	12/4/2015 9:44:46 PM	22611
Surr: 4-Bromofluorobenzene	109	80-120		%REC	1	12/4/2015 9:44:46 PM	22611

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

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC  
**Project:** Enterprise Lateral 2C-6  
**Lab ID:** 1512137-008

**Matrix:** SOIL

**Client Sample ID:** SC-8  
**Collection Date:** 12/2/2015 2:05:00 PM  
**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	21	9.5		mg/Kg	1	12/4/2015 1:07:31 PM	22612
Surr: DNOP	90.3	70-130		%REC	1	12/4/2015 1:07:31 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/4/2015 10:09:29 PM	22611
Surr: BFB	88.0	66.2-112		%REC	1	12/4/2015 10:09:29 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	12/4/2015 10:09:29 PM	22611
Toluene	ND	0.049		mg/Kg	1	12/4/2015 10:09:29 PM	22611
Ethylbenzene	ND	0.049		mg/Kg	1	12/4/2015 10:09:29 PM	22611
Xylenes, Total	ND	0.098		mg/Kg	1	12/4/2015 10:09:29 PM	22611
Surr: 4-Bromofluorobenzene	114	80-120		%REC	1	12/4/2015 10:09:29 PM	22611

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

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



**Analytical Report**Lab Order **1512137**Date Reported: **12/9/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Project:** Enterprise Lateral 2C-6**Lab ID:** 1512137-009**Client Sample ID:** SC-9**Collection Date:** 12/2/2015 2:10:00 PM**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	35	9.7		mg/Kg	1	12/4/2015 1:28:46 PM	22612
Surr: DNOP	87.8	70-130		%REC	1	12/4/2015 1:28:46 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 10:34:10 PM	22611
Surr: BFB	101	66.2-112		%REC	1	12/4/2015 10:34:10 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.048		mg/Kg	1	12/4/2015 10:34:10 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 10:34:10 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 10:34:10 PM	22611
Xylenes, Total	ND	0.096		mg/Kg	1	12/4/2015 10:34:10 PM	22611
Surr: 4-Bromofluorobenzene	130	80-120	S	%REC	1	12/4/2015 10:34:10 PM	22611

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

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

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512137

Date Reported: 12/9/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-10

Project: Enterprise Lateral 2C-6

Collection Date: 12/2/2015 2:15:00 PM

Lab ID: 1512137-010

Matrix: SOIL

Received Date: 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	140	10		mg/Kg	1	12/4/2015 1:50:10 PM	22612
Surr: DNOP	97.7	70-130		%REC	1	12/4/2015 1:50:10 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 10:58:44 PM	22611
Surr: BFB	116	66.2-112	S	%REC	1	12/4/2015 10:58:44 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/4/2015 10:58:44 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 10:58:44 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 10:58:44 PM	22611
Xylenes, Total	ND	0.096		mg/Kg	1	12/4/2015 10:58:44 PM	22611
Surr: 4-Bromofluorobenzene	131	80-120	S	%REC	1	12/4/2015 10:58:44 PM	22611

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

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



# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC  
 Project: Enterprise Lateral 2C-6  
 Lab ID: 1512137-011

Matrix: SOIL

Client Sample ID: SC-11  
 Collection Date: 12/2/2015 2:20:00 PM  
 Received Date: 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	330	9.7		mg/Kg	1	12/4/2015 2:11:39 PM	22612
Surr: DNOP	76.3	70-130		%REC	1	12/4/2015 2:11:39 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2015 11:23:20 PM	22611
Surr: BFB	108	66.2-112		%REC	1	12/4/2015 11:23:20 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/4/2015 11:23:20 PM	22611
Toluene	ND	0.048		mg/Kg	1	12/4/2015 11:23:20 PM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2015 11:23:20 PM	22611
Xylenes, Total	ND	0.096		mg/Kg	1	12/4/2015 11:23:20 PM	22611
Surr: 4-Bromofluorobenzene	132	80-120	S	%REC	1	12/4/2015 11:23:20 PM	22611

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512137

09-Dec-15

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-6

Sample ID	MB-22612	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	22612	RunNo:	30625					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935427	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	8.2		10.00		82.0	70	130			

Sample ID	LCS-22612	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	22612	RunNo:	30625					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935428	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.8	57.4	139			
Surr: DNOP	4.4		5.000		88.4	70	130			

Sample ID	1512137-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	22612	RunNo:	30645					
Prep Date:	12/3/2015	Analysis Date:	12/7/2015	SeqNo:	936570	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	410	9.5	47.62	20.75	813	31.2	162			S
Surr: DNOP	4.4		4.762		92.6	70	130			

Sample ID	1512137-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	22612	RunNo:	30645					
Prep Date:	12/3/2015	Analysis Date:	12/7/2015	SeqNo:	936571	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	9.5	47.35	20.75	35.7	31.2	162	166	31.7	R
Surr: DNOP	4.3		4.735		90.8	70	130	0	0	

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512137

09-Dec-15

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-6

Sample ID	MB-22611	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	22611	RunNo:	30626					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935788	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.5	66.2	112			

Sample ID	LCS-22611	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	22611	RunNo:	30626					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935789	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.8	79.6	122			
Surr: BFB	1100		1000		111	66.2	112			

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512137

09-Dec-15

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-6

Sample ID	MB-22611	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	22611	RunNo:	30626					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935819	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	1.2		1.000		117	80	120			

Sample ID	LCS-22611	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	22611	RunNo:	30626					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935820	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	100	80	120			
Toluene	0.98	0.050	1.000	0	97.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		132	80	120			S

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

## Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1512137

RcptNo: 1

Received by/date: \_\_\_\_\_

Logged By: Anne Thorne 12/3/2015 8:05:00 AM

Completed By: Anne Thorne 12/3/2015

Reviewed By:  12/03/15





### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			



Client: <u>Rule Engineering LLC</u>	<input type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush <u>3 Day (12/7/15)</u>
Mailing Address: <u>501 Airport Drive, Suite 205</u>	Project Name: <u>Enterprise Lateral 2C-6</u>
<u>Farmington, NM 87401</u>	Project #: _____
Phone #: <u>(505) 716-2787</u>	Project Manager: _____
Email or Fax #: <u>hwoods@ruleengineering.com</u>	<u>Heather Woods</u>
A/QC Package: _____	Sampler: <u>Heather Woods</u>
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Creditation: <input checked="" type="checkbox"/> NELAP <input type="checkbox"/> Other _____	Sample Temperature: <u>1.3</u>
EDD (Type) _____	

☐ Standard ☒ Rush 3 Day (12/7/15)

Enterprise Lateral 2C-6

Project Manager:

Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
						15/2/137
12/15	1330	Soil	SC-1	(1) 4oz Glass	Gold	-001
	1335		SC-2			-002
	1340		SC-3			-003
	1345		SC-4			-004
	1350		SC-5			-005
	1355		SC-6			-006
	1400 1405		SC-7			-007
	1405		SC-8			-008
	1410		SC-9			-009
	1415		SC-10			-010
	1420		SC-11			-011
NFS HW						

Date:	Time:	Relinquished by:	Received by:	Date	Time
2/15	1754	Heather M. Woods	Christ Waelle	12/2/15	175
Date:	Time:	Relinquished by:	Received by:	Date	Time
12/15	1928	Christ Waelle	Joe. A. [Signature]	12/03/15	0805



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

[illegible]

Remarks: Bill to Enterprise  
Non-AFE: N22864  
Attn: Tom Long / Johnny Sandoval





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

December 07, 2015

Heather Woods

Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: Enterprise Lateral 2C-6

OrderNo.: 1512144

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/3/2015 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SP-1**Project:** Enterprise Lateral 2C-6**Collection Date:** 12/2/2015 2:30:00 PM**Lab ID:** 1512144-001**Matrix:** SOIL**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/4/2015 2:33:00 PM	22612
Surr: DNOP	80.2	70-130		%REC	1	12/4/2015 2:33:00 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/4/2015 11:48:00 PM	22611
Surr: BFB	89.9	66.2-112		%REC	1	12/4/2015 11:48:00 PM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.050		mg/Kg	1	12/4/2015 11:48:00 PM	22611
Toluene	ND	0.050		mg/Kg	1	12/4/2015 11:48:00 PM	22611
Ethylbenzene	ND	0.050		mg/Kg	1	12/4/2015 11:48:00 PM	22611
Xylenes, Total	ND	0.099		mg/Kg	1	12/4/2015 11:48:00 PM	22611
Surr: 4-Bromofluorobenzene	115	80-120		%REC	1	12/4/2015 11:48:00 PM	22611

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

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

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512144

Date Reported: 12/7/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SP-2

Project: Enterprise Lateral 2C-6

Collection Date: 12/2/2015 2:40:00 PM

Lab ID: 1512144-002

Matrix: SOIL

Received Date: 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	110	10		mg/Kg	1	12/4/2015 2:54:18 PM	22612
Surr: DNOP	87.8	70-130		%REC	1	12/4/2015 2:54:18 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	63	24		mg/Kg	5	12/5/2015 1:25:56 AM	22611
Surr: BFB	143	66.2-112	S	%REC	5	12/5/2015 1:25:56 AM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.12		mg/Kg	5	12/5/2015 1:25:56 AM	22611
Toluene	3.2	0.24		mg/Kg	5	12/5/2015 1:25:56 AM	22611
Ethylbenzene	1.1	0.24		mg/Kg	5	12/5/2015 1:25:56 AM	22611
Xylenes, Total	11	0.48		mg/Kg	5	12/5/2015 1:25:56 AM	22611
Surr: 4-Bromofluorobenzene	158	80-120	S	%REC	5	12/5/2015 1:25:56 AM	22611

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

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



**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SP-3**Project:** Enterprise Lateral 2C-6**Collection Date:** 12/2/2015 2:50:00 PM**Lab ID:** 1512144-003**Matrix:** SOIL**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	26	10		mg/Kg	1	12/4/2015 3:15:57 PM	22612
Surr: DNOP	90.2	70-130		%REC	1	12/4/2015 3:15:57 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	8.6	4.8		mg/Kg	1	12/5/2015 1:50:33 AM	22611
Surr: BFB	137	66.2-112	S	%REC	1	12/5/2015 1:50:33 AM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/5/2015 1:50:33 AM	22611
Toluene	0.091	0.048		mg/Kg	1	12/5/2015 1:50:33 AM	22611
Ethylbenzene	0.065	0.048		mg/Kg	1	12/5/2015 1:50:33 AM	22611
Xylenes, Total	0.64	0.097		mg/Kg	1	12/5/2015 1:50:33 AM	22611
Surr: 4-Bromofluorobenzene	145	80-120	S	%REC	1	12/5/2015 1:50:33 AM	22611

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1512144**

Date Reported: **12/7/2015**

**CLIENT:** Rule Engineering LLC

**Client Sample ID:** SP-4

**Project:** Enterprise Lateral 2C-6

**Collection Date:** 12/2/2015 3:00:00 PM

**Lab ID:** 1512144-004

**Matrix:** SOIL

**Received Date:** 12/3/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/4/2015 3:37:18 PM	22612
Surr: DNOP	90.4	70-130		%REC	1	12/4/2015 3:37:18 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/5/2015 2:15:06 AM	22611
Surr: BFB	88.4	66.2-112		%REC	1	12/5/2015 2:15:06 AM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.048		mg/Kg	1	12/5/2015 2:15:06 AM	22611
Toluene	ND	0.048		mg/Kg	1	12/5/2015 2:15:06 AM	22611
Ethylbenzene	ND	0.048		mg/Kg	1	12/5/2015 2:15:06 AM	22611
Xylenes, Total	ND	0.097		mg/Kg	1	12/5/2015 2:15:06 AM	22611
Surr: 4-Bromofluorobenzene	113	80-120		%REC	1	12/5/2015 2:15:06 AM	22611

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

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

**Analytical Report**

Lab Order 1512144

Date Reported: 12/7/2015

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Project:** Enterprise Lateral 2C-6**Lab ID:** 1512144-005**Client Sample ID:** SP-5**Collection Date:** 12/2/2015 3:10:00 PM**Received Date:** 12/3/2015 8:05:00 AM**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	82	9.6		mg/Kg	1	12/4/2015 3:58:49 PM	22612
Surr: DNOP	84.8	70-130		%REC	1	12/4/2015 3:58:49 PM	22612
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/5/2015 2:39:44 AM	22611
Surr: BFB	93.2	66.2-112		%REC	1	12/5/2015 2:39:44 AM	22611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	12/5/2015 2:39:44 AM	22611
Toluene	ND	0.049		mg/Kg	1	12/5/2015 2:39:44 AM	22611
Ethylbenzene	ND	0.049		mg/Kg	1	12/5/2015 2:39:44 AM	22611
Xylenes, Total	ND	0.098		mg/Kg	1	12/5/2015 2:39:44 AM	22611
Surr: 4-Bromofluorobenzene	120	80-120		%REC	1	12/5/2015 2:39:44 AM	22611

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

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1512144

07-Dec-15

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-6

Sample ID	MB-22612	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	22612	RunNo:	30625					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935427	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	8.2		10.00		82.0	70	130			

Sample ID	LCS-22612	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	22612	RunNo:	30625					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935428	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.8	57.4	139			
Surr: DNOP	4.4		5.000		88.4	70	130			

### Qualifiers:

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512144

07-Dec-15

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-6

Sample ID	MB-22611	SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS	Batch ID:	22611		RunNo:	30626				
Prep Date:	12/3/2015	Analysis Date:	12/4/2015		SeqNo:	935788	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.5	66.2	112			

Sample ID	LCS-22611	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	22611	RunNo:	30626					
Prep Date:	12/3/2015	Analysis Date:	12/4/2015	SeqNo:	935789	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.8	79.6	122			
Surr: BFB	1100		1000		111	66.2	112			

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512144

07-Dec-15

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-6

Sample ID	MB-22611		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	PBS		Batch ID:	22611		RunNo:	30626				
Prep Date:	12/3/2015		Analysis Date:	12/4/2015		SeqNo:	935819		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	1.2		1.000		117	80	120				

Sample ID	LCS-22611		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 22611		RunNo: 30626					
Prep Date:	12/3/2015		Analysis Date: 12/4/2015		SeqNo: 935820		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	100	80	120			
Toluene	0.98	0.050	1.000	0	97.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		132	80	120			S

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit



## Sample Log-In Check List

Client Name: **RULE ENGINEERING LL**

Work Order Number: **1512144**

RcptNo: **1**

Received by/date: **JA 12/03/15**

Logged By: **Anne Thorne** 12/3/2015 8:05:00 AM

Completed By: **Anne Thorne** 12/3/2015

Reviewed By: **[Signature]** 12/03/15

*Anne Thorne*

*Anne Thorne*

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

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

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Client: <u>Rule Engineering LLC</u>	<input type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush <u>3 Day (12/7/15)</u>
Mailing Address: <u>501 Airport Drive, Suite 205</u>	Project Name: <u>Enterprise Lateral 2C-6</u>
<u>Armington, NM 87401</u>	Project #: _____
Phone #: <u>(505) 716-2787</u>	Project Manager: _____
Email or Fax#: <u>hwoods@ruleengineering.com</u>	<u>Heather Woods</u>
A/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)	Sampler: <u>Heather Woods</u>
Creditation <input checked="" type="checkbox"/> NELAP <input type="checkbox"/> Other _____	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
EDD (Type) _____	Sample Temperature: <u>1.3</u>

<input type="checkbox"/> Standard	Results
<input checked="" type="checkbox"/> Rush	3 Day (12/7/15)
Project Name:	

Enterprise Lateral 2C-6

Project #:

**Project Manager:**

Heather Woods

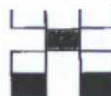
Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3

[illegible]

ate:	Time:	Relinquished by:	Received by:	Date	Time
12/15	1754	Heath M. Woods	Christine Waite	12/15	1754
ate:	Time:	Relinquished by:	Received by:	Date	Time
12/15	1925	Christine Waite	Jane. R. R.	12/15	0805



[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

		X	X	X	X	BTEX + <del>MDE</del> + <del>PBES</del> s (8021)
						BTEX + MTBE + TPH (Gas only)
		X	X	X	X	TPH 8015B (GRO / DRO / MBO)
						TPH (Method 418.1)
						EDB (Method 504.1)
						PAH's (8310 or 8270 SIMS)
						RCRA 8 Metals
						Anions ( $F^-$ , $Cl^-$ , $NO_3^-$ , $NO_2^-$ , $PO_4^{3-}$ , $SO_4^{2-}$ )
						8081 Pesticides / 8082 PCB's
						8260B (VOA)
						8270 (Semi-VOA)
						Air Bubbles (Y or N)

Remarks: Bill to Enterprise  
WO: N22864  
Attn: Tom Long / Johnny Sandoval