

**3R-1012**

**Release Report/ General  
Correspondence**

**Enterprise RA**

**Date: Jul-Sep 2015**

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

State of New Mexico  
Energy Minerals and Natural  
Resources

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

OIL CONS. DIV DIST. 3

JUL 13 2015

Form C-141  
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: Lateral K-7	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: BLM	Mineral Owner: BLM	API No.
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LOCATION OF RELEASE

Unit Letter L	Section 22	Township 26N	Range 7W	Feet from the 1295	North <del>South</del> Line	Feet from the 1120	East <del>West</del> Line	County Rio Arriba
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Latitude 36.468544 Longitude -107.568421

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release <b>Unknown</b> Amount of Natural Gas; 5-10 bbls. fluids	Volume Recovered: <b>None</b>
Source of Release: Failed Repair	Date and Hour of Occurrence: 3/23/15 @ 1:00 p.m.	Date and Hour of Discovery: 3/23/15 @ 1:30 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy Notification - Cory Smith - NMOCD; Shari Ketcham - BLM	
By Whom? Thomas Long	Date and Time 3/23/15 at 3:23 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On March 23, 2015, Enterprise discovered a release on the Lateral K-7 pipeline during maintenance activities. The pipeline was previously isolated, blown down, locked out and tagged out for safety and environmental concerns. The release was a result of a faulty repair of the pipeline. Remediation was completed on April 15, 2015.

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 47 feet long by 34 feet wide by 18 feet deep. Approximately 854 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 E. Fields</i>	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Director, Environmental	Approval Date: <i>8/12/15</i>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <i>7-9-2015</i>	Phone: (713)381-6684	

\* Attach Additional Sheets If Necessary

#NCS 1512030409

(62)





**OIL CONS. DIV DIST. 3**

**JUL 13 2015**

**CORRECTIVE ACTION REPORT**

Property:

**Lateral K-7 (3/23/2015) Pipeline Release  
SW 1/4, S22 T26N R7W  
Rio Arriba County, New Mexico**

June 23, 2015

Apex Project No. 7250415005

Prepared for:

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

Prepared by:

A handwritten signature in blue ink, appearing to read 'Rane Dechilly', written over a horizontal line.

Rane Dechilly  
Environmental Scientist

A handwritten signature in blue ink, appearing to read 'Kyle Summers', written over a horizontal line.

Kyle Summers, CPG.  
Branch Manager/Senior Geologist

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## **CORRECTIVE ACTION REPORT**

### **Lateral K-7 (3/23/2015) Pipeline Release**

SW 1/4, S22 T26N R7W  
Rio Arriba County, New Mexico

**Apex Project No. 7250415005**

## **1.0 INTRODUCTION**

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

The Lateral K-7 (3/23/2015) pipeline release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the southwest (SW) ¼ of Section 22 in Township 26 North and Range 7 West in rural Rio Arriba County, New Mexico (36.46854N, 107.56842W), referred to hereinafter as the "Site" or "subject Site". The Site is located on land managed by the United States Bureau of Land Management (BLM). The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

On March 23, 2015, a release of natural gas was identified at the Site. The release was discovered while replacing a historical "I-wrap" repair with a new solid section of pipeline. Enterprise subsequently initiated excavation activities to remediate hydrocarbon impact. The pipeline was repaired by replacing approximately 44 feet of the pipeline. The surface expression of the release was characterized by minor soil discoloration.

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

### **1.2 Project Objective**

The primary objective of the corrective actions was to reduce the concentration of constituents of concern (COCs) in the on-Site soils to below the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels* (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 ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex TITAN, Inc. (Apex) utilized the general site characteristics obtained during the completion of corrective action activities and information available from the Office of the New Mexico Office of the State Engineer (OSE) to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	20
	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	20
	200 to 1,000 feet	10	
	>1,000 feet	0	
<b>Total Ranking Score</b>			<b>40</b>

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

- Based on depths to groundwater observed in groundwater monitoring wells at two other release sites located at similar proximities to the Palluche Canyon Wash at comparable elevations approximately 1 mile to the north and 2 miles to the south, respectively, depth to groundwater is estimated to be less than 50 feet below grade surface (bgs), resulting in a ranking of "20".
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site. These proximities result in a wellhead protection area ranking of "0".
- The release point is located within a small ephemeral wash that drains to the Palluche Canyon Wash approximately 475 feet to the east, resulting in a distance to surface water ranking of "20".

### 3.0 RESPONSE ACTIONS

#### 3.1 Soil Excavation Activities

On March 23, 2015, a release of natural gas was identified at the Site. The release was discovered while replacing a historical "I-wrap" repair with a new solid section of pipeline. Enterprise subsequently initiated excavation activities to remediate potential hydrocarbon impact. The pipeline was repaired by replacing approximately 44 feet of the pipeline. The surface expression of the release was characterized by minor soil discoloration. During the corrective action activities, Crossfire, LLC, provided heavy equipment and labor support, and Heather Woods and Ranee Deechilly, Apex environmental professionals, provided environmental support.

Corrective action excavation began at the Site on April 6, 2015. On April 9, 2015, confirmation soil samples C-1 through C-15 were collected from the sidewalls and base of the excavation for laboratory analysis. In addition, stockpile soil samples SP-1 through SP-4 were collected to determine the potential to reuse these soils as backfill material. Based on laboratory analytical results, the upper portions (approximately 1 to 9 feet bgs) of the north and east sidewalls exhibited COC concentrations above the applicable OCD RALs. On April 15, 2015, the upper portions of the excavation sidewalls were extended to remove the residual hydrocarbon affected soils and confirmation soil samples C-16 through C-18 were collected.

The overall surface expression of the final remedial action excavation measured approximately 47 feet long by 34 feet wide at the maximum, with a total depth of approximately 18 feet bgs.



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

A total of approximately 854 cubic yards of hydrocarbon affected soils were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, New Mexico for disposal/remediation. The executed C-138 form is provided in Appendix B. The excavation was backfilled with clean imported fill and reusable stockpiled overburden soils (demonstrated by laboratory analysis to exhibit COC concentrations below OCD RALs), and contoured to surrounding grade.

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

### 3.2 Soil Sampling Program

Apex screened head-space samples of Site soils utilizing a PID fitted with a 10.6 eV lamp to evaluate VOCs and aid in determining the excavation limits.

Advance notification of the sampling schedules were provided to the local BLM and OCD district offices, however, no representatives were present during the sampling activities.

Apex's soil sampling program included the collection of a total of eighteen (18) confirmation samples (C-1 through C-18) from the resulting excavation for laboratory analysis, however, C-1 and C-3 were removed by excavation. In addition, four (4) stockpile soil samples were collected to determine the potential to reuse these soils as excavation backfill. Figure 3 depicts the approximate location of the excavated area and shows the final confirmation sample locations in relation to the final excavation dimensions (Appendix A).

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

### 3.3 Laboratory Analytical Methods

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

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

## 4.0 DATA EVALUATION

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



#### 4.1 Confirmation Soil Samples

Apex compared the BTEX and TPH concentrations or laboratory reporting limits associated with the final confirmation samples to the OCD RALs for sites having a total ranking score of "40". Not included in the following discussion are confirmation soil samples C-1 and C-3 that were removed by excavation, and stockpile samples SP-1 and SP-2 which were transported to the landfarm for disposal/remediation.

- The laboratory analyses of confirmation samples collected from soils remaining in place do not indicate benzene concentrations above the laboratory reporting limits, which are below the OCD RAL of 10 milligrams per kilogram (mg/kg).
- The laboratory analyses of the confirmation samples collected from soils remaining in place indicate total BTEX concentrations ranging from below the laboratory reporting limits to 0.15 mg/kg (C-13), which are below the OCD RAL of 50 mg/kg.
- The laboratory analyses of the confirmation samples collected from soils remaining in place indicate combined TPH GRO/DRO concentrations ranging from below the laboratory reporting limits to 62 mg/kg (C-13), which are below the OCD RAL of 100 mg/kg for a site ranking of "40".
- The laboratory analyses of the stockpile samples SP-3 and SP-4 did not indicate benzene or total BTEX concentrations above laboratory reporting limits, which are below the applicable OCD RALs. In addition, laboratory analyses of stockpile samples SP-3 and SP-4 indicate combined TPH GRO/DRO concentrations of below laboratory reporting limits and 12 mg/kg, respectively, which are below the OCD RAL for a site ranking of "40".

The hydrocarbon-affected stockpiled soils (including soils associated with stockpile samples SP-1 and SP-2) were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation.

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

#### 5.0 FINDINGS AND RECOMMENDATIONS

The Lateral K-7 (3/23/2015) pipeline release site is located within the Enterprise ROW in the SW  $\frac{1}{4}$  of Section 22 in Township 26 North and Range 7 West in rural Rio Arriba County, New Mexico. The Site is located on land managed by the BLM. The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

On March 23, 2015, a release of natural gas was identified at the Site. The release was discovered while replacing a historical "I-wrap" repair with a new solid section of pipeline. Enterprise subsequently initiated excavation activities to remediate potential hydrocarbon impact. The pipeline was repaired by replacing approximately 44 feet of the pipeline. The surface expression of the release was characterized by minor soil discoloration.

- 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 silt and silty sand with minor clays.
- The overall surface expression of the final remedial action excavation measured approximately 47 feet long by 34 feet wide at the maximum, with a total depth of approximately 18 feet bgs.
- A total of eighteen (18) confirmation samples (C-1 through C-18) were collected from the resulting final excavation for laboratory analyses, however C-1 and C-3 were removed by excavation. In addition, four (4) stockpile soil samples were collected to determine the potential to reuse these soils as excavation backfill. Soils associated with stockpile samples SP-1 and SP-2 were removed to the landfarm for disposal/remediation.
- Based on analytical results, soils remaining in place do not exhibit COC concentrations above the OCD RALs for a site ranking of "40".
- A total of approximately 854 cubic yards of hydrocarbon affected soils were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with clean imported fill and reusable stockpiled overburden soils (demonstrated by laboratory analysis to exhibit COC concentrations below OCD RALs), and contoured to surrounding grade.

**Based on field observations and laboratory analytical results, no additional investigation or corrective action with respect to soil impact 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.

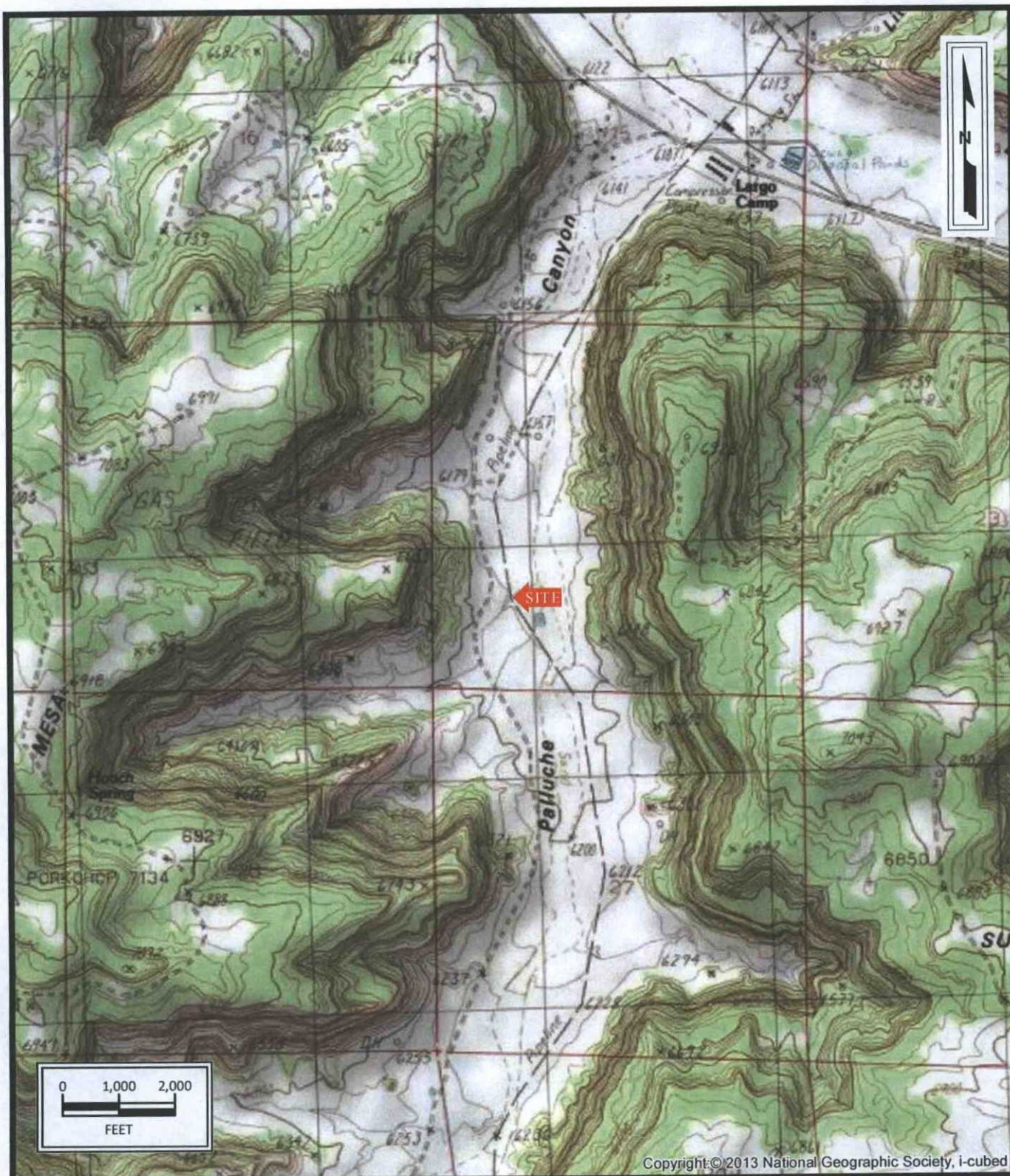
This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the expressed written authorization of Enterprise and Apex. Any unauthorized distribution 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.

## APPENDIX A

### Figures

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Lateral K-7 (3/23/2015)

Pipeline Release

SW1/4 Sec22 T26N R7W

Rural Rio Arriba County, New Mexico

36.46854N, 107.56842W

Project No. 7250415005



**Apex TITAN, Inc.**

606 South Rio Grande, Suite A

Aztec, NM 87410

Phone: (505) 334-5200

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

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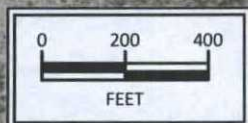
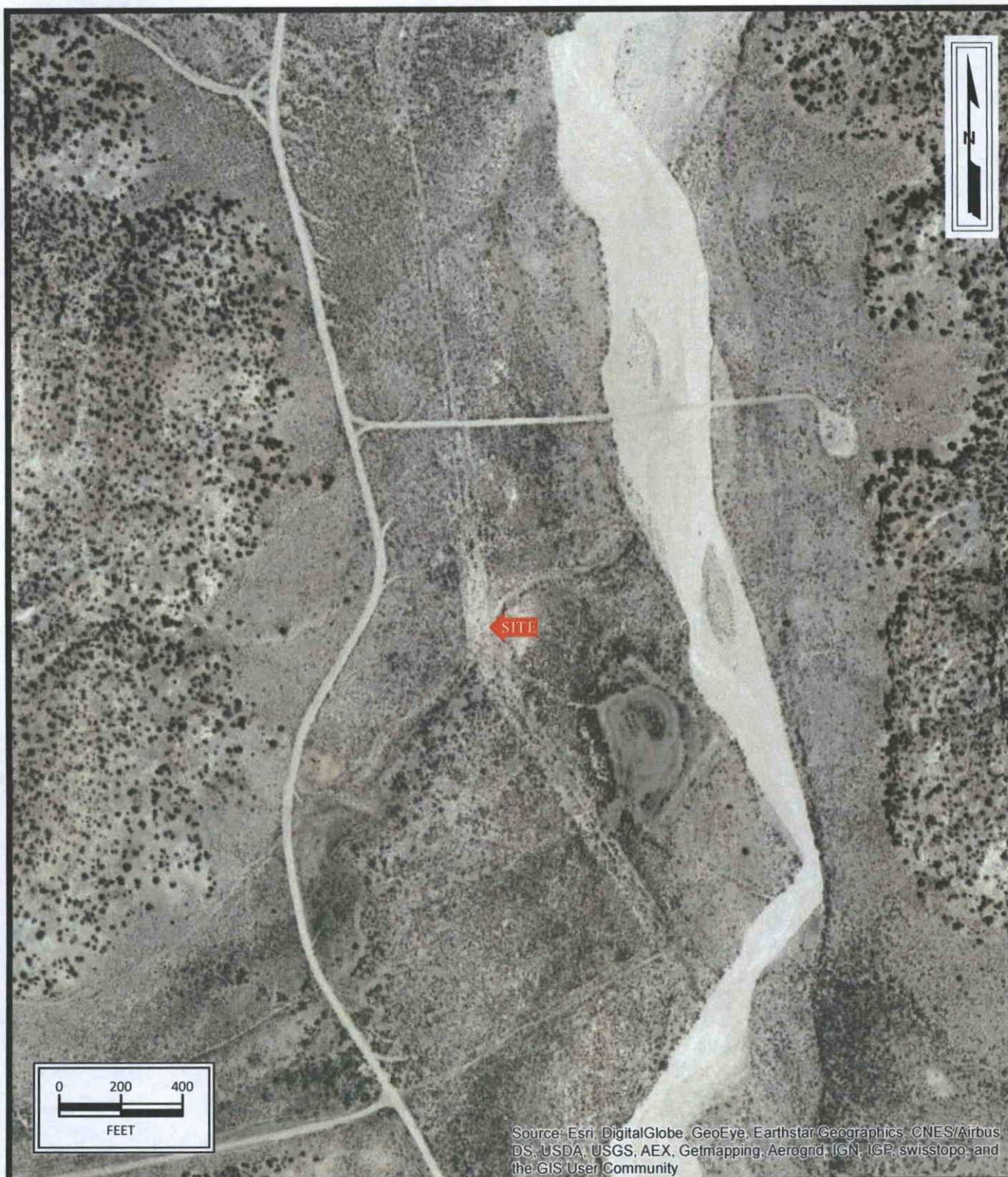
**FIGURE 1**

**Topographic Map**

Smouse Mesa, NM Quadrangle

1985





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

**Lateral K-7 (3/23/2015)**  
**Pipeline Release**  
SW1/4 Sec22 T26N R7W  
Rural Rio Arriba County, New Mexico  
36.46854N, 107.56842W

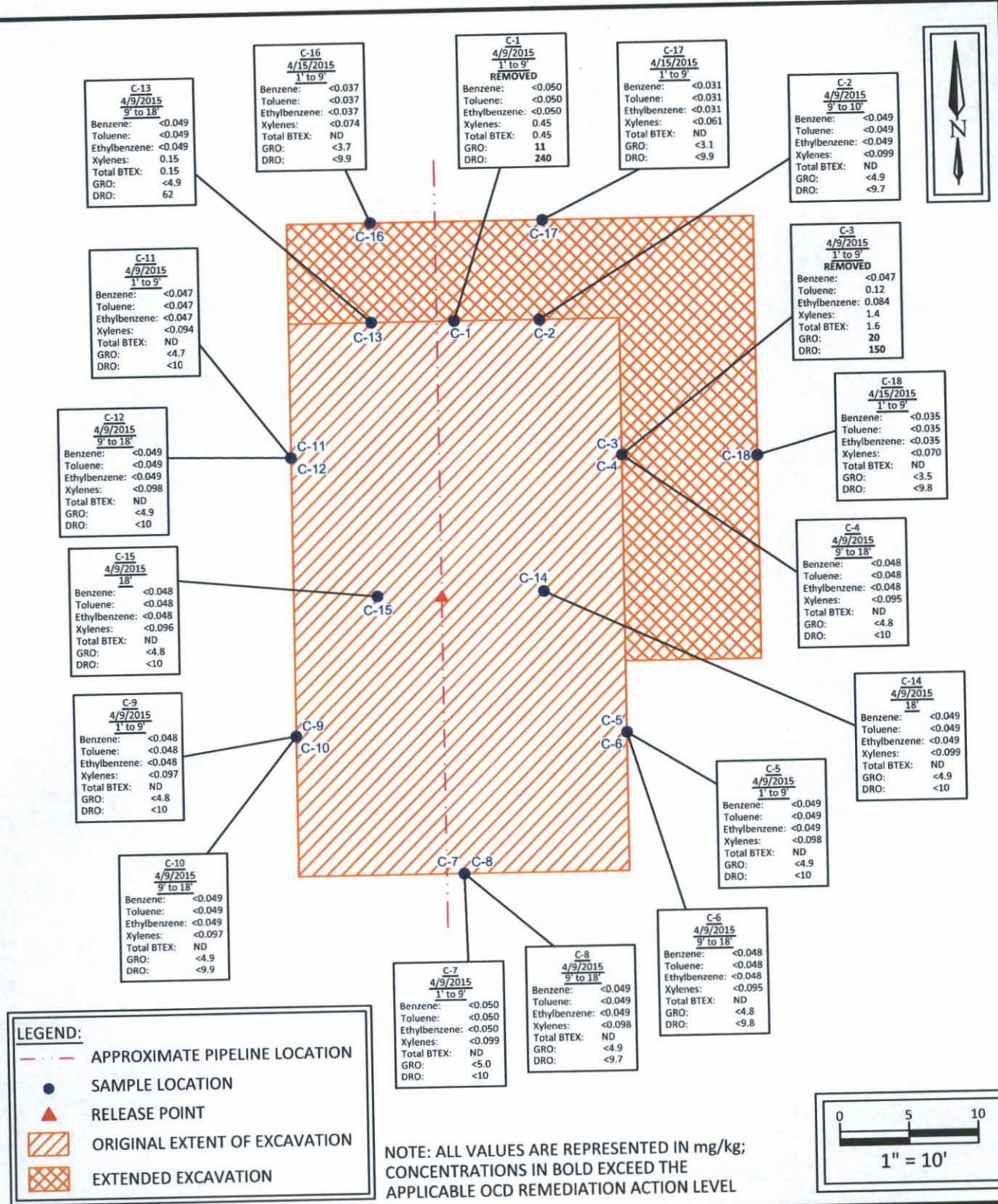
Project No. 7250415005



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A Subsidiary of Apex Companies, LLC

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





**Lateral K-7 (3/23/2015)**  
**Pipeline Release**  
 SW1/4 Sec22 T26N R7W  
 Rural Rio Arriba County, New Mexico  
 36.46854N, 107.56842W  
 Project No. 7250415005



**Apex TITAN, Inc.**  
 606 S. Rio Grande, Suite A  
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**FIGURE 3**  
**Soil Sample Location**  
**and Results**





## APPENDIX B

Executed C-138 Solid Waste Acceptance Form

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

97057-0702

Form C-138  
Revised 08/01/11

\*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 Ave, Farmington NM 87401

**2. Originating Site:**

Lateral K-7 Pipeline Release

April 2015

**3. Location of Material (Street Address, City, State or ULSTR):**

Unit Letter L Section 22 Township 26 North Range 7 West; 36.468542, -107.568427, Rio Arriba County

**4. Source and Description of Waste:**

Source: Natural Gas Gathering Line

Description: Hydrocarbon impacted soil associated with a pipeline release.

Estimated Volume 100 yd<sup>3</sup>/bbls Known Volume (to be entered by the operator at the end of the haul) 854 yd<sup>3</sup>/bbls

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

I, Thomas Long *Thomas Long*, representative or authorized agent for Enterprise Products Operating do hereby

Generator Signature

certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

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

### GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long *Thomas Long* 4-8-15, representative for Enterprise Products Operating authorize to complete

Generator Signature

the required testing/sign the Generator Waste Testing Certification.

I, *Kendra Runny*, representative for Envirotech, Inc. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter: To Be Determined Kyvek, Rosenbaum Construction, Crossfire,  
OCD Permitted Surface Waste Management Facility Baileys

Name and Facility Permit #: Envirotech Inc. Soil Remediation Facility \* Permit #: NM 01-0011

Address of Facility: Hilltop, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Kendra Runny

SIGNATURE: *Kendra Runny*

Surface Waste Management Facility Authorized Agent

TITLE: waste Coordinator

TELEPHONE NO.:

505-632-0615

DATE: 4/8/15



## APPENDIX C

### Photographic Documentation

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## Photograph 1

View of the final excavation, facing southeast.



## Photograph 2

View of the final excavation, facing southwest. Soil "wall" beneath the pipeline was removed prior to backfilling the excavation.



## Photograph 3

View of the final excavation, facing south. Soil "wall" beneath the pipeline was removed prior to backfilling the excavation.





**Photograph 4**

View of the partially backfilled excavation and new pipeline section, facing southwest.



**Photograph 5**

View of the partially backfilled excavation and new pipeline section, facing north.



## APPENDIX D

### Table

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**TABLE 1**  
**Lateral K-7 (3/23/2015) Pipeline Release**  
**SOIL ANALYTICAL SUMMARY**

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100	
Stockpile Samples of Soils Removed to Landfarm									
SP-1	4/9/2015	Stockpile	<0.046	<0.046	<0.046	<0.092	ND	7.1	130
SP-2	4/9/2015	Stockpile	<0.047	<0.047	<0.047	0.64	0.64	65	640
Stockpile Samples of Soils Used As Excavation Backfill									
SP-3	4/9/2015	Stockpile	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<10
SP-4	4/9/2015	Stockpile	<0.050	<0.050	<0.050	<0.099	ND	<5.0	12
Samples of Soils Removed By Excavation									
C-1	4/9/2015	1 to 9	<0.050	<0.050	<0.050	0.45	0.45	11	240
C-3	4/9/2015	1 to 9	<0.047	0.12	0.084	1.4	1.6	20	150
Excavation Confirmation Samples									
C-2	4/9/2015	9 to 18	<0.049	<0.049	<0.049	<0.099	ND	<4.9	<9.7
C-4	4/9/2015	9 to 18	<0.048	<0.048	<0.048	<0.095	ND	<4.8	<10
C-5	4/9/2015	1 to 9	<0.049	<0.049	<0.049	<0.098	ND	<4.9	<10
C-6	4/9/2015	9 to 18	<0.048	<0.048	<0.048	<0.095	ND	<4.8	<9.8
C-7	4/9/2015	1 to 9	<0.050	<0.050	<0.050	<0.099	ND	<5.0	<10
C-8	4/9/2015	9 to 18	<0.049	<0.049	<0.049	<0.098	ND	<4.9	<9.7
C-9	4/9/2015	1 to 9	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<10
C-10	4/9/2015	9 to 18	<0.049	<0.049	<0.049	<0.097	ND	<4.9	<9.9
C-11	4/9/2015	1 to 9	<0.047	<0.047	<0.047	<0.094	ND	<4.7	<10
C-12	4/9/2015	9 to 18	<0.049	<0.049	<0.049	<0.098	ND	<4.9	<10
C-13	4/9/2015	9 to 18	<0.049	<0.049	<0.049	0.15	0.15	<4.9	62
C-14	4/9/2015	18	<0.049	<0.049	<0.049	<0.099	ND	<4.9	<10
C-15	4/9/2015	18	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<10
C-16	4/15/2015	1 to 9	<0.037	<0.037	<0.037	<0.074	ND	<3.7	<9.9
C-17	4/15/2015	1 to 9	<0.031	<0.031	<0.031	<0.061	ND	<3.1	<9.9
C-18	4/15/2015	1 to 9	<0.035	<0.035	<0.035	<0.070	ND	<3.5	<9.8

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

ND = Not Detected above the Laboratory Reporting Limits

NE = Not established

## APPENDIX E

### Laboratory Analytical Reports & Chain of Custody Documentation

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

April 14, 2015

Heather Woods

APEX TITAN

606 S. Rio Grande Unit A

Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-7

OrderNo.: 1504456

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 15 sample(s) on 4/10/2015 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

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-1**Project:** Lateral K-7**Collection Date:** 4/9/2015 4:07:00 PM**Lab ID:** 1504456-001**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	240	10		mg/Kg	1	4/13/2015 2:43:48 PM	18609
Surr: DNOP	106	63.5-128		%REC	1	4/13/2015 2:43:48 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	11	5.0		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Surr: BFB	144	80-120	S	%REC	1	4/11/2015 5:25:59 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.050		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Toluene	ND	0.050		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Ethylbenzene	ND	0.050		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Xylenes, Total	0.45	0.10		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Surr: 4-Bromofluorobenzene	115	80-120		%REC	1	4/11/2015 5:25:59 PM	18615

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	Page 1 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504456

Date Reported: 4/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-2

Project: Lateral K-7

Collection Date: 4/9/2015 2:25:00 PM

Lab ID: 1504456-002

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/13/2015 3:05:10 PM	18609
Surr: DNOP	108	63.5-128		%REC	1	4/13/2015 3:05:10 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/11/2015 5:54:41 PM	18615
Surr: BFB	94.6	80-120		%REC	1	4/11/2015 5:54:41 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	4/11/2015 5:54:41 PM	18615
Toluene	ND	0.049		mg/Kg	1	4/11/2015 5:54:41 PM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/11/2015 5:54:41 PM	18615
Xylenes, Total	ND	0.099		mg/Kg	1	4/11/2015 5:54:41 PM	18615
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	4/11/2015 5:54:41 PM	18615

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	Page 2 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504456

Date Reported: 4/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-3

Project: Lateral K-7

Collection Date: 4/9/2015 2:37:00 PM

Lab ID: 1504456-003

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	150	9.7		mg/Kg	1	4/13/2015 3:26:28 PM	18609
Surr: DNOP	116	63.5-128		%REC	1	4/13/2015 3:26:28 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	20	4.7		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Surr: BFB	160	80-120	S	%REC	1	4/12/2015 12:36:15 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Toluene	0.12	0.047		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Ethylbenzene	0.084	0.047		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Xylenes, Total	1.4	0.095		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	4/12/2015 12:36:15 AM	18615

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	Page 3 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504456

Date Reported: 4/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-4

Project: Lateral K-7

Collection Date: 4/9/2015 2:24:00 PM

Lab ID: 1504456-004

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 3:47:57 PM	18609
Surr: DNOP	77.7	63.5-128		%REC	1	4/13/2015 3:47:57 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/12/2015 1:04:52 AM	18615
Surr: BFB	91.6	80-120		%REC	1	4/12/2015 1:04:52 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/12/2015 1:04:52 AM	18615
Toluene	ND	0.048		mg/Kg	1	4/12/2015 1:04:52 AM	18615
Ethylbenzene	ND	0.048		mg/Kg	1	4/12/2015 1:04:52 AM	18615
Xylenes, Total	ND	0.095		mg/Kg	1	4/12/2015 1:04:52 AM	18615
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	4/12/2015 1:04:52 AM	18615

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	Page 4 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-5**Project:** Lateral K-7**Collection Date:** 4/9/2015 2:43:00 PM**Lab ID:** 1504456-005**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 4:09:23 PM	18609
Surr: DNOP	108	63.5-128		%REC	1	4/13/2015 4:09:23 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/12/2015 1:33:34 AM	18615
Surr: BFB	91.1	80-120		%REC	1	4/12/2015 1:33:34 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	4/12/2015 1:33:34 AM	18615
Toluene	ND	0.049		mg/Kg	1	4/12/2015 1:33:34 AM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/12/2015 1:33:34 AM	18615
Xylenes, Total	ND	0.098		mg/Kg	1	4/12/2015 1:33:34 AM	18615
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	4/12/2015 1:33:34 AM	18615

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	Page 5 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504456

Date Reported: 4/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-6

Project: Lateral K-7

Collection Date: 4/9/2015 2:40:00 PM

Lab ID: 1504456-006

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/13/2015 4:30:53 PM	18609
Surr: DNOP	92.6	63.5-128		%REC	1	4/13/2015 4:30:53 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/12/2015 2:02:13 AM	18615
Surr: BFB	90.5	80-120		%REC	1	4/12/2015 2:02:13 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/12/2015 2:02:13 AM	18615
Toluene	ND	0.048		mg/Kg	1	4/12/2015 2:02:13 AM	18615
Ethylbenzene	ND	0.048		mg/Kg	1	4/12/2015 2:02:13 AM	18615
Xylenes, Total	ND	0.095		mg/Kg	1	4/12/2015 2:02:13 AM	18615
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/12/2015 2:02:13 AM	18615

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	Page 6 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-7**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:44:00 PM**Lab ID:** 1504456-007**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 4:52:11 PM	18609
Surr: DNOP	93.9	63.5-128		%REC	1	4/13/2015 4:52:11 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/12/2015 2:30:50 AM	18615
Surr: BFB	89.0	80-120		%REC	1	4/12/2015 2:30:50 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.050		mg/Kg	1	4/12/2015 2:30:50 AM	18615
Toluene	ND	0.050		mg/Kg	1	4/12/2015 2:30:50 AM	18615
Ethylbenzene	ND	0.050		mg/Kg	1	4/12/2015 2:30:50 AM	18615
Xylenes, Total	ND	0.099		mg/Kg	1	4/12/2015 2:30:50 AM	18615
Surr: 4-Bromofluorobenzene	98.8	80-120		%REC	1	4/12/2015 2:30:50 AM	18615

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	Page 7 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-8**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:42:00 PM**Lab ID:** 1504456-008**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/13/2015 5:13:34 PM	18609
Surr: DNOP	85.8	63.5-128		%REC	1	4/13/2015 5:13:34 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Surr: BFB	89.8	80-120		%REC	1	4/12/2015 2:59:26 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Toluene	ND	0.049		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Xylenes, Total	ND	0.098		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Surr: 4-Bromofluorobenzene	99.8	80-120		%REC	1	4/12/2015 2:59:26 AM	18615

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	Page 8 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-9**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:15:00 PM**Lab ID:** 1504456-009**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 5:34:56 PM	18609
Surr: DNOP	85.6	63.5-128		%REC	1	4/13/2015 5:34:56 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/12/2015 3:28:01 AM	18615
Surr: BFB	90.5	80-120		%REC	1	4/12/2015 3:28:01 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/12/2015 3:28:01 AM	18615
Toluene	ND	0.048		mg/Kg	1	4/12/2015 3:28:01 AM	18615
Ethylbenzene	ND	0.048		mg/Kg	1	4/12/2015 3:28:01 AM	18615
Xylenes, Total	ND	0.097		mg/Kg	1	4/12/2015 3:28:01 AM	18615
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/12/2015 3:28:01 AM	18615

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	Page 9 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-10**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:28:00 PM**Lab ID:** 1504456-010**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/13/2015 5:56:23 PM	18609
Surr: DNOP	82.6	63.5-128		%REC	1	4/13/2015 5:56:23 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Surr: BFB	90.0	80-120		%REC	1	4/12/2015 3:56:42 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Toluene	ND	0.049		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Xylenes, Total	ND	0.097		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/12/2015 3:56:42 AM	18615

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	Page 10 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-11**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:21:00 PM**Lab ID:** 1504456-011**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 6:17:40 PM	18609
Surr: DNOP	90.2	63.5-128		%REC	1	4/13/2015 6:17:40 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Surr: BFB	89.4	80-120		%REC	1	4/12/2015 4:25:23 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Toluene	ND	0.047		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Ethylbenzene	ND	0.047		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Xylenes, Total	ND	0.094		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Surr: 4-Bromofluorobenzene	99.9	80-120		%REC	1	4/12/2015 4:25:23 AM	18615

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	Page 11 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-12**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:24:00 PM**Lab ID:** 1504456-012**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 6:39:09 PM	18609
Surr: DNOP	89.0	63.5-128		%REC	1	4/13/2015 6:39:09 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Surr: BFB	91.0	80-120		%REC	1	4/12/2015 4:54:01 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Toluene	ND	0.049		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Xylenes, Total	ND	0.098		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/12/2015 4:54:01 AM	18615

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	Page 12 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-13**Project:** Lateral K-7**Collection Date:** 4/9/2015 4:05:00 PM**Lab ID:** 1504456-013**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	62	10		mg/Kg	1	4/13/2015 7:00:38 PM	18609
Surr: DNOP	81.9	63.5-128		%REC	1	4/13/2015 7:00:38 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2015 3:01:45 PM	18615
Surr: BFB	105	80-120		%REC	1	4/13/2015 3:01:45 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	4/13/2015 3:01:45 PM	18615
Toluene	ND	0.049		mg/Kg	1	4/13/2015 3:01:45 PM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2015 3:01:45 PM	18615
Xylenes, Total	0.15	0.098		mg/Kg	1	4/13/2015 3:01:45 PM	18615
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	4/13/2015 3:01:45 PM	18615

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
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-14**Project:** Lateral K-7**Collection Date:** 4/9/2015 2:20:00 PM**Lab ID:** 1504456-014**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 7:22:11 PM	18609
Surr: DNOP	80.5	63.5-128		%REC	1	4/13/2015 7:22:11 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Surr: BFB	89.5	80-120		%REC	1	4/13/2015 3:30:28 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Toluene	ND	0.049		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Xylenes, Total	ND	0.099		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	4/13/2015 3:30:28 PM	18615

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	Page 14 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504456

Date Reported: 4/14/2015

**CLIENT:** APEX TITAN**Client Sample ID:** C-15**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:11:00 PM**Lab ID:** 1504456-015**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 7:43:38 PM	18609
Surr: DNOP	79.6	63.5-128		%REC	1	4/13/2015 7:43:38 PM	18609
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Surr: BFB	92.8	80-120		%REC	1	4/13/2015 4:28:37 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Toluene	ND	0.048		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Xylenes, Total	ND	0.096		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	4/13/2015 4:28:37 PM	18615

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	Page 15 of 18
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504456

14-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18609	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	18609	RunNo:	25459					
Prep Date:	4/10/2015	Analysis Date:	4/13/2015	SeqNo:	753898	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	12		10.00		123	63.5	128			

Sample ID	LCS-18609	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	18609	RunNo:	25459					
Prep Date:	4/10/2015	Analysis Date:	4/13/2015	SeqNo:	754238	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.8	67.8	130			
Surr: DNOP	5.6		5.000		113	63.5	128			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504456

14-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18613		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 18613		RunNo: 25449					
Prep Date:	4/10/2015		Analysis Date: 4/11/2015		SeqNo: 753290		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		88.8	80	120			

Sample ID	LCS-18613		SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	LCSS		Batch ID:	18613		RunNo:	25449				
Prep Date:	4/10/2015		Analysis Date:	4/11/2015		SeqNo:	753291		Units: %REC		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: BFB	960		1000		96.3	80	120				

Sample ID	MB-18615		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	18615		RunNo:	25449				
Prep Date:	4/10/2015		Analysis Date:	4/11/2015		SeqNo:	753308		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	910		1000		90.7	80	120				

Sample ID	LCS-18615		SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	LCSS		Batch ID:	18615		RunNo:	25449				
Prep Date:	4/10/2015		Analysis Date:	4/11/2015		SeqNo:	753309		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	102	64	130				
Surr: BFB	980		1000		97.8	80	120				

## Qualifiers:

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

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



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504456

14-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18613		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 18613		RunNo: 25449					
Prep Date:	4/10/2015		Analysis Date: 4/11/2015		SeqNo: 753332		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID	LCS-18613		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	LCSS		Batch ID:	18613		RunNo:	25449				
Prep Date:	4/10/2015		Analysis Date:	4/11/2015		SeqNo:	753333		Units: %REC		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120				

Sample ID	MB-18615	SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	PBS	Batch ID:	18615		RunNo:	25449				
Prep Date:	4/10/2015	Analysis Date:	4/11/2015		SeqNo:	753339		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	1.0		1.000		105	80	120			

Sample ID	LCS-18615		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 18615		RunNo: 25449					
Prep Date:	4/10/2015		Analysis Date: 4/11/2015		SeqNo: 753340		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	76.6	128			
Toluene	0.97	0.050	1.000	0	97.5	75	124			
Ethylbenzene	1.0	0.050	1.000	0	104	79.5	126			
Xylenes, Total	3.2	0.10	3.000	0	106	78.8	124			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH 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: 1504456

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/10/2015 6:00:00 AM

Completed By: Lindsay Mangin

4/10/2015 8:25:07 AM

Reviewed By:

### 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	2.1	Good	Yes			


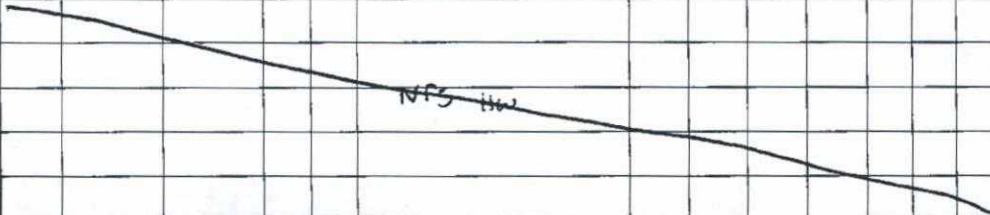


 <b>APEX</b> Office Location <u>Aztec, NM</u>						Laboratory: <u>Hall Environmental</u> Address: <u>Albuquerque, NM</u>								ANALYSIS REQUESTED		<div style="border: 1px solid black; padding: 5px;"> Lab use only Due Date:   Temp. of coolers when received (C°): <u>2.1</u>  <div style="display: flex; justify-content: space-between;"><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div></div> Page <u>1</u> of <u>2</u> </div>							
						Contact: <u>Andy Freeman</u> Phone: _____ PO/SO #: <u>Direct Bill to Enterprise</u>																	
Project Manager <u>Heather Woods</u>						Sampler's Name <u>Heather Woods</u>						Sampler's Signature <u>Heather M. Woods</u>											
Proj. No. <u>7250415005</u>			Project Name <u>Lateral K-7</u>				No./Type of Containers																
Matrix	Date	Time	Cold	Gard	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)										
S	4/9/15	1607			C-1						I	X	X	<u>1504456 -001</u>									
S	4/9/15	1425			C-2						I	X	X	<u>-002</u>									
S	4/9/15	1437			C-3						I	X	X	<u>-003</u>									
S	4/9/15	1424			C-4						I	X	X	<u>-004</u>									
S	4/9/15	1443			C-5						I	X	X	<u>-005</u>									
S	4/9/15	1440			C-6						I	X	X	<u>-006</u>									
S	4/9/15	1544			C-7						I	X	X	<u>-007</u>									
S	4/9/15	1542			C-8						I	X	X	<u>-008</u>									
S	4/9/15	1515			C-9						I	X	X	<u>-009</u>									
S	4/9/15	1528			C-10						I	X	X	<u>-010</u>									
Turn around time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input type="checkbox"/> 100% Rush																							
Relinquished by (Signature) <u>Heather M. Woods</u>			Date: <u>4/9/15</u>		Time: <u>1944</u>		Received by: (Signature) <u>[Signature]</u>			Date: <u>4/12/15</u>		Time: <u>0600</u>		NOTES: <u>Direct Bill to Enterprise</u> <u>Attn: Tom Long / Johnny Sandoval</u> <u>Non-AFE: N20591</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	WW - Wastewater	W - Water	S - Soil	SD - Solid	L - Liquid	A - Air Bag	C - Charcoal tube	SL - sludge	O - Oil
Container	VOA - 40 ml vial	A/G - Amber / Or Glass	1 Liter		250 ml - Glass wide mouth		P/O - Plastic or other		



## CHAIN OF CUSTODY RECORD

 <b>APEX</b> Office Location <u>Aztec, N.M.</u>		Laboratory: <u>Hall Environmental</u> Address: <u>Albuquerque, N.M.</u>		ANALYSIS REQUESTED  <div style="transform: rotate(-45deg); display: inline-block;">8021 BTEX</div> <div style="transform: rotate(-45deg); display: inline-block;">8015 TPH GRS/DEO</div>										Lab use only Due Date: _____  Temp. of coolers when received (C°): <u>2.1</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>2</u> of <u>2</u>					1	2	3	4	5													
		1	2											3	4	5																				
Contact: <u>Andy Freeman</u> Phone: _____ PO/SO #: <u>Direct Bill to Enterprise</u>																																				
Project Manager <u>Heather Woods</u>				Sampler's Name <u>Heather Woods</u>				Sampler's Signature <u>Heather M. Woods</u>																												
Proj. No. <u>7250415005</u>		Project Name <u>Lateral K-7</u>				No/Type of Containers																														
Matrix	Date	Time	CO DE P	GR AB	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)																							
S	4/9/15	1521			C-11						1														X	X	<u>1504456-011</u> <u>-012</u> <u>-013</u> <u>-014</u> <u>-015</u>									
S	4/9/15	1524			C-12						1		X	X																						
S	4/9/15	1605			C-13						1		X	X																						
S	4/9/15	1420			C-14						1		X	X																						
S	4/9/15	1511			C-15						1		X	X																						
																																				
Turn around time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input type="checkbox"/> 100% Rush																																				
Relinquished by (Signature)			Date: <u>4/9/15</u> Time: <u>1944</u>		Received by: (Signature)			Date: <u>4/15/15</u> Time: <u>1900</u>		NOTES: <u>Direct Bill to Enterprise</u> <u>Attn: Tom Long / Johnny Sandoval</u> <u>Non-AFE: N 20591</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: _____																												
<table style="width:100%; font-size: small;"> <tr> <td>Matrix</td> <td>WW - Wastewater</td> <td>W - Water</td> <td>S - Soil</td> <td>SD - Solid</td> <td>L - Liquid</td> <td>A - Air Bag</td> <td>C - Charcoal tube</td> <td>SL - sludge</td> <td>O - Oil</td> </tr> <tr> <td>Container</td> <td>VOA - 40 ml vial</td> <td>A/G - Amber / Or Glass 1 Liter</td> <td></td> <td></td> <td>250 ml - Glass wide mouth</td> <td></td> <td>P/O - Plastic or other</td> <td></td> <td></td> </tr> </table>																	Matrix	WW - Wastewater	W - Water	S - Soil	SD - Solid	L - Liquid	A - Air Bag	C - Charcoal tube	SL - sludge	O - Oil	Container	VOA - 40 ml vial	A/G - Amber / Or Glass 1 Liter			250 ml - Glass wide mouth		P/O - Plastic or other		
Matrix	WW - Wastewater	W - Water	S - Soil	SD - Solid	L - Liquid	A - Air Bag	C - Charcoal tube	SL - sludge	O - Oil																											
Container	VOA - 40 ml vial	A/G - Amber / Or Glass 1 Liter			250 ml - Glass wide mouth		P/O - Plastic or other																													





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)

April 17, 2015

Heather Woods

APEX TITAN

606 S. Rio Grande Unit A

Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-7

OrderNo.: 1504687

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/16/2015 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.

## Analytical Report

Lab Order 1504687

Date Reported: 4/17/2015

CLIENT: APEX TITAN

Client Sample ID: C-16

Project: Lateral K-7

Collection Date: 4/15/2015 4:40:00 PM

Lab ID: 1504687-001

Matrix: MEOH (SOIL)

Received Date: 4/16/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/16/2015 9:54:57 AM	18708
Surr: DNOP	78.9	57.9-140		%REC	1	4/16/2015 9:54:57 AM	18708
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	4/16/2015 11:19:17 AM	18710
Surr: BFB	91.1	80-120		%REC	1	4/16/2015 11:19:17 AM	18710
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.037		mg/Kg	1	4/16/2015 11:19:17 AM	18710
Toluene	ND	0.037		mg/Kg	1	4/16/2015 11:19:17 AM	18710
Ethylbenzene	ND	0.037		mg/Kg	1	4/16/2015 11:19:17 AM	18710
Xylenes, Total	ND	0.074		mg/Kg	1	4/16/2015 11:19:17 AM	18710
Surr: 4-Bromofluorobenzene	96.8	80-120		%REC	1	4/16/2015 11:19:17 AM	18710

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

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



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504687

Date Reported: 4/17/2015

CLIENT: APEX TITAN

Client Sample ID: C-17

Project: Lateral K-7

Collection Date: 4/15/2015 2:40:00 PM

Lab ID: 1504687-002

Matrix: MEOH (SOIL)

Received Date: 4/16/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/16/2015 10:16:30 AM	18708
Surr: DNOP	86.2	57.9-140		%REC	1	4/16/2015 10:16:30 AM	18708
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	4/16/2015 11:48:06 AM	18710
Surr: BFB	89.4	80-120		%REC	1	4/16/2015 11:48:06 AM	18710
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.031		mg/Kg	1	4/16/2015 11:48:06 AM	18710
Toluene	ND	0.031		mg/Kg	1	4/16/2015 11:48:06 AM	18710
Ethylbenzene	ND	0.031		mg/Kg	1	4/16/2015 11:48:06 AM	18710
Xylenes, Total	ND	0.061		mg/Kg	1	4/16/2015 11:48:06 AM	18710
Surr: 4-Bromofluorobenzene	96.3	80-120		%REC	1	4/16/2015 11:48:06 AM	18710

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
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504687

Date Reported: 4/17/2015

CLIENT: APEX TITAN

Client Sample ID: C-18

Project: Lateral K-7

Collection Date: 4/15/2015 3:45:00 PM

Lab ID: 1504687-003

Matrix: MEOH (SOIL)

Received Date: 4/16/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/16/2015 10:37:57 AM	18708
Surr: DNOP	82.2	57.9-140		%REC	1	4/16/2015 10:37:57 AM	18708
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/16/2015 12:16:53 PM	18710
Surr: BFB	87.3	80-120		%REC	1	4/16/2015 12:16:53 PM	18710
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.035		mg/Kg	1	4/16/2015 12:16:53 PM	18710
Toluene	ND	0.035		mg/Kg	1	4/16/2015 12:16:53 PM	18710
Ethylbenzene	ND	0.035		mg/Kg	1	4/16/2015 12:16:53 PM	18710
Xylenes, Total	ND	0.070		mg/Kg	1	4/16/2015 12:16:53 PM	18710
Surr: 4-Bromofluorobenzene	93.6	80-120		%REC	1	4/16/2015 12:16:53 PM	18710

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
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504687

17-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18708	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	18708	RunNo:	25548					
Prep Date:	4/15/2015	Analysis Date:	4/16/2015	SeqNo:	756791	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	8.9		10.00		88.9	63.5	128			

Sample ID	LCS-18708	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	18708	RunNo:	25548					
Prep Date:	4/15/2015	Analysis Date:	4/16/2015	SeqNo:	756805	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.0	67.8	130			
Surr: DNOP	4.7		5.000		93.5	57.9	140			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504687

17-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18710	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	18710	RunNo:	25555					
Prep Date:	4/15/2015	Analysis Date:	4/16/2015	SeqNo:	757273	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	930		1000		93.2	80	120			

Sample ID	LCS-18710	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	18710	RunNo:	25555					
Prep Date:	4/15/2015	Analysis Date:	4/16/2015	SeqNo:	757274	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	100	64	130			
Surr: BFB	960		1000		95.8	80	120			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504687

17-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18710		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	18710		RunNo:	25555			
Prep Date:	4/15/2015		Analysis Date:	4/16/2015		SeqNo:	757283		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	0.92		1.000		92.4	80	120			

Sample ID	LCS-18710		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	18710		RunNo:	25555			
Prep Date:	4/15/2015		Analysis Date:	4/16/2015		SeqNo:	757284		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	109	76.6	128			
Toluene	1.0	0.050	1.000	0	102	75	124			
Ethylbenzene	1.1	0.050	1.000	0	107	79.5	126			
Xylenes, Total	3.2	0.10	3.000	0	106	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH 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: 1504687

RcptNo: 1

Received by/date: Ag 04/16/15

Logged By: Ashley Gallegos 4/16/2015 8:00:00 AM

Completed By: Ashley Gallegos 4/16/2015 8:24:56 AM

Reviewed By: CS 04/16/15

### 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	1.0	Good	Yes			







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)

April 22, 2015

Heather Woods

APEX TITAN

606 S. Rio Grande Unit A

Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-7

OrderNo.: 1504521

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/10/2015 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.****Analytical Report**

Lab Order 1504521

Date Reported: 4/22/2015

**CLIENT:** APEX TITAN**Client Sample ID:** SP-1**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:49:00 PM**Lab ID:** 1504521-001**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	130	9.7		mg/Kg	1	4/14/2015 2:49:08 PM	18641
Surr: DNOP	106	63.5-128		%REC	1	4/14/2015 2:49:08 PM	18641
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	7.1	4.6		mg/Kg	1	4/16/2015 11:45:34 PM	18657
Surr: BFB	144	80-120	S	%REC	1	4/16/2015 11:45:34 PM	18657
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.046		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Toluene	ND	0.046		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Ethylbenzene	ND	0.046		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Xylenes, Total	ND	0.092		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/16/2015 12:17:42 AM	18657

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
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504521

Date Reported: 4/22/2015

CLIENT: APEX TITAN

Client Sample ID: SP-2

Project: Lateral K-7

Collection Date: 4/9/2015 3:54:00 PM

Lab ID: 1504521-002

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: BCN
Diesel Range Organics (DRO)	640	10		mg/Kg	1	4/14/2015 4:49:07 PM	18641
Surr: DNOP	117	63.5-128		%REC	1	4/14/2015 4:49:07 PM	18641
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	65	23		mg/Kg	5	4/17/2015 12:14:19 AM	18657
Surr: BFB	172	80-120	S	%REC	5	4/17/2015 12:14:19 AM	18657
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Toluene	ND	0.047		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Ethylbenzene	ND	0.047		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Xylenes, Total	0.64	0.093		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Surr: 4-Bromofluorobenzene	138	80-120	S	%REC	1	4/16/2015 12:46:23 AM	18657

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

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



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504521

Date Reported: 4/22/2015

**CLIENT:** APEX TITAN**Client Sample ID:** SP-3**Project:** Lateral K-7**Collection Date:** 4/9/2015 3:59:00 PM**Lab ID:** 1504521-003**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/14/2015 5:10:43 PM	18641
Surr: DNOP	110	63.5-128		%REC	1	4/14/2015 5:10:43 PM	18641
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/17/2015 12:43:02 AM	18657
Surr: BFB	93.5	80-120		%REC	1	4/17/2015 12:43:02 AM	18657
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.048		mg/Kg	1	4/16/2015 1:15:01 AM	18657
Toluene	ND	0.048		mg/Kg	1	4/16/2015 1:15:01 AM	18657
Ethylbenzene	ND	0.048		mg/Kg	1	4/16/2015 1:15:01 AM	18657
Xylenes, Total	ND	0.096		mg/Kg	1	4/16/2015 1:15:01 AM	18657
Surr: 4-Bromofluorobenzene	90.8	80-120		%REC	1	4/16/2015 1:15:01 AM	18657

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
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1504521

Date Reported: 4/22/2015

**CLIENT:** APEX TITAN**Client Sample ID:** SP-4**Project:** Lateral K-7**Collection Date:** 4/9/2015 4:12:00 PM**Lab ID:** 1504521-004**Matrix:** SOIL**Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	12	10		mg/Kg	1	4/14/2015 5:32:06 PM	18641
Surr: DNOP	112	63.5-128		%REC	1	4/14/2015 5:32:06 PM	18641
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/17/2015 1:11:45 AM	18657
Surr: BFB	88.7	80-120		%REC	1	4/17/2015 1:11:45 AM	18657
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.050		mg/Kg	1	4/16/2015 1:43:42 AM	18657
Toluene	ND	0.050		mg/Kg	1	4/16/2015 1:43:42 AM	18657
Ethylbenzene	ND	0.050		mg/Kg	1	4/16/2015 1:43:42 AM	18657
Xylenes, Total	ND	0.099		mg/Kg	1	4/16/2015 1:43:42 AM	18657
Surr: 4-Bromofluorobenzene	93.1	80-120		%REC	1	4/16/2015 1:43:42 AM	18657

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
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504521

22-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18641	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	18641	RunNo:	25489					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	754938	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	9.9		10.00		98.8	63.5	128			

Sample ID	LCS-18641	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	18641	RunNo:	25489					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	754939	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.0	67.8	130			
Surr: DNOP	4.9		5.000		97.6	63.5	128			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504521

22-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18665	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	18665	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755452	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	870		1000		87.2	80	120			

Sample ID	LCS-18665	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	18665	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755453	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.3	80	120			

Sample ID	MB-18657	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	18657	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755490	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		89.7	80	120			

Sample ID	LCS-18657	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	18657	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755491	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	64	130			
Surr: BFB	970		1000		97.0	80	120			

Sample ID	MB-18710	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	18710	RunNo:	25555					
Prep Date:	4/15/2015	Analysis Date:	4/16/2015	SeqNo:	757273	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		93.2	80	120			

Sample ID	LCS-18710	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	18710	RunNo:	25555					
Prep Date:	4/15/2015	Analysis Date:	4/16/2015	SeqNo:	757274	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		95.8	80	120			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504521

22-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	MB-18665	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	18665	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755514	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		97.8	80	120			

Sample ID	LCS-18665	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	18665	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755515	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID	MB-18657	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	18657	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755526	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	1.0		1.000		104	80	120			

Sample ID	LCS-18657	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	18657	RunNo:	25496					
Prep Date:	4/13/2015	Analysis Date:	4/14/2015	SeqNo:	755527	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	113	76.6	128			
Toluene	1.0	0.050	1.000	0	103	75	124			
Ethylbenzene	1.1	0.050	1.000	0	110	79.5	126			
Xylenes, Total	3.3	0.10	3.000	0	110	78.8	124			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID	MB-18710	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	18710	RunNo:	25555					
Prep Date:	4/15/2015	Analysis Date:	4/16/2015	SeqNo:	757283	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		92.4	80	120			

### Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504521

22-Apr-15

Client: APEX TITAN

Project: Lateral K-7

Sample ID	LCS-18710		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 18710		RunNo: 25555					
Prep Date:	4/15/2015		Analysis Date: 4/16/2015		SeqNo: 757284		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

## Qualifiers:

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

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH 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: 1504521

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

4/10/2015 6:00:00 AM

Completed By: Ashley Gallegos

4/13/2015 7:37:57 AM

Reviewed By:

IO

04/13/15

### 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	2.1	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>		ANALYSIS REQUESTED  <div style="transform: rotate(-90deg); transform-origin: center;">             0021 BTEX              0015 TPH GRO/DEO           </div>		Lab use only Due Date: _____								
		Contact: <u>Andy Freeman</u> Phone: _____				Temp. of coolers when received (C°): <u>2.1</u> <div style="display: flex; justify-content: space-around;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span> </div> Page <u>1</u> of <u>1</u>								
Project Manager <u>Heather Woods</u>		PO/SO #: <u>Direct Bill to Enterprise</u>												
Sampler's Name <u>Heather Woods</u>		Sampler's Signature <u>Heather M. Woods</u>												
Proj. No. <u>72504145005</u>		Project Name <u>Lateral K-7 per Heather Woods</u>		Type of Containers										
Matrix	Date	Time	C O D E	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	4/9/15	1549			SP-1						1			
S	4/9/15	1554			SP-2						1			1504521-001
S	4/9/15	1559			SP-3						1			-002
S	4/9/15	1612			SP-4						1			-003
<del> <div style="display: flex; justify-content: space-around;"> <div>MS</div> <div>HW</div> </div> </del>													-004	
Turn around time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input type="checkbox"/> 100% Rush														
Relinquished by (Signature)		Date:		Time:		Received by: (Signature)		Date:		Time:		NOTES: <u>Direct Bill to Enterprise</u> <u>Attn: Tom Long / Johnny Sandoval</u> <u>Non-AFE: N20591</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    AG - 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

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: Lateral 2C-85	Facility Type: Natural Gas Gathering Pipeline

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

LOCATION OF RELEASE

Unit Letter O	Section 4	Township 23N	Range 4W	Feet from the 1593	North/South Line	Feet from the 2450	East/West Line	County Rio Arriba
------------------	--------------	-----------------	-------------	--------------------------	---------------------	--------------------------	-------------------	----------------------

Latitude 36.249718 Longitude 107.25614

OIL CONS. DIV DIST. 3  
JUL 27 2015

NATURE OF RELEASE

Type of Release: Natural Gas and Condensate	Volume of Release: 18.68 MCF; Estimated 5-7 bbls. of Condensate	Volume Recovered: None
Source of Release: Internal corrosion	Date and Hour of Occurrence: 6/3/2015 @ 11:20 a.m.	Date and Hour of Discovery: 6/3/2015 @ 12:00 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 Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On July 3, 2015, during routine operations a field operation technician identified a natural gas release on the Lateral 2C-85 pipeline. The pipeline was isolated, depressurized, locked out and tagged out. Repairs/remediation were completed on June 23, 2015.

Describe Area Affected and Cleanup Action Taken.\* The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 133 feet long by 18 feet wide ranging from 7 to 9 feet deep. Approximately 180 cubic yards of hydrocarbon impacted soil were excavated from the area of the identify release point 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>	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Director, Environmental	Approval Date: 8/12/15	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 7-22-2015 Phone: (713)381-6684		

\* Attach Additional Sheets If Necessary

#NCS 1517349852

55



**Enterprise Products**  
**Lateral 2C-85 Pipeline Release**  
**Latitude North 36.249718°, Longitude West -107.258614°**  
**SW/SE (Unit O), Section 4, T23N, R4W**  
**Rio Arriba County, New Mexico**  
**July 6, 2015**



**Submitted To:**  
Enterprise Products  
Field Environmental-San Juan Basin  
614 Reilly Avenue  
Farmington, NM 87401

**Submitted By:**  
Souder, Miller & Associates  
401 West Broadway  
Farmington, NM 87401  
(505)325-7535

**OIL CONS. DIV DIST. 3**  
**JUL 27 2015**





## Table of Contents

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### Figures:

Figure 1: Vicinity Map

Figure 2: Site Map

Figure 3: Soil Contaminant Concentration Map

### Tables:

Table 1: Release Information

Table 2: Site Ranking

Table 3: Summary of Laboratory Analysis

### Appendices:

Appendix A: Photographic Documentation

Appendix B: Soil Disposal Documentation

Appendix C: Laboratory Analytical Reports

## 1.0 Executive Summary

From June 4, through June 23, 2015, Souder, Miller & Associates (SMA) responded to oversee the excavation of a hydrocarbon release associated with the Lateral 2C-85 natural gas pipeline. The release was initially reported to SMA on June 3, 2015 and is a result of internal corrosion of the eight-inch natural gas pipeline. The table below summarizes information about the pipeline remediation activities.

TABLE 1: RELEASE INFORMATION					
Name	Lateral 2C-85 Pipeline Release				
Location	Latitude/Longitude		Section, Township, Range		
	36.249718°	-107.258614°	SW/SE (Unit O)	Section 4	T 23N, R 4W
Date Reported to SMA	June 3, 2015				
Reported by	Tom Long				
Land Owner	Jicarilla Apache Nation				
Reported To	NM Oil Conservation Division (NMOCD) Jicarilla Apache Environmental Protection Office (JAEPO)				
Diameter of Pipeline	8 inches				
Source of Release	Internal Corrosion				
Release Contents	Natural Gas Liquids/Condensate				
Release Volume	Unknown				
Nearest Waterway	Located about 300' east of an unnamed wash				
Depth to Groundwater	Estimated to be between 50 and 100 feet				
Nearest Domestic Water Source	Greater than 1,000 feet				
NMOCD Ranking	20				
SMA Response Dates	June 4, 16,17,23, 2015				
Subcontractors	West States Energy Contractors				
Disposal Facility	T-n-T Environmental				
Yd <sup>3</sup> Contaminated Soil Excavated and Disposed	180 (Reported on Completed C-138)				

## 2.0 Introduction

On behalf of Enterprise Products Operating, LLC. (Enterprise), SMA has prepared this report that describes remediation of a hydrocarbon release associated with the Lateral 2C-85 pipeline release site. The site is located in SW/SE (Unit O), Section 4, T23N, R4W, 36.249718°, -107.258614°, Rio Arriba County, New Mexico, on land owned by the Jicarilla Apache Nation. Figure 1 illustrates the vicinity and location of the site.



### 3.0 Site Ranking and Land Jurisdiction

The release site is located near an unnamed ephemeral tributary on land owned by the Jicarilla Apache Nation and governed by the Jicarilla Apache Environmental Protection Office (JAEPO). The site is at an elevation of approximately 7,176 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be between 50 and 100 feet below ground surface (bgs).

SMA searched the New Mexico Office of the State Engineer online water well data base for water wells in the vicinity of the release. No water wells were located in Section 4 or any adjacent sections. The physical location of this release is within the jurisdiction of JAEPO. This release location has been assigned an OCD ranking of 20, which requires a soil remediation standard of 10 parts per million (ppm) benzene, 50 ppm total benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and 100 ppm total petroleum hydrocarbons (TPH). Table 2 illustrates site ranking rationale.

### 4.0 Summary of Field Activities

On June 4, 2015, SMA responded to a hydrocarbon release associated with the Lateral 2C-85 pipeline. West States Energy Contractors (WSEC) was on site with a rubber tired backhoe excavating the pipeline for inspection and repair. The release was determined to be a result of internal corrosion of the 8" diameter pipe, and a clamp was initially installed by WSEC. The faulty section of pipe was later replaced with new pipe. SMA guided the excavation activities by collecting composite soil samples for field screening with a calibrated photo-ionization detector (PID). The extent of the excavation was increased to approximately 18 feet long, 8 feet wide and 6 feet deep. Field screening determined that more excavation was required. It was decided that repairs would be completed prior to continued excavation.

SMA returned to the site on June 16 and 17, 2015 to continue oversight and guidance of the remedial excavation. However, repair activities experienced delays, preventing any continued remedial excavation. SMA left the site, returning the next day to check on the progress. Remedial excavation had not yet resumed on June 17.

SMA returned to site on June 23, 2015 to collect final samples for laboratory analysis. The excavation had been extended over 100 feet along the length of the pipeline to the north as a second release point was suspected. However, no other points of release were discovered. Stockpiled soil was segregated into two piles and the north stockpile was sampled to determine if the soil was suitable for use as backfill material. Five point composite samples were collected from the stockpiles and the walls and base of the excavation. No representatives from JAEPO or NMOCD were present to monitor the sampling activities. The final excavation measured approximately 133 feet long by 18 feet wide with a depth of 7 to 9 feet, covering an area of approximately 2394 ft<sup>2</sup>. A detailed map of the excavation is attached as Figure 3. In total, approximately 180 cubic yards of contaminated soil were removed and replaced with clean backfill material. The contaminated soil was transported to T-n-T Environmental, near Lindrith, NM. Soil disposal documentation is included in Appendix B.



A total of 23 soil samples were submitted for laboratory analysis per United States Environmental Protection Agency Methods: 8021B for benzene, toluene, ethylbenzene, and xylenes (BTEX) and 8015D for diesel and gasoline range organics (DRO/GRO). All samples were analyzed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. Figure 3 illustrates the release point, the extent of the excavation, laboratory soil sample locations, and laboratory results.

## 5.0 Conclusions and Recommendations

As noted in Section 3.0 of this report, this release location has been assigned a NMOCD ranking of 20.

Laboratory analytical results for all final extent samples collected were below laboratory detection limits as well as NMOCD remediation soil standards of 10 parts per million (ppm) benzene, 50 ppm combined benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and 100 ppm total petroleum hydrocarbons, based on the site ranking. Soil contaminant concentrations are illustrated in Figure 3. A summary of laboratory analyses is included in Table 3. Laboratory reports are included in Appendix C

SMA recommends no further action at the Lateral 2C-85 pipeline release location.

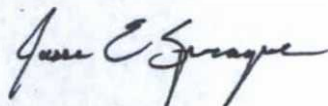
## 6.0 Closure and Limitations

The scope of our services consisted of the performance of a preliminary spill assessment, verification of release stabilization, regulatory liaison, oversight and control of remediation operations, disposal arrangements and documentation, project management, and preparation of this summary report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas pipeline releases in the San Juan Basin in New Mexico.

If there are any questions regarding this report, please contact either Jesse Sprague or Reid Allan at 505-325-7535.

Submitted by:

SOUDER, MILLER & ASSOCIATES



Jesse Sprague  
Staff Scientist

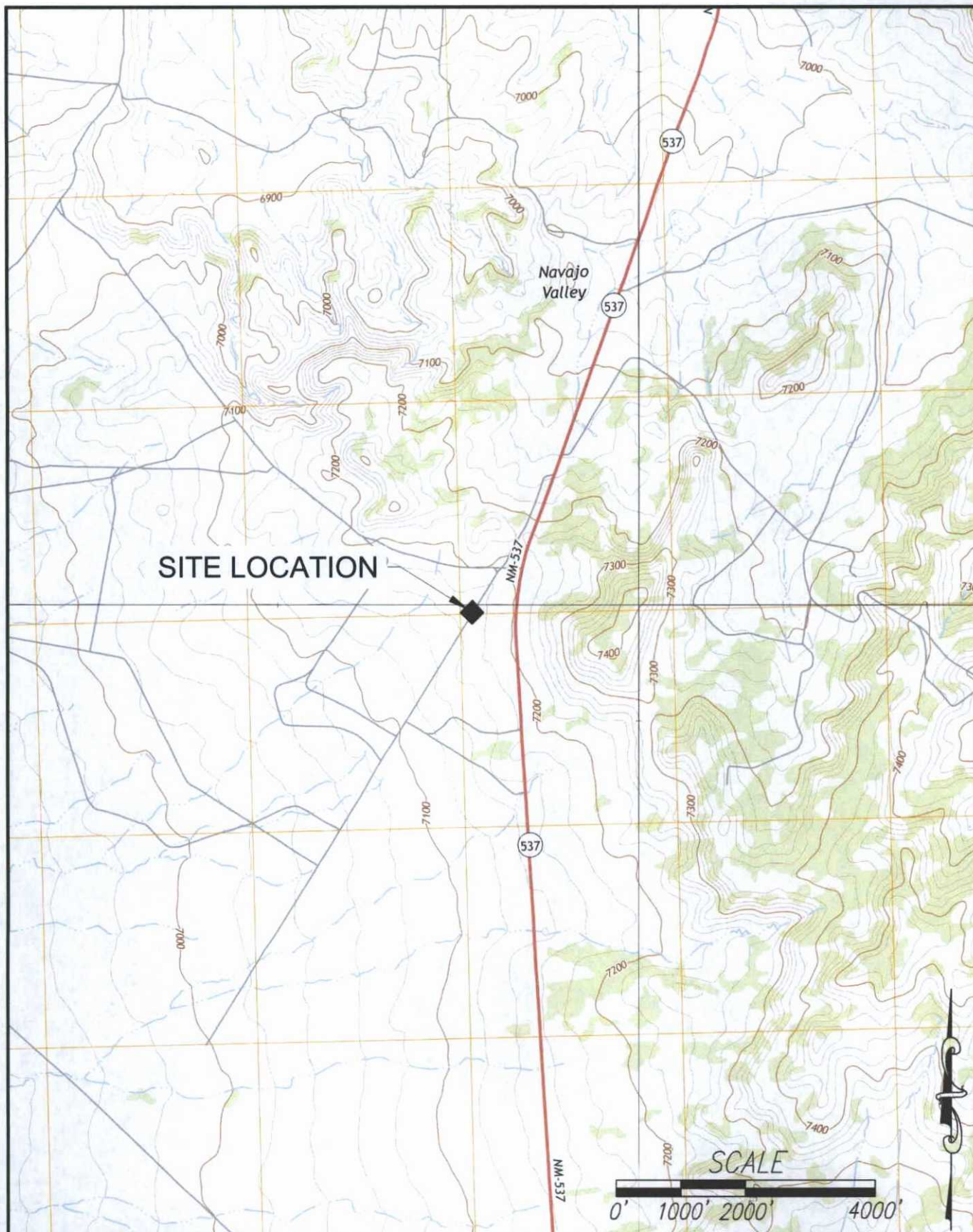
Reviewed by:



Reid Allan, P.G.  
Vice President/Principal Scientist



## Figures



**Souder, Miller & Associates**  
 401 West Broadway Avenue  
 Farmington, NM 87401-5907  
 Phone (505) 325-7535 Toll-Free (800) 519-0098 Fax (505) 326-0045  
[www.soudermiller.com](http://www.soudermiller.com)  
 Serving the Southwest & Rocky Mountains

ENTERPRISE FARMINGTON, NEW MEXICO

VICINITY MAP  
 LATERAL 2C-85  
 SECTION 4, T23N, R4W

Designed JES	Drawn GJF	Checked RSA
Date: July 2015		
Scale: Horiz: 1" = 2000'		
Vert: NA		
Project No: 5123699		
Figure 1		





Souder, Miller & Associates  
 401 West Broadway Avenue  
 Farmington, NM 87401-5907  
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ENTERPRISE FARMINGTON, NEW MEXICO

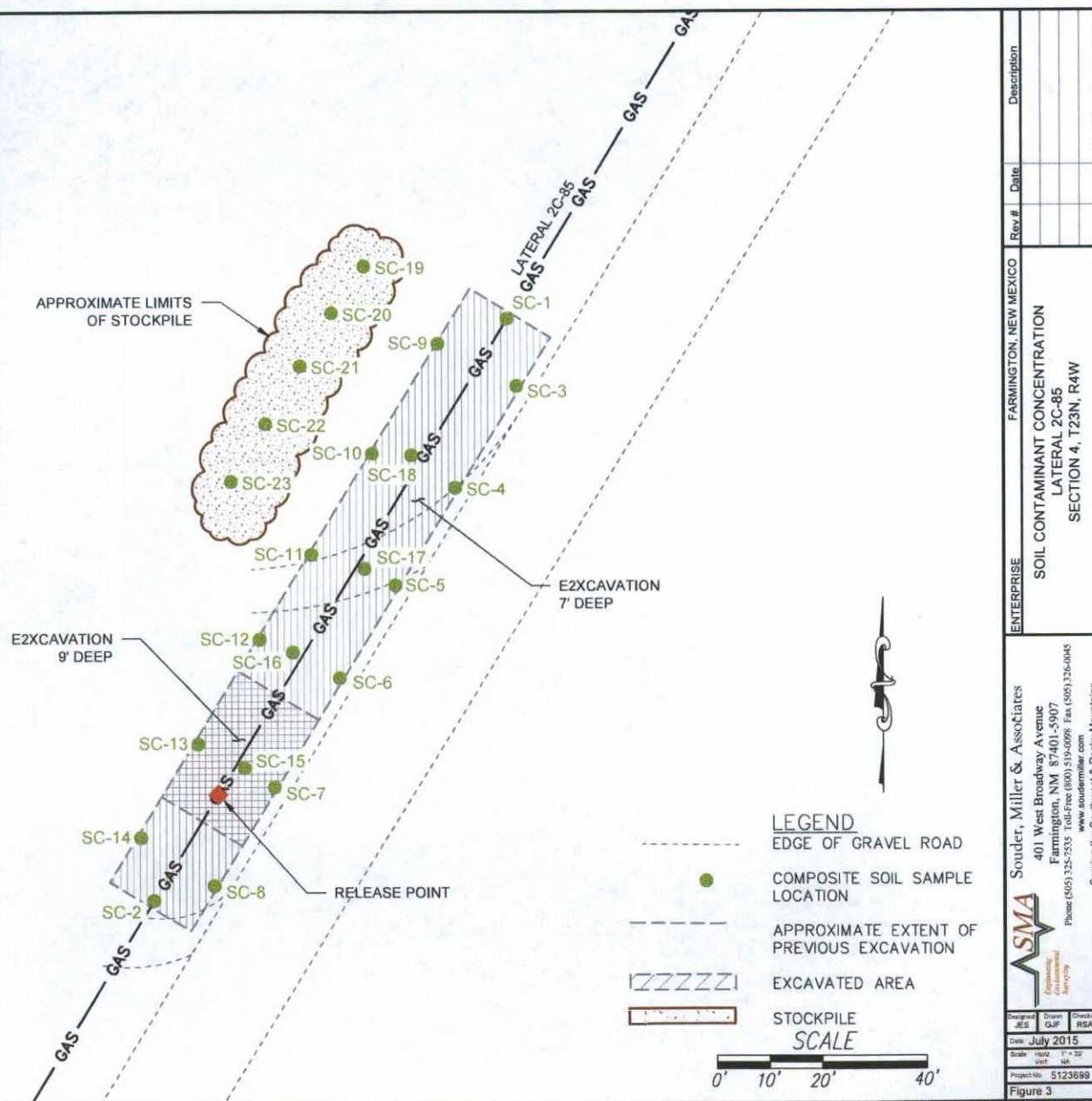
SITE LOCATION MAP  
 LATERAL 2C-85  
 SECTION 4, T23N, R4W

RIO ARRIBA COUNTY

Designed JES	Drawn GJF	Checked RSA
Date: July 2015		
Scale: Horiz: 1" = 30'		
Vert: NA		
Project No: 5123699		
Figure 2		



Date	Time	Sample ID	Sample Depth (Feet BGS)	Method 8015 GRO	Method 8015 DRO	Method 8021 Benzene	Method 8021 BTEX
NMOCD Guidelines		NMOCD Site Ranking:		100 ppm	10 ppm	50 ppm	
6/23/2015	9:00	SC-1 N Wall 0-7	0-7	<3.3	<9.8	<0.033	<0.066
6/23/2015	9:02	SC-2 S Wall 0-7	0-7	<3.1	<10	<0.031	<0.062
6/23/2015	9:04	SC-3 E Wall 0-7	0-7	<3.3	<9.8	<0.033	<0.066
6/23/2015	9:06	SC-4 E Wall (2) 0-7	0-7	<3.1	<10	<0.031	<0.062
6/23/2015	9:08	SC-5 E Wall (3) 0-7	0-7	<3.5	<9.7	<0.035	<0.070
6/23/2015	9:10	SC-6 E Wall (4) 0-7	0-7	<3.5	<10	<0.035	<0.070
6/23/2015	9:12	SC-7 E Wall (5) 0-7	0-7	<3.1	<9.8	<0.031	<0.061
6/23/2015	9:14	SC-8 E Wall 96) 0-9	0-9	<2.9	<9.9	<0.029	<0.059
6/23/2015	9:16	SC-9 W Wall (1) 0-7	0-7	<3.4	<9.9	<0.034	<0.069
6/23/2015	9:18	SC-10 W Wall (2) 0-7	0-7	<3.2	<9.7	<0.032	<0.064
6/23/2015	9:20	SC-11 W Wall (3) 0-7	0-7	<4.4	<9.8	<0.044	<0.089
6/23/2015	9:22	SC-12 W Wall (4) 0-7	0-7	<3.9	<9.7	<0.039	<0.078
6/23/2015	9:24	SC-13 W Wall (5) 0-9	0-9	<4.2	<9.7	<0.042	<0.084
6/23/2015	9:26	SC-14 W Wall (6) 0-9	0-9	<5.3	<10	<0.053	<0.11
6/23/2015	9:29	SC-15 Base S 9'	9	<4.4	<9.6	<0.044	<0.089
6/23/2015	9:30	SC-16 Base S. C. 7'	7	<4.4	<9.6	<0.044	<0.089
6/23/2015	9:32	SC-17 Base N. N. 7'	7	<3.9	<9.7	<0.039	<0.078
6/23/2015	9:34	SC-18 Base N 7'	7	<3.9	<9.7	<0.039	<0.077
6/23/2015	9:36	SC-19 S.P. 1	N/A	<4.6	<9.8	<0.046	<0.091
6/23/2015	9:38	SC-20 S.P. 2	N/A	<4.8	<10	<0.048	<0.097
6/23/2015	9:40	SC-21 S.P. 3	N/A	<4.5	<9.8	<0.045	<0.091
6/23/2015	9:42	SC-22 S.P. 4	N/A	<4.6	<9.6	<0.046	<0.092
6/23/2015	9:44	SC-23 S.P. 5	N/A	<5.1	<10	<0.051	<0.10



Design	Drawn	Checked
JES	GUF	RSA
Date	July 2015	
Scale	Horizontal 1" = 20'	
Vertical	NA	
Project No.	5123688	
Figure	3	

ENTERPRISE FARMINGTON, NEW MEXICO

SOIL CONTAMINANT CONCENTRATION LATERAL 2C-85 SECTION 4, T23N, R4W

Souder, Miller & Associates  
401 West Broadway Avenue  
Farmington, NM 87401-5907  
Phone (505) 325-2531 Toll-Free (800) 519-0695 Fax (505) 326-0045  
www.soudermiller.com  
Serving the Southwest & Rocky Mountains



## Tables

Enterprise Products  
Table 2: Site Ranking

Lateral 2C-85  
Pipeline Release  
7/6/2015

Depth to Groundwater	NMOCD Numeric Rank for this Site	Source for Ranking	Notes
< 50 BGS = 20	10	USGS Topo Maps; Google Earth Elevation Difference from the site and the unnamed wash to the west	Site is located near unnamed ephemeral wash on Jicarilla Reservation, no water wells in vicinity
50' to 99' = 10			
>100' = 0			
Ranking Criteria for Horizontal Distance to Nearest Surface Water	NMOCD Numeric Rank for this Site	Source for Ranking	Notes
< 200' = 20	10	USGS Topo Maps; Google Earth (An unnamed wash ~300' to the west); PRRC Mapping Tool	Unnamed ephemeral wash is located approximately 300 feet to the west of release
200' - 1000' = 10			
>1000' = 0			
Ranking Criteria for Horizontal Distance to a Water Well or Water Source	NMOCD Numeric Rank for this Site	Source for Ranking	Notes
<1000' from a water source? <200' from a private domestic water source? YES OR NO to BOTH. YES = 20, NO = 0		NM State Engineer Water Well Database	No Water Wells in 2000 meter radius
	0		
Total Site Ranking			
		30	
Soil Remedation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM





Enterprise Products  
Table 3: Summary of Laboratory Analysis  
Results in mg/Kg

Lateral 2C-85  
Pipeline Release  
7/6/2015

Date	Time	Sample ID	Sample Depth (Feet BGS)	Method 8015 GRO	Method 8015 DRO	Method 8021 Benzene	Method 8021 BTEX
NMOCD Guidelines		NMOCD Site Ranking:		1000 ppm		10 ppm	50 ppm
6/23/2015	9:00	SC-1 N Wall 0-7	0-7	<3.3	<9.8	<0.033	<0.066
6/23/2015	9:02	SC-2 S Wall 0-7	0-7	<3.1	<10	<0.031	<0.062
6/23/2015	9:04	SC-3 E Wall 0-7	0-7	<3.3	<9.8	<0.033	<0.066
6/23/2015	9:06	SC-4 E Wall (2) 0-7	0-7	<3.1	<10	<0.031	<0.062
6/23/2015	9:08	SC-5 E Wall (3) 0-7	0-7	<3.5	<9.7	<0.035	<0.070
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6/23/2015	9:12	SC-7 E Wall (5) 0-7	0-7	<3.1	<9.8	<0.031	<0.061
6/23/2015	9:14	SC-8 E Wall 96) 0-9	0-9	<2.9	<9.9	<0.029	<0.059
6/23/2015	9:16	SC-9 W Wall (1) 0-7	0-7	<3.4	<9.9	<0.034	<0.069
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6/23/2015	9:20	SC-11 W Wall (3) 0-7	0-7	<4.4	<9.8	<0.044	<0.089
6/23/2015	9:22	SC-12 W Wall (4) 0-7	0-7	<3.9	<9.7	<0.039	<0.078
6/23/2015	9:24	SC-13 W Wall (5) 0-9	0-9	<4.2	<9.7	<0.042	<0.084
6/23/2015	9:26	SC-14 W Wall (6) 0-9	0-9	<5.3	<10	<0.053	<0.11
6/23/2015	9:29	SC-15 Base S 9'	9	<4.4	<9.6	<0.044	<0.089
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6/23/2015	9:34	SC-18 Base N 7'	7	<3.9	<9.7	<0.039	<0.077
6/23/2015	9:36	SC-19 S.P. 1	N/A	<4.6	<9.8	<0.046	<0.091
6/23/2015	9:38	SC-20 S.P. 2	N/A	<4.8	<10	<0.048	<0.097
6/23/2015	9:40	SC-21 S.P. 3	N/A	<4.5	<9.8	<0.045	<0.091
6/23/2015	9:42	SC-22 S.P. 4	N/A	<4.6	<9.6	<0.046	<0.092
6/23/2015	9:44	SC-23 S.P. 5	N/A	<5.1	<10	<0.051	<0.10



**Appendix A**  
**Photographic Documentation**



**Site Photographs**  
**Enterprise Products Lateral 2C-85 Pipeline**



**Photo 1:** Lateral 2C-85 site during initial excavation for pipeline inspection and repair, photo aspect to south west.



**Photo 2:** Track mounted excavator on site during sampling, final excavation extent pictured. Repair visible in foreground.



**Site Photographs**  
**Enterprise Products Lateral 2C-85 Pipeline**



**Photo 3:** Deeper base section visible beneath repair, this area was excavated to 9 ft BGS.



**Photo 4:** Track mounted excavator segregating stockpiles. The pile in the background (north) was sampled for use as backfill material.



**Appendix B**  
**Soil Disposal Documentation**

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-138  
Revised August 1, 2011

\*Surface Waste Management Facility Operator  
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:**  
Lateral 2C-85 Pipeline

3. **Location of Material (Street Address, City, State or ULSTR):**  
Unit Letter O Section 4 Township 23 North Range 4 West; 36.249718, -107.25614

4. **Source and Description of Waste:** Hydro-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) 180 yd<sup>3</sup> / bbls

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

I, Thomas Long representative or authorized agent for Enterprise Field Services, LLC do hereby  
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988  
regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-  
exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ Monthly ☐ Weekly ☐ Per Load

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by  
characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261,  
subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check  
the appropriate items)

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

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

I, Thomas Long 6-16-15, representative for Enterprise Field Services, LLC authorize TNT Land Farm. to  
Generator Signature  
complete the required testing/sign the Generator Waste Testing Certification.

I, Craig Schmitz, representative for TNT Land Farm do hereby certify that representative samples of the  
oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform  
to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples  
are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

6. **Transporter: West States Energy Contractor**

Name and Facility Permit #: TNT Evap Pond/Landfarm, NM01-0008  
Address of Facility: 70 CR 405, Lindrieth NM  
Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

**Waste Acceptance Status:**

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Craig Schmitz TITLE: Pres. DATE: 6-23-15

SIGNATURE: [Signature] TELEPHONE NO.: 505-632-0615-774-6504

Surface Waste Management Facility Authorized Agent



**Appendix C**  
**Laboratory Analytical 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)

June 26, 2015

Steve Moskal  
Souder, Miller and Associates  
401 W. Broadway  
Farmington, NM 87401  
TEL: (505) 325-5667  
FAX (505) 327-1496

RE: 2C-85

OrderNo.: 1506A92

Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 23 sample(s) on 6/24/2015 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



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-1 N Wall 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:00:00 AM

Lab ID: 1506A92-001

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 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	9.8		mg/Kg	1	6/24/2015 9:55:56 AM	19901
Surr: DNOP	77.6	57.9-140		%REC	1	6/24/2015 9:55:56 AM	19901
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Surr: BFB	87.3	75.4-113		%REC	1	6/24/2015 11:53:40 AM	19882
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.033		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Toluene	ND	0.033		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Ethylbenzene	ND	0.033		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Xylenes, Total	ND	0.066		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Surr: 4-Bromofluorobenzene	90.2	80-120		%REC	1	6/24/2015 11:53:40 AM	19882

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	Page 1 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-2 S Wall 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:02:00 AM

Lab ID: 1506A92-002

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 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	10		mg/Kg	1	6/24/2015 9:56:05 AM	19901
Surr: DNOP	89.9	57.9-140		%REC	1	6/24/2015 9:56:05 AM	19901
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Surr: BFB	85.7	75.4-113		%REC	1	6/24/2015 12:22:26 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.031		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Toluene	ND	0.031		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Ethylbenzene	ND	0.031		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Xylenes, Total	ND	0.062		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Surr: 4-Bromofluorobenzene	88.1	80-120		%REC	1	6/24/2015 12:22:26 PM	19882

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	Page 2 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-3 E Wall 1 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:04:00 AM

Lab ID: 1506A92-003

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 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	9.8		mg/Kg	1	6/24/2015 10:22:30 AM	19901
Surr: DNOP	92.0	57.9-140		%REC	1	6/24/2015 10:22:30 AM	19901
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	6/24/2015 12:51:15 PM	19882
Surr: BFB	85.5	75.4-113		%REC	1	6/24/2015 12:51:15 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.033		mg/Kg	1	6/24/2015 12:51:15 PM	19882
Toluene	ND	0.033		mg/Kg	1	6/24/2015 12:51:15 PM	19882
Ethylbenzene	ND	0.033		mg/Kg	1	6/24/2015 12:51:15 PM	19882
Xylenes, Total	ND	0.066		mg/Kg	1	6/24/2015 12:51:15 PM	19882
Surr: 4-Bromofluorobenzene	87.5	80-120		%REC	1	6/24/2015 12:51:15 PM	19882

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	Page 3 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-4 E Wall 2 0-7'**Project:** 2C-85**Collection Date:** 6/23/2015 9:06:00 AM**Lab ID:** 1506A92-004**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 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	10		mg/Kg	1	6/24/2015 10:49:30 AM	19901
Surr: DNOP	97.0	57.9-140		%REC	1	6/24/2015 10:49:30 AM	19901
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	6/24/2015 1:20:02 PM	19882
Surr: BFB	85.2	75.4-113		%REC	1	6/24/2015 1:20:02 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.031		mg/Kg	1	6/24/2015 1:20:02 PM	19882
Toluene	ND	0.031		mg/Kg	1	6/24/2015 1:20:02 PM	19882
Ethylbenzene	ND	0.031		mg/Kg	1	6/24/2015 1:20:02 PM	19882
Xylenes, Total	ND	0.062		mg/Kg	1	6/24/2015 1:20:02 PM	19882
Surr: 4-Bromofluorobenzene	86.0	80-120		%REC	1	6/24/2015 1:20:02 PM	19882

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	Page 4 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-5 E Wall 3 0-7'**Project:** 2C-85**Collection Date:** 6/23/2015 9:08:00 AM**Lab ID:** 1506A92-005**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 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	6/24/2015 11:16:17 AM	19901
Surr: DNOP	99.5	57.9-140		%REC	1	6/24/2015 11:16:17 AM	19901
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	6/24/2015 1:48:45 PM	19882
Surr: BFB	84.7	75.4-113		%REC	1	6/24/2015 1:48:45 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.035		mg/Kg	1	6/24/2015 1:48:45 PM	19882
Toluene	ND	0.035		mg/Kg	1	6/24/2015 1:48:45 PM	19882
Ethylbenzene	ND	0.035		mg/Kg	1	6/24/2015 1:48:45 PM	19882
Xylenes, Total	ND	0.070		mg/Kg	1	6/24/2015 1:48:45 PM	19882
Surr: 4-Bromofluorobenzene	85.7	80-120		%REC	1	6/24/2015 1:48:45 PM	19882

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	Page 5 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-6 E Wall 4 0-7'**Project:** 2C-85**Collection Date:** 6/23/2015 9:10:00 AM**Lab ID:** 1506A92-006**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 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	10		mg/Kg	1	6/24/2015 11:42:54 AM	19901
Surr: DNOP	102	57.9-140		%REC	1	6/24/2015 11:42:54 AM	19901
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	6/24/2015 2:17:26 PM	19882
Surr: BFB	84.4	75.4-113		%REC	1	6/24/2015 2:17:26 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.035		mg/Kg	1	6/24/2015 2:17:26 PM	19882
Toluene	ND	0.035		mg/Kg	1	6/24/2015 2:17:26 PM	19882
Ethylbenzene	ND	0.035		mg/Kg	1	6/24/2015 2:17:26 PM	19882
Xylenes, Total	ND	0.070		mg/Kg	1	6/24/2015 2:17:26 PM	19882
Surr: 4-Bromofluorobenzene	86.2	80-120		%REC	1	6/24/2015 2:17:26 PM	19882

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	Page 6 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-7 E Wall 5 0-9'

Project: 2C-85

Collection Date: 6/23/2015 9:12:00 AM

Lab ID: 1506A92-007

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 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	9.8		mg/Kg	1	6/24/2015 12:09:51 PM	19901
Surr: DNOP	96.4	57.9-140		%REC	1	6/24/2015 12:09:51 PM	19901
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	6/24/2015 2:46:08 PM	19882
Surr: BFB	84.9	75.4-113		%REC	1	6/24/2015 2:46:08 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.031		mg/Kg	1	6/24/2015 2:46:08 PM	19882
Toluene	ND	0.031		mg/Kg	1	6/24/2015 2:46:08 PM	19882
Ethylbenzene	ND	0.031		mg/Kg	1	6/24/2015 2:46:08 PM	19882
Xylenes, Total	ND	0.061		mg/Kg	1	6/24/2015 2:46:08 PM	19882
Surr: 4-Bromofluorobenzene	86.7	80-120		%REC	1	6/24/2015 2:46:08 PM	19882

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	Page 7 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-8 E Wall 6 0-9'**Project:** 2C-85**Collection Date:** 6/23/2015 9:14:00 AM**Lab ID:** 1506A92-008**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	2.9		mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Surr: BFB	108	67.4-150		%REC	1	6/24/2015 3:30:55 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/24/2015 12:36:42 PM	19901
Surr: DNOP	92.2	57.9-140		%REC	1	6/24/2015 12:36:42 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.029		mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Toluene	ND	0.029		mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Ethylbenzene	ND	0.029		mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Xylenes, Total	ND	0.059		mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Surr: 1,2-Dichloroethane-d4	107	70-130		%REC	1	6/24/2015 3:30:55 PM	R27055
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	6/24/2015 3:30:55 PM	R27055
Surr: Dibromofluoromethane	114	70-130		%REC	1	6/24/2015 3:30:55 PM	R27055
Surr: Toluene-d8	100	70-130		%REC	1	6/24/2015 3:30:55 PM	R27055

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
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-9 W Wall 1 0-7'**Project:** 2C-85**Collection Date:** 6/23/2015 9:16:00 AM**Lab ID:** 1506A92-009**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Surr: BFB	104	67.4-150		%REC	1	6/24/2015 3:58:36 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/24/2015 1:05:30 PM	19901
Surr: DNOP	95.1	57.9-140		%REC	1	6/24/2015 1:05:30 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.034		mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Toluene	ND	0.034		mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Ethylbenzene	ND	0.034		mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Xylenes, Total	ND	0.069		mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	6/24/2015 3:58:36 PM	R27055
Surr: 4-Bromofluorobenzene	97.1	70-130		%REC	1	6/24/2015 3:58:36 PM	R27055
Surr: Dibromofluoromethane	110	70-130		%REC	1	6/24/2015 3:58:36 PM	R27055
Surr: Toluene-d8	98.3	70-130		%REC	1	6/24/2015 3:58:36 PM	R27055

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

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**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-10 W Wall 2 0-7'**Project:** 2C-85**Collection Date:** 6/23/2015 9:18:00 AM**Lab ID:** 1506A92-010**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>cadg</b>
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	6/24/2015 1:10:27 PM	R27056
Surr: BFB	109	67.4-150		%REC	1	6/24/2015 1:10:27 PM	R27056
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/24/2015 1:32:36 PM	19901
Surr: DNOP	90.3	57.9-140		%REC	1	6/24/2015 1:32:36 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>cadg</b>
Benzene	ND	0.032		mg/Kg	1	6/24/2015 1:10:27 PM	19882
Toluene	ND	0.032		mg/Kg	1	6/24/2015 1:10:27 PM	19882
Ethylbenzene	ND	0.032		mg/Kg	1	6/24/2015 1:10:27 PM	19882
Xylenes, Total	ND	0.064		mg/Kg	1	6/24/2015 1:10:27 PM	19882
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	6/24/2015 1:10:27 PM	19882
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	6/24/2015 1:10:27 PM	19882
Surr: Dibromofluoromethane	106	70-130		%REC	1	6/24/2015 1:10:27 PM	19882
Surr: Toluene-d8	100	70-130		%REC	1	6/24/2015 1:10:27 PM	19882

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	Page 10 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-11 W Wall 3 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:20:00 AM

Lab ID: 1506A92-011

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: cadg
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	6/24/2015 1:39:14 PM	R27056
Surr: BFB	107	67.4-150		%REC	1	6/24/2015 1:39:14 PM	R27056
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/24/2015 1:59:51 PM	19901
Surr: DNOP	94.1	57.9-140		%REC	1	6/24/2015 1:59:51 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: cadg
Benzene	ND	0.044		mg/Kg	1	6/24/2015 1:39:14 PM	19882
Toluene	ND	0.044		mg/Kg	1	6/24/2015 1:39:14 PM	19882
Ethylbenzene	ND	0.044		mg/Kg	1	6/24/2015 1:39:14 PM	19882
Xylenes, Total	ND	0.089		mg/Kg	1	6/24/2015 1:39:14 PM	19882
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	6/24/2015 1:39:14 PM	19882
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	6/24/2015 1:39:14 PM	19882
Surr: Dibromofluoromethane	106	70-130		%REC	1	6/24/2015 1:39:14 PM	19882
Surr: Toluene-d8	93.5	70-130		%REC	1	6/24/2015 1:39:14 PM	19882

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	Page 11 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-12 W Wall 4 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:22:00 AM

Lab ID: 1506A92-012

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>cadg</b>
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	6/24/2015 2:08:01 PM	R27056
Surr: BFB	104	67.4-150		%REC	1	6/24/2015 2:08:01 PM	R27056
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/24/2015 10:17:22 AM	19901
Surr: DNOP	90.5	57.9-140		%REC	1	6/24/2015 10:17:22 AM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>cadg</b>
Benzene	ND	0.039		mg/Kg	1	6/24/2015 2:08:01 PM	19882
Toluene	ND	0.039		mg/Kg	1	6/24/2015 2:08:01 PM	19882
Ethylbenzene	ND	0.039		mg/Kg	1	6/24/2015 2:08:01 PM	19882
Xylenes, Total	ND	0.078		mg/Kg	1	6/24/2015 2:08:01 PM	19882
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	6/24/2015 2:08:01 PM	19882
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	6/24/2015 2:08:01 PM	19882
Surr: Dibromofluoromethane	108	70-130		%REC	1	6/24/2015 2:08:01 PM	19882
Surr: Toluene-d8	91.8	70-130		%REC	1	6/24/2015 2:08:01 PM	19882

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	Page 12 of 31
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit	
	O RSD is greater than RSDlimit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S Spike Recovery outside accepted recovery limits		



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-13 W Wall 5 0-9'**Project:** 2C-85**Collection Date:** 6/23/2015 9:24:00 AM**Lab ID:** 1506A92-013**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>cadg</b>
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	6/24/2015 2:36:50 PM	R27056
Surr: BFB	108	67.4-150		%REC	1	6/24/2015 2:36:50 PM	R27056
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/24/2015 10:45:36 AM	19901
Surr: DNOP	85.2	57.9-140		%REC	1	6/24/2015 10:45:36 AM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>cadg</b>
Benzene	ND	0.042		mg/Kg	1	6/24/2015 2:36:50 PM	19882
Toluene	ND	0.042		mg/Kg	1	6/24/2015 2:36:50 PM	19882
Ethylbenzene	ND	0.042		mg/Kg	1	6/24/2015 2:36:50 PM	19882
Xylenes, Total	ND	0.084		mg/Kg	1	6/24/2015 2:36:50 PM	19882
Surr: 1,2-Dichloroethane-d4	99.6	70-130		%REC	1	6/24/2015 2:36:50 PM	19882
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	6/24/2015 2:36:50 PM	19882
Surr: Dibromofluoromethane	111	70-130		%REC	1	6/24/2015 2:36:50 PM	19882
Surr: Toluene-d8	97.3	70-130		%REC	1	6/24/2015 2:36:50 PM	19882

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	Page 13 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-14 W Wall 6 0-9'**Project:** 2C-85**Collection Date:** 6/23/2015 9:26:00 AM**Lab ID:** 1506A92-014**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>cadg</b>
Gasoline Range Organics (GRO)	ND	5.3		mg/Kg	1	6/24/2015 3:05:41 PM	R27056
Surr: BFB	108	67.4-150		%REC	1	6/24/2015 3:05:41 PM	R27056
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/24/2015 11:06:49 AM	19901
Surr: DNOP	82.1	57.9-140		%REC	1	6/24/2015 11:06:49 AM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>cadg</b>
Benzene	ND	0.053		mg/Kg	1	6/24/2015 3:05:41 PM	19882
Toluene	ND	0.053		mg/Kg	1	6/24/2015 3:05:41 PM	19882
Ethylbenzene	ND	0.053		mg/Kg	1	6/24/2015 3:05:41 PM	19882
Xylenes, Total	ND	0.11		mg/Kg	1	6/24/2015 3:05:41 PM	19882
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%REC	1	6/24/2015 3:05:41 PM	19882
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	6/24/2015 3:05:41 PM	19882
Surr: Dibromofluoromethane	103	70-130		%REC	1	6/24/2015 3:05:41 PM	19882
Surr: Toluene-d8	94.4	70-130		%REC	1	6/24/2015 3:05:41 PM	19882

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

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**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-15 Base S 9'**Project:** 2C-85**Collection Date:** 6/23/2015 9:28:00 AM**Lab ID:** 1506A92-015**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: cadg
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	6/24/2015 3:34:33 PM	R27056
Surr: BFB	113	67.4-150		%REC	1	6/24/2015 3:34:33 PM	R27056
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/24/2015 11:28:02 AM	19901
Surr: DNOP	89.1	57.9-140		%REC	1	6/24/2015 11:28:02 AM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: cadg
Benzene	ND	0.044		mg/Kg	1	6/24/2015 3:34:33 PM	19882
Toluene	ND	0.044		mg/Kg	1	6/24/2015 3:34:33 PM	19882
Ethylbenzene	ND	0.044		mg/Kg	1	6/24/2015 3:34:33 PM	19882
Xylenes, Total	ND	0.089		mg/Kg	1	6/24/2015 3:34:33 PM	19882
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%REC	1	6/24/2015 3:34:33 PM	19882
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	6/24/2015 3:34:33 PM	19882
Surr: Dibromofluoromethane	105	70-130		%REC	1	6/24/2015 3:34:33 PM	19882
Surr: Toluene-d8	99.4	70-130		%REC	1	6/24/2015 3:34:33 PM	19882

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

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**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-16 Base S.C. 7'

Project: 2C-85

Collection Date: 6/23/2015 9:30:00 AM

Lab ID: 1506A92-016

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Surr: BFB	99.8	67.4-150		%REC	1	6/24/2015 11:49:56 AM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/24/2015 2:44:22 PM	19901
Surr: DNOP	87.8	57.9-140		%REC	1	6/24/2015 2:44:22 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.044		mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Toluene	ND	0.044		mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Ethylbenzene	ND	0.044		mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Xylenes, Total	ND	0.089		mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Surr: 1,2-Dichloroethane-d4	94.6	70-130		%REC	1	6/24/2015 11:49:56 AM	R27055
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	6/24/2015 11:49:56 AM	R27055
Surr: Dibromofluoromethane	103	70-130		%REC	1	6/24/2015 11:49:56 AM	R27055
Surr: Toluene-d8	98.0	70-130		%REC	1	6/24/2015 11:49:56 AM	R27055

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

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**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**Lab Order **1506A92**Date Reported: **6/26/2015****CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-17 Base N.C. 7'**Project:** 2C-85**Collection Date:** 6/23/2015 9:32:00 AM**Lab ID:** 1506A92-017**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Surr: BFB	99.7	67.4-150		%REC	1	6/24/2015 12:17:31 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/24/2015 12:10:36 PM	19901
Surr: DNOP	89.1	57.9-140		%REC	1	6/24/2015 12:10:36 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>DJF</b>
Benzene	ND	0.039		mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Toluene	ND	0.039		mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Ethylbenzene	ND	0.039		mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Xylenes, Total	ND	0.078		mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%REC	1	6/24/2015 12:17:31 PM	R27055
Surr: 4-Bromofluorobenzene	96.1	70-130		%REC	1	6/24/2015 12:17:31 PM	R27055
Surr: Dibromofluoromethane	108	70-130		%REC	1	6/24/2015 12:17:31 PM	R27055
Surr: Toluene-d8	94.2	70-130		%REC	1	6/24/2015 12:17:31 PM	R27055

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

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**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-18 Base N 7'**Project:** 2C-85**Collection Date:** 6/23/2015 9:34:00 AM**Lab ID:** 1506A92-018**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	6/24/2015 12:45:11 PM	R27055
Surr: BFB	98.9	67.4-150		%REC	1	6/24/2015 12:45:11 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/24/2015 12:31:59 PM	19901
Surr: DNOP	90.5	57.9-140		%REC	1	6/24/2015 12:31:59 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.039		mg/Kg	1	6/24/2015 12:45:11 PM	R27055
Toluene	ND	0.039		mg/Kg	1	6/24/2015 12:45:11 PM	R27055
Ethylbenzene	ND	0.039		mg/Kg	1	6/24/2015 12:45:11 PM	R27055
Xylenes, Total	ND	0.077		mg/Kg	1	6/24/2015 12:45:11 PM	R27055
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	6/24/2015 12:45:11 PM	R27055
Surr: 4-Bromofluorobenzene	93.5	70-130		%REC	1	6/24/2015 12:45:11 PM	R27055
Surr: Dibromofluoromethane	110	70-130		%REC	1	6/24/2015 12:45:11 PM	R27055
Surr: Toluene-d8	93.0	70-130		%REC	1	6/24/2015 12:45:11 PM	R27055

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	Page 18 of 31
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-19 S.P. 1**Project:** 2C-85**Collection Date:** 6/23/2015 9:36:00 AM**Lab ID:** 1506A92-019**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Surr: BFB	104	67.4-150		%REC	1	6/24/2015 1:12:45 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/24/2015 12:53:13 PM	19901
Surr: DNOP	92.5	57.9-140		%REC	1	6/24/2015 12:53:13 PM	19901
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.046		mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Toluene	ND	0.046		mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Ethylbenzene	ND	0.046		mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Xylenes, Total	ND	0.091		mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	6/24/2015 1:12:45 PM	R27055
Surr: 4-Bromofluorobenzene	93.6	70-130		%REC	1	6/24/2015 1:12:45 PM	R27055
Surr: Dibromofluoromethane	107	70-130		%REC	1	6/24/2015 1:12:45 PM	R27055
Surr: Toluene-d8	93.8	70-130		%REC	1	6/24/2015 1:12:45 PM	R27055

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-20 S.P. 2

Project: 2C-85

Collection Date: 6/23/2015 9:38:00 AM

Lab ID: 1506A92-020

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Surr: BFB	98.8	67.4-150		%REC	1	6/24/2015 1:40:22 PM	R27055
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/24/2015 1:14:33 PM	19901
Surr: DNOP	89.7	57.9-140		%REC	1	6/24/2015 1:14:33 PM	19901
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.048		mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Toluene	ND	0.048		mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Ethylbenzene	ND	0.048		mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Xylenes, Total	ND	0.097		mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	6/24/2015 1:40:22 PM	R27055
Surr: 4-Bromofluorobenzene	95.0	70-130		%REC	1	6/24/2015 1:40:22 PM	R27055
Surr: Dibromofluoromethane	108	70-130		%REC	1	6/24/2015 1:40:22 PM	R27055
Surr: Toluene-d8	95.6	70-130		%REC	1	6/24/2015 1:40:22 PM	R27055

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

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

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



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-21 S.P. 3**Project:** 2C-85**Collection Date:** 6/23/2015 9:40:00 AM**Lab ID:** 1506A92-021**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Surr: BFB	104	67.4-150		%REC	1	6/24/2015 2:07:56 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/24/2015 3:05:42 PM	19902
Surr: DNOP	83.8	57.9-140		%REC	1	6/24/2015 3:05:42 PM	19902
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.045		mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Toluene	ND	0.045		mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Ethylbenzene	ND	0.045		mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Xylenes, Total	ND	0.091		mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	6/24/2015 2:07:56 PM	R27055
Surr: 4-Bromofluorobenzene	98.1	70-130		%REC	1	6/24/2015 2:07:56 PM	R27055
Surr: Dibromofluoromethane	103	70-130		%REC	1	6/24/2015 2:07:56 PM	R27055
Surr: Toluene-d8	97.7	70-130		%REC	1	6/24/2015 2:07:56 PM	R27055

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

**CLIENT:** Souder, Miller and Associates**Client Sample ID:** SC-22 S.P. 4**Project:** 2C-85**Collection Date:** 6/23/2015 9:42:00 AM**Lab ID:** 1506A92-022**Matrix:** SOIL**Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Surr: BFB	107	67.4-150		%REC	1	6/24/2015 2:35:34 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/24/2015 2:01:30 PM	19902
Surr: DNOP	90.6	57.9-140		%REC	1	6/24/2015 2:01:30 PM	19902
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.046		mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Toluene	ND	0.046		mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Ethylbenzene	ND	0.046		mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Xylenes, Total	ND	0.092		mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	6/24/2015 2:35:34 PM	R27055
Surr: 4-Bromofluorobenzene	99.4	70-130		%REC	1	6/24/2015 2:35:34 PM	R27055
Surr: Dibromofluoromethane	104	70-130		%REC	1	6/24/2015 2:35:34 PM	R27055
Surr: Toluene-d8	96.5	70-130		%REC	1	6/24/2015 2:35:34 PM	R27055

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**

Lab Order 1506A92

Date Reported: 6/26/2015

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-23 S.P. 5

Project: 2C-85

Collection Date: 6/23/2015 9:44:00 AM

Lab ID: 1506A92-023

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	6/24/2015 3:03:14 PM	R27055
Surr: BFB	108	67.4-150		%REC	1	6/24/2015 3:03:14 PM	R27055
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/24/2015 2:22:55 PM	19902
Surr: DNOP	94.4	57.9-140		%REC	1	6/24/2015 2:22:55 PM	19902
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.051		mg/Kg	1	6/24/2015 3:03:14 PM	R27055
Toluene	ND	0.051		mg/Kg	1	6/24/2015 3:03:14 PM	R27055
Ethylbenzene	ND	0.051		mg/Kg	1	6/24/2015 3:03:14 PM	R27055
Xylenes, Total	ND	0.10		mg/Kg	1	6/24/2015 3:03:14 PM	R27055
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	6/24/2015 3:03:14 PM	R27055
Surr: 4-Bromofluorobenzene	93.8	70-130		%REC	1	6/24/2015 3:03:14 PM	R27055
Surr: Dibromofluoromethane	108	70-130		%REC	1	6/24/2015 3:03:14 PM	R27055
Surr: Toluene-d8	102	70-130		%REC	1	6/24/2015 3:03:14 PM	R27055

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

**Qualifiers:**

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	MB-19902	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	19902	RunNo:	27043					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	807981	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	9.1		10.00		90.9	57.9	140			

Sample ID	LCS-19902	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	19902	RunNo:	27043					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	807984	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.2	57.4	139			
Surr: DNOP	4.5		5.000		90.3	57.9	140			

Sample ID	MB-19901	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	19901	RunNo:	27044					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	808008	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	9.3		10.00		92.8	57.9	140			

Sample ID	LCS-19901	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	19901	RunNo:	27044					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	808009	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.3	57.4	139			
Surr: DNOP	5.0		5.000		101	57.9	140			

Sample ID	1506A92-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1 N Wall 0-7'	Batch ID:	19901	RunNo:	27044					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	808326	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.9	49.55	8.242	81.3	42.3	146			
Surr: DNOP	4.6		4.955		93.2	57.9	140			

Sample ID	1506A92-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1 N Wall 0-7'	Batch ID:	19901	RunNo:	27044					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	808394	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

### Qualifiers:

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- S Spike Recovery outside accepted recovery limits
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- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	1506A92-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1 N Wall 0-7'	Batch ID:	19901	RunNo:	27044					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	808394	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.6	47.85	8.242	90.0	42.3	146	5.55	28.9	
Surr: DNOP	4.9		4.785		103	57.9	140	0	0	

Sample ID	1506A92-021AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-21 S.P. 3	Batch ID:	19902	RunNo:	27043					
Prep Date:	6/24/2015	Analysis Date:	6/24/2015	SeqNo:	808716	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.9	49.31	0	81.5	42.3	146			
Surr: DNOP	4.4		4.931		90.2	57.9	140			

Sample ID	1506A92-021AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	SC-21 S.P. 3		Batch ID:	19902		RunNo:	27043				
Prep Date:	6/24/2015		Analysis Date:	6/24/2015		SeqNo:	808717		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	37	9.6	48.12	0	77.3	42.3	146	7.67	28.9		
Surr: DNOP	4.1		4.812		85.8	57.9	140	0	0		

Sample ID: <b>MB-19850</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>19850</b>	RunNo: <b>27044</b>								
Prep Date: <b>6/22/2015</b>	Analysis Date: <b>6/24/2015</b>	SeqNo: <b>809147</b>			Units: <b>%REC</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	57.9	140			

Sample ID	LCS-19850	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID:	LCSS	Batch ID: 19850		RunNo: 27044						
Prep Date:	6/22/2015	Analysis Date: 6/24/2015		SeqNo: 809148		Units: %REC				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.4		5.000		109	57.9	140			

### Qualifiers:

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- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	MB-19882		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	19882		RunNo:	27049				
Prep Date:	6/23/2015		Analysis Date:	6/24/2015		SeqNo:	808572		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	840		1000		84.2	75.4	113				

Sample ID	LCS-19882		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 19882		RunNo: 27049					
Prep Date:	6/23/2015		Analysis Date: 6/24/2015		SeqNo: 808573		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	98.6	64	130			
Surr: BFB	920		1000		92.3	75.4	113			

Sample ID	1506A92-001AMS		SampType:	MS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	SC-1 N Wall 0-7'		Batch ID:	19882		RunNo:	27049				
Prep Date:			Analysis Date:	6/24/2015		SeqNo:	808574		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	18	3.3	16.60	0	107	47.9	144				
Surr: BFB	620		664.0		93.3	75.4	113				

Sample ID	1506A92-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	SC-1 N Wall 0-7'		Batch ID:	19882		RunNo:	27049				
Prep Date:			Analysis Date:	6/24/2015		SeqNo:	808575		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	17	3.3	16.60	0	103	47.9	144	3.53	29.9		
Surr: BFB	620		664.0		92.8	75.4	113	0	0		

### Qualifiers:

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- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	MB-19882		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	19882		RunNo:	27049			
Prep Date:	6/23/2015		Analysis Date:	6/24/2015		SeqNo:	808592		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	0.86		1.000		86.4	80	120			

Sample ID	LCS-19882		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	19882		RunNo:	27049			
Prep Date:	6/23/2015		Analysis Date:	6/24/2015		SeqNo:	808593		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	105	76.6	128			
Toluene	1.0	0.050	1.000	0	102	75	124			
Ethylbenzene	1.0	0.050	1.000	0	104	79.5	126			
Xylenes, Total	3.1	0.10	3.000	0	103	78.8	124			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.5	80	120			

Sample ID	1506A92-002AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SC-2 S Wall 0-7'		Batch ID:	19882		RunNo:	27049			
Prep Date:			Analysis Date:	6/24/2015		SeqNo:	808594		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.68	0.031	0.6173	0	110	69.2	126			
Toluene	0.65	0.031	0.6173	0	105	65.6	128			
Ethylbenzene	0.67	0.031	0.6173	0	109	65.5	138			
Xylenes, Total	2.0	0.062	1.852	0	108	63	139			
Surr: 4-Bromofluorobenzene	0.59		0.6173		96.4	80	120			

Sample ID	1506A92-002AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SC-2 S Wall 0-7'		Batch ID:	19882		RunNo:	27049			
Prep Date:			Analysis Date:	6/24/2015		SeqNo:	808595		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.67	0.031	0.6173	0	108	69.2	126	1.31	18.5	
Toluene	0.65	0.031	0.6173	0	106	65.6	128	0.562	20.6	
Ethylbenzene	0.67	0.031	0.6173	0	109	65.5	138	0.267	20.1	
Xylenes, Total	2.0	0.062	1.852	0	108	63	139	0.722	21.1	
Surr: 4-Bromofluorobenzene	0.60		0.6173		96.9	80	120	0	0	

### Qualifiers:

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- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	mb-19882		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles Short List			
Client ID:	PBS		Batch ID:	19882		RunNo:	27056			
Prep Date:	6/23/2015		Analysis Date:	6/25/2015		SeqNo:	808766		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: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: Toluene-d8	0.50		0.5000		99.5	70	130			

Sample ID	Ics-19882		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles Short List			
Client ID:	LCSS		Batch ID:	19882		RunNo:	27056			
Prep Date:	6/23/2015		Analysis Date:	6/25/2015		SeqNo:	808775		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	70	130			
Toluene	0.97	0.050	1.000	0	97.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		112	70	130			
Surr: Toluene-d8	0.48		0.5000		95.4	70	130			

Sample ID	rb1		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles Short List			
Client ID:	PBS		Batch ID:	R27055		RunNo:	27055			
Prep Date:			Analysis Date:	6/24/2015		SeqNo:	808810		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: 1,2-Dichloroethane-d4	0.47		0.5000		94.7	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			

Sample ID	100ng Ics		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles Short List			
Client ID:	LCSS		Batch ID:	R27055		RunNo:	27055			
Prep Date:			Analysis Date:	6/24/2015		SeqNo:	808818		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

## Qualifiers:

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



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID: R27055			RunNo: 27055					
Prep Date:		Analysis Date: 6/24/2015			SeqNo: 808818		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	108	70	130			
Toluene	1.1	0.050	1.000	0	109	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		111	70	130			
Surr: Toluene-d8	0.50		0.5000		99.7	70	130			

Sample ID	1506092-017ams	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	BatchQC	Batch ID:	R27055	RunNo:	27055					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808840	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.039	0.7770	0	104	57.8	132			
Toluene	0.83	0.039	0.7770	0	107	54.8	139			
Surr: 1,2-Dichloroethane-d4	0.40		0.3885		103	70	130			
Surr: 4-Bromofluorobenzene	0.36		0.3885		93.6	70	130			
Surr: Dibromofluoromethane	0.42		0.3885		107	70	130			
Surr: Toluene-d8	0.38		0.3885		97.3	70	130			

Sample ID	1506092-017amsd	SampType:	MSD	TestCode: EPA Method 8260B: Volatiles Short List						
Client ID:	BatchQC	Batch ID:	R27055	RunNo: 27055						
Prep Date:		Analysis Date:	6/24/2015	SeqNo: 808854			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.78	0.039	0.7770	0	101	57.8	132	3.24	20	
Toluene	0.79	0.039	0.7770	0	102	54.8	139	4.54	20	
Surr: 1,2-Dichloroethane-d4	0.41		0.3885		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.37		0.3885		95.4	70	130	0	0	
Surr: Dibromofluoromethane	0.42		0.3885		109	70	130	0	0	
Surr: Toluene-d8	0.39		0.3885		99.9	70	130	0	0	

## Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R27055	RunNo:	27055					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808860	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	490		500.0		97.5	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R27055	RunNo:	27055					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808868	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	79.9	135			
Surr: BFB	490		500.0		98.4	67.4	150			

Sample ID	1506092-016ams	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	BatchQC	Batch ID:	R27055	RunNo:	27055					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808869	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.4	22.12	0	106	65.2	156			
Surr: BFB	480		442.5		108	67.4	150			

Sample ID	1506092-016amsd	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	BatchQC	Batch ID:	R27055	RunNo:	27055					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808870	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.4	22.12	0	108	65.2	156	1.61	20	
Surr: BFB	480		442.5		108	67.4	150	0	0	

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R27056	RunNo:	27056					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808871	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		99.4	67.4	150			

Sample ID	2.5ug gro lcs1	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R27056	RunNo:	27056					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808872	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		99.4	67.4	150			

## Qualifiers:

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

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



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client: Souder, Miller and Associates

Project: 2C-85

Sample ID	2.5ug gro lcs1	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R27056	RunNo:	27056					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	808872	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.1	79.9	135			
Surr: BFB	500		500.0		101	67.4	150			

## Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



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: SMA-FARM

Work Order Number: 1506A92

RcptNo: 1

Received by/date:

AT 06/24/15

Logged By: Anne Thorne

6/24/2015 7:20:00 AM

*Anne Thorne*

Completed By: Anne Thorne

6/24/2015

*Anne Thorne*

Reviewed By:

*AT*

06/24/15

### 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?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

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?

Yes ☒

No ☐

(If no, notify customer for authorization.)

# 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
2	1.0	Good	Yes			



Client: SMA

Mailing Address: 401 W Broadway  
Farmington, NM, 87401

Phone #: 505 325 7535

Email or Fax#: Steven.Moskal@Spudsmiller

2A/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

### Accreditation

☐ NELAP      ☐ Other \_\_\_\_\_

□ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush *same day*

Project Name:

2C-85

Project #:

Project Manager:

Sampler: J. Sprague

On Ice: ☒ Yes ☐ No

Sample Temperature: 9.0

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
-------	-------	------------------	--------------	------	------

13/15	1800	L-ES	Christa Walte	6/23/15	1860
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Date:	Time:	Relinquished by:	Received by:	Date	Time
-------	-------	------------------	--------------	------	------

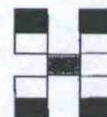
23/1/5 1850 Christian Liberman 06/24/15 173

Remarks: Tawnee ERCD

→

Please copy

www.samsara @ sandhillers.com



## 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]



# Chain-of-Custody Record

Client: SMA

Mailing Address: 401 W Broadway

Farmington, NM, 87401

Phone #: 505 325 7535

email or Fax#: Steve.Moskal@SoudersMiller.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☐ Standard ☒ Rush Same Day

Project Name:

2C-85

Project #:

21546

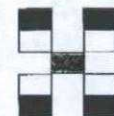
Project Manager:

Steve Moskal

Sampler: J. Sprague

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
6/23	0924	Soil	SC-13 w wall 5 0-9'	1 4oz Mod Kl	Mod Kl	1506A92	X	X									
	0926		SC-14 w wall 6 0-9'			213	X	X									
	0928		SC-15 Base S 0-9'			214	X	X									
	0930		SC-16 Base S.C. 0-9'			215	X	X									
	0932		SC-17 Base N.C. 0-9'			216	X	X									
	0934		SC-18 Base N 7'			217	X	X									
	0936		SC-19 S.P. 1			218	X	X									
	0938		SC-20 S.P. 2			219	X	X									
	0940		SC-21 S.P. 3			220	X	X									
	0942		SC-22 S.P. 4			222	X	X									
	0944		SC-23 S.P. 5			223	X	X									
						224	X	X									

Date: 6/23/15 Time: 1850 Relinquished by: J. E. Sprague

Received by: Christy Wade Date: 6/23/15 Time: 1800

Remarks: Invoice EPCO

Date: 6/23/15 Time: 1850 Relinquished by: Christy Wade

Received by: Chris Wade Date: 6/24/15 Time: 0720

Please copy

Date: 6/23/15 Time: 1850 Relinquished by: Christy Wade

Received by: Chris Wade Date: 6/24/15 Time: 0720

Jesse. Sprague@SoudersMiller.com



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

AUG 13 2015

Form C-141  
Revised August 8, 2011

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

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long	
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286	
Facility Name: Jicarilla 126S #13	Facility Type: Natural Gas Gathering Pipeline	
Surface Owner: Jicarilla Apache Tribe	Mineral Owner: Jicarilla Apache Tribe	API No.

**LOCATION OF RELEASE**

Unit Letter <b>L</b>	Section <b>12</b>	Township <b>24 N</b>	Range <b>4W</b>	Feet from the <b>031</b>	North <del>South</del> Line	Feet from the <b>1200</b>	East <del>West</del> Line	County <b>Rio Arriba</b>
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Latitude 36.323088 Longitude -107.202824

**NATURE OF RELEASE**

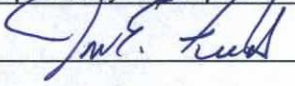
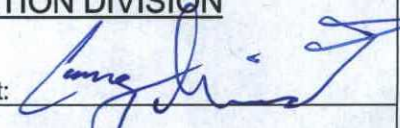
Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release <b>Unknown</b>	Volume Recovered: <b>None</b>
Source of Release: Leaking Valve	Date and Hour of Occurrence: <b>7/28/15 @ 10:25 a.m.</b>	Date and Hour of Discovery: <b>7/28/15 @ 11:15 a.m.</b>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy Notification - Cory Smith - NMOCD, Hobson Sandoval - JAEPO	
By Whom? Thomas Long	Date and Time 7/29/15 9:48 a.m.	
Was a Watercourse Reached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.\* Fluids were released to the ground surface and flowed down the hill into a small ephemeral wash.

Describe Cause of Problem and Remedial Action: On July 28, 2015, Enterprise technicians confirmed a minor gas leak on a valve associated with the Jicarilla 126S #13 pipeline. Fluids were released to the ground surface. The pipeline was isolated, blown down, locked out and tagged out for safety and environmental concerns. Repairs and remediation are in the scheduling process.

Describe Area Affected and Cleanup Action: Repairs and remediation are in the scheduling process... A third party environmental contractor is overseeing excavation activities and will collect samples for determination of impacted soils. 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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Environmental	Approval Date: <b>8/18/15</b>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>8/6/2015</b>	Phone: (713)381-6684	

\* Attach Additional Sheets If Necessary

#NCS 1523031703



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

AUG 14 2015

Form C-141  
Revised August 8, 2011

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

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: Lateral K-51	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: State Of New Mexico	Mineral Owner: State Of New Mexico	API No.
------------------------------------	------------------------------------	---------

### LOCATION OF RELEASE

Unit Letter O	Section 36	Township 26N	Range 6W	Feet from the 860'	North/South Line	Feet from the 1450'	East/West Line	County Rio Arriba
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Latitude 36.438860 Longitude -107.417726

### NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: 7/31/15 @ 2:45 p.m.	Date and Hour of Discovery: 7/31/15 @ 3:35 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy Notification - Cory Smith - NMOCD	
By Whom? Runell Seale	Date and Time 8/8/15 at 7:30 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On July 31, 2015, Enterprise technicians confirmed a minor gas leak on the Lateral K-51 pipeline. The pipeline was isolated, blown down, locked out and tagged out for safety and environmental concerns. Repairs and remediation are currently in progress.

Describe Area Affected and Cleanup Action: On August 7, 2015 during pipeline repairs subsurface contamination was encountered in the excavation. A third party environmental contractor is overseeing excavation activities and will collect samples after remediation activities are complete. 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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Environmental	Approval Date: 8/18/15	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 8-11-2015	Phone: (713)381-6684	

\* Attach Additional Sheets If Necessary

#NLS 1523031446

①



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

AUG 14 2015

Form C-141  
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: Jicarilla F#3	Facility Type: Natural Gas Gathering Pipeline

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

LOCATION OF RELEASE

Unit Letter C	Section 28	Township 26 N	Range 5 W	Feet from the 705	North/South Line	Feet from the 1691	East/West Line	County Rio Arriba
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Latitude 36.462995 Longitude -107.368065

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: 7/31/15 @ 10:36 a.m.	Date and Hour of Discovery: 7/31/15 @ 11:15 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy Notification - Hobson Sandoval - JAEPO	
By Whom? Thomas Long	Date and Time 7/31/15 2:18 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On July 31, 2015, Enterprise technicians confirmed a gas leak on the Jicarilla F#3 pipeline. No surface impacts were observed. The pipeline was isolated, blown down, locked out and tagged out for safety and environmental concerns. Repairs and remediation are in the scheduling process.

Describe Area Affected and Cleanup Action: Repairs and remediation are in the scheduling process. A third party environmental contractor is overseeing excavation activities and will collect samples for determination of impacted soils. 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 Fields</i>	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Director, Environmental	Approval Date: 8/18/15	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 8-10-2015	Phone: (713)381-6684	Site Rank 20

\* Attach Additional Sheets If Necessary

#NCS 1523031141

①



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

State of New Mexico  
Energy Minerals and Natural  
Resources

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

Form C-141  
Revised August 8, 2011

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

**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: Apache Hills #2	Facility Type: Natural Gas Gathering Pipeline

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

**LOCATION OF RELEASE**

Unit Letter N	Section 8	Township 23N	Range 3W	Feet from the	North/South Line	Feet from the	East/West Line	County Rio Arriba
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Latitude 36.23355 Longitude 107.18543

**OIL CONS. DIV DIST. 3**

**NATURE OF RELEASE**

**SEP 25 2015**

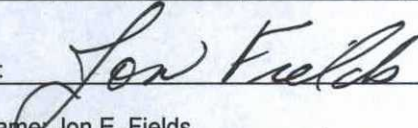
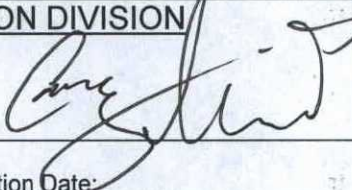
Type of Release: Natural Gas	Volume of Release: 63.25 MCF Gas	Volume Recovered: None
Source of Release: Internal corrosion	Date and Hour of Occurrence: 6/9/2015 @ 3:20 p.m.	Date and Hour of Discovery: 6/9/2015 @ 4:00 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Cory Smith - NMOCD; Hobson Sandoval - JAEPO	
By Whom? Thomas Long	Date and Hour 6/10/2014 @ 7:48 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action: On July 9, 2015, during routine operations a field operation technician identified a natural gas release on the Apache Hills #2 well tie. The pipeline was isolated, depressurized, locked out and tagged out. Repairs were complete on July 21, 2105.

Describe Area Affected and Cleanup Action Taken.\* 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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Field Environmental	Approval Date: 10/21/15	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9-21-2015	Phone: (713)381-6684	

\* Attach Additional Sheets If Necessary

#NCS 1518952955

(39)



**Apache Hills #2  
Pipeline Release Report**

**N36.23344, W107.18544**

**Sec. 8, T23N, R3W**

**Rio Arriba County, New Mexico**

**August 12, 2015**

**OIL CONS. DIV DIST. 3**

**SEP 25 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 Apache Hills #2 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



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**Sean Norris, Area Manager**

Reviewed by:



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

**August 19, 2015**



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### 1 Introduction

The Enterprise Field Services, LLC (Enterprise) Apache Hills #2 pipeline release site is located in Rio Arriba County, New Mexico, north of Jicarilla Road 20. The release of natural gas and condensate was discovered on June 9, 2015, and resulted from a corrosion hole on the 4-inch well tie pipeline for the Apache Hills #2 well site. Site work commenced on July 20, 2015, which included the replacement of approximately 210 feet of the well tie pipeline.

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

### 2 Release Summary

**Site Name** – Apache Hills #2 Pipeline Release

**Location** – Unit Letter M (SW/SW), Section 8, Township 23N, Range 3W

**Release Latitude/Longitude** – N36.23344 and W107.18544, respectively

**Land Jurisdiction** – Jicarilla Apache Nation

**Date Release Discovered** – June 9, 2015

**Agency Notification** – New Mexico Oil Conservation Division (NMOCD),  
Jicarilla Apache Nation Environmental Protection Agency (JANEPO)

**Diameter of pipeline** – 4-inch

**Source of Release** – corrosion hole on the 4-inch pipeline

**Release Contents** – natural gas

**Release Volume** – unknown

**NMOCD Site Ranking** – 10

**Date of Rule Engineering, LLC (Rule) Field Work** – July 21, 2015

**Subcontractor(s)** – West States Energy Contractors, Inc. (West States)

**Disposal Facility** – Backfilled in place

### 3 NMOCD Site Ranking

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

Depth to groundwater at the site was estimated to be greater than 100 feet below grade surface (bgs) based on the elevation differential (271 feet) between the release location and the nearest wash (approximately 2 miles to the south).



A review of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System identified no water wells within a 1,000 foot radius of the location.

### 4 Field Activities

On July 20, 2015, Enterprise, West States, and Rule personnel were onsite for the initiation of pipeline repair activities. West States provided heavy equipment operation and Rule personnel provided excavation guidance. On July 21, 2015, based on visual observations and field screening results, Rule personnel collected eight confirmation samples (SC-1 through SC-8) from the sidewalls and base of the excavation. Additionally, one composite sample (Stockpile) was collected from the stockpiled soils to determine reuse as backfill material. Repair of the line consisted of the replacement of approximately 210 feet of the well tie pipeline from the meter at the well pad to the connection with the lateral line. The final repair excavation measured approximately 55 feet by 4 feet by 4 to 5 feet in depth. Figure 3 provides the locations and results of the soil samples collected.

A photograph log is included in Appendix A.

### 5 Soil Sampling

Rule collected confirmation soil samples from the sidewalls and base of the excavation. Soil samples SC-1 through SC-8 were collected on July 21, 2015. Each confirmation soil sample is a representative composite of material collected from separate locations within the sample area. Additionally, Rule collected a composite sample from the stockpiled soils (Stockpile) on July 21, 2015.

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

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

## **6 Conclusions**

The release of natural gas and condensate was discovered on June 9, 2015, and resulted from a corrosion hole on the 4-inch well tie pipeline for the Apache Hills #2 well site. Eight confirmation soil samples were collected from the sidewalls and base of the repair excavation and one composite sample was collected from the stockpiled soils on July 21, 2015, for laboratory analysis of BTEX and TPH. The final excavation measured approximately 55 feet by 4 feet by 4 to 5 feet in depth.

Laboratory analytical results for soil confirmation samples (SC-1 through SC-8 and Stockpile) reported benzene and total BTEX concentrations below the NMOCD action levels of 10 mg/kg and 50 mg/kg, respectively. The soil confirmation samples also reported TPH (GRO/DRO) concentrations below the NMOCD action level of 1,000 mg/kg. Action levels are based on a NMOCD site ranking of 10.

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

## **7 Closure and Limitations**

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



## Tables

**Table 1. NMOCD Site Ranking Determination**  
**Apache Hills #2 Pipeline Release San**  
**Juan County, New Mexico Enterprise**  
**Products Operating, LLC**

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Elevation differential between location and wash in Chacon Canyon, south of the location, is 271 feet.	NMOCD Online database, Five Lakes Canyon NW 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 feet radius of location.	NMOSE NMWRRS, Five Lakes Canyon NW Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	Unnamed wash located approximately 714 feet east of location, drains to the wash in Chacon Canyon.	Five Lakes Canyon NW 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-VOCs, Benzene, Total BTEX, and TPH**  
**Apache Hills #2 Pipeline Release**  
**Rio Arriba County, New Mexico**  
**Enterprise Products Operating, LLC**

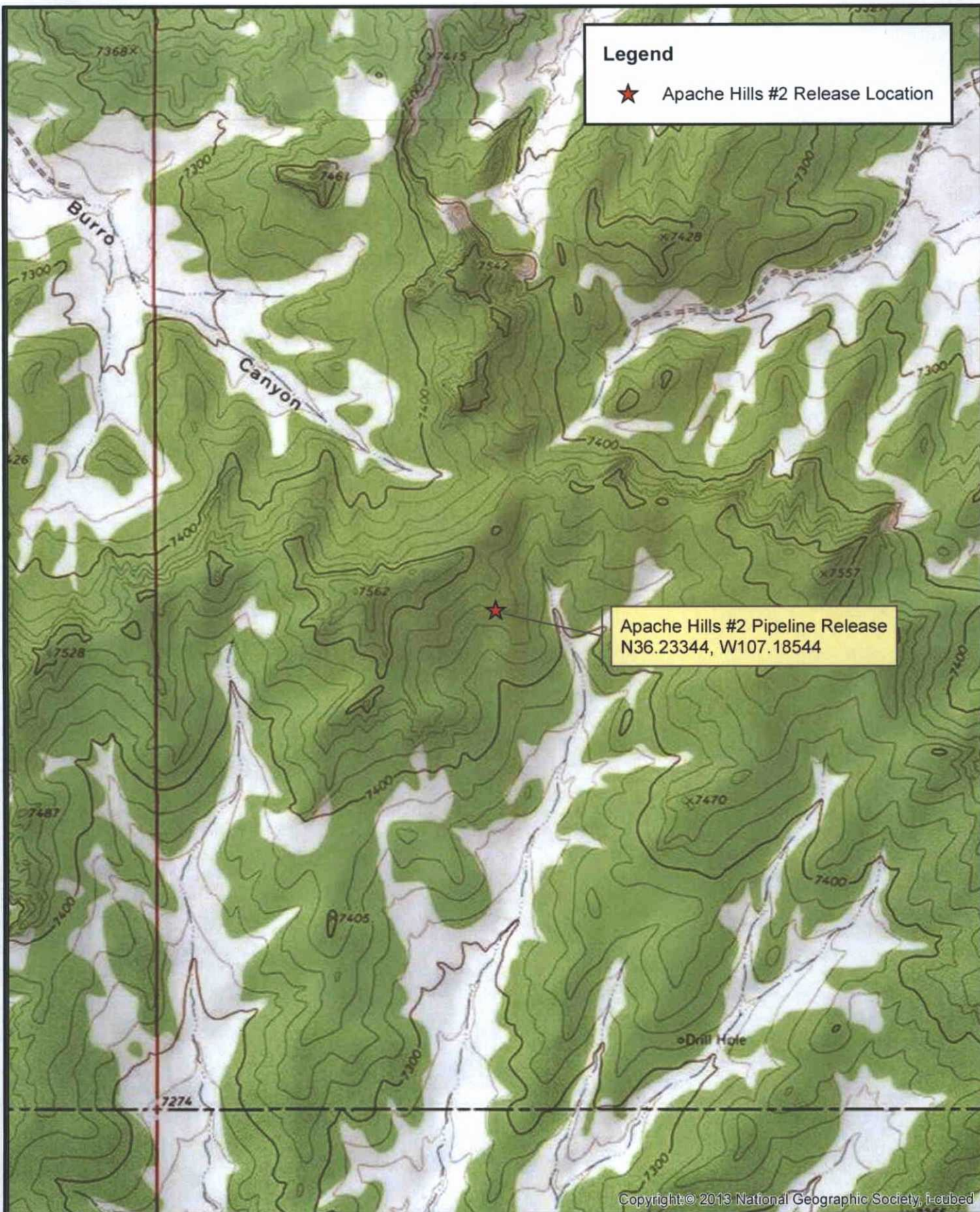
Sample ID	Date	Location	Sample Depth (ft bgs)	VOCs (PID) (ppm)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH-GRO	TPH-DRO
							(mg/kg)	
NMOCD Action Levels*				100	10	50	1,000	
SC-1	7/21/15	South Wall	0 to 5	8.4	<0.049	<0.245	<4.9	<10
SC-2	7/21/15	S. East Wall	0 to 5	59.4	<0.048	<0.240	18	19
SC-3	7/21/15	South Base	5	2,087	0.25	15	290	46
SC-4	7/21/15	S. West Wall	0 to 5	474	0.11	2.2	56	79
SC-5	7/21/15	N. West Wall	0 to 5	123.2	<0.048	0.14	11	18
SC-6	7/21/15	N. East Wall	0 to 5	17.9	<0.048	<0.240	<4.8	11
SC-7	7/21/15	North Base	5	3.4	<0.049	<0.245	<4.9	<9.7
SC-8	7/21/15	North Wall	0 to 5	53.8	<0.048	<0.239	<4.8	79
Stockpile	7/21/15	Stockpile	--	--	0.13	3.4	25	43

Notes: VOCs - volatile organic compounds  
PID - photo-ionization detector  
ft bgs - feet below grade surface  
ppm - parts per million  
mg/kg - milligrams/kilograms

BTEX - benzene, toluene, ethylbenzene, and xylenes  
TPH-GRO - total petroleum hydrocarbons-gasoline range organics  
TPH-DRO - total petroleum hydrocarbons-diesel range organics  
\*NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993)

## Figures





### Legend

★ Apache Hills #2 Release Location

Apache Hills #2 Pipeline Release  
N36.23344, W107.18544

Copyright © 2013 National Geographic Society, i-cubed

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

0 1,000 2,000 3,000 4,000 Feet

### Location

N36.23344, W107.18544  
Rio Arriba County, New Mexico

**Topographic Map**  
Enterprise Products  
Apache Hills #2  
Pipeline Release

Date: 8/4/2015

File: 150804 Apache Hills 2 Topo

Figure: 1





**Legend**

- Road
- ★ Release Location

Apache Hills #2 Pipeline Release  
N36.23344, W107.18544

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

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

0 20 40 60 80 Feet

**Location**

N36.23344, W107.18544  
Rio Arriba County, New Mexico

**Aerial Site Map**  
Enterprise Products  
Apache Hills #2  
Pipeline Release

Date: 8/4/2015

File: 150804 Apache Hills 2 Aerial Site Map

Figure: 2



N36.23344, W107.18544

SC-5  
VOC 123  
Benzene <0.048  
BTEX 0.14  
GRO 11  
DRO 18

SC-7  
VOC 3.4  
Benzene <0.049  
BTEX <0.245  
GRO <4.9  
DRO <9.7

SC-4  
VOC 474  
Benzene 0.11  
BTEX 2.2  
GRO 56  
DRO 79

SC-1  
VOC 8.4  
Benzene <0.049  
BTEX <0.245  
GRO <4.9  
DRO <10

SC-8  
VOC 53.8  
Benzene <0.048  
BTEX <0.239  
GRO <4.8  
DRO 79

SC-6  
VOC 17.9  
Benzene <0.048  
BTEX <0.240  
GRO <4.8  
DRO 11

SC-2  
VOC 59.4  
Benzene <0.048  
BTEX <0.240  
GRO 18  
DRO 19

SC-3  
VOC 2,087  
Benzene 0.25  
BTEX 15  
GRO 290  
DRO 46

#### Legend

- ★ Apache Hills #2 Release Location
- Soil Sample Location
- ..... Extent of Excavation
- Road
- == Pipeline

#### Notes:

VOC= Volatile Organic Compounds  
BTEX= Benzene, Toluene, Ethylbenzene, and Xylenes  
GRO= Gasoline Range Organics  
DRO= Diesel Range Organics

Samples SC-1 through SC-8 are 5 pt. composite samples.  
All samples collected July 21, 2015.  
VOC results in ppm.  
All other results in mg/kg.

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

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

0 10 20 30 40 Feet

#### Location

N36.23344, W107.18544  
Rio Arriba County, New Mexico

**Soil Analytical Map**  
Enterprise Products  
Apache Hills #2  
Pipeline Release


Date: 8/20/2015 File: 150804 Apache Hills 2 Soil Analytical Map


Figure: 3

## Appendix A Photograph Log



**Photograph Log**  
**Apache Hills #2 Pipeline Release**  
**Enterprise Field Services**

Photograph #1	
Client: Enterprise	
Site Name: Apache Hills #2 Pipeline Release	
Date Photo Taken: July 21, 2015	
Location: N36.23344, W107.18544  Sec. 8, T23N, R3W Rio Arriba County, New Mexico	
Photo Taken by: Deborah Watson	Description: View of final pipeline repair excavation, looking south.

Photograph #2	
Client: Enterprise Products	
Site Name:  Apache Hills #2 Pipeline Release	
Date Photo Taken: July 21, 2015	
Location: N36.23344, W107.18544  Sec. 8, T23N, R3W Rio Arriba County, New Mexico	
Photo Taken by: Deborah Watson	Description: View of final pipeline repair excavation, looking north.

# 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)

July 27, 2015

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

RE: Apache Hills #2 Pipeline Release

OrderNo.: 1507970

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 7/22/2015 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

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507970

Date Reported: 7/27/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:25:00 PM

Lab ID: 1507970-001

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/23/2015 2:35:16 PM	20387
Surr: BFB	103	70-130		%REC	1	7/23/2015 2:35:16 PM	20387
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/24/2015 9:31:40 PM	20379
Surr: DNOP	132	57.9-140		%REC	1	7/24/2015 9:31:40 PM	20379
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.049		mg/Kg	1	7/23/2015 2:35:16 PM	20387
Toluene	ND	0.049		mg/Kg	1	7/23/2015 2:35:16 PM	20387
Ethylbenzene	ND	0.049		mg/Kg	1	7/23/2015 2:35:16 PM	20387
Xylenes, Total	ND	0.098		mg/Kg	1	7/23/2015 2:35:16 PM	20387
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	7/23/2015 2:35:16 PM	20387
Surr: 4-Bromofluorobenzene	93.2	70-130		%REC	1	7/23/2015 2:35:16 PM	20387
Surr: Dibromofluoromethane	110	70-130		%REC	1	7/23/2015 2:35:16 PM	20387
Surr: Toluene-d8	95.7	70-130		%REC	1	7/23/2015 2:35:16 PM	20387

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 1507970

Date Reported: 7/27/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:36:00 PM

Lab ID: 1507970-002

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	18	4.8		mg/Kg	1	7/23/2015 3:58:14 PM	20387
Surr: BFB	115	70-130		%REC	1	7/23/2015 3:58:14 PM	20387
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	19	9.8		mg/Kg	1	7/24/2015 9:58:59 PM	20379
Surr: DNOP	111	57.9-140		%REC	1	7/24/2015 9:58:59 PM	20379
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.048		mg/Kg	1	7/23/2015 3:58:14 PM	20387
Toluene	ND	0.048		mg/Kg	1	7/23/2015 3:58:14 PM	20387
Ethylbenzene	ND	0.048		mg/Kg	1	7/23/2015 3:58:14 PM	20387
Xylenes, Total	ND	0.096		mg/Kg	1	7/23/2015 3:58:14 PM	20387
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	7/23/2015 3:58:14 PM	20387
Surr: 4-Bromofluorobenzene	88.8	70-130		%REC	1	7/23/2015 3:58:14 PM	20387
Surr: Dibromofluoromethane	117	70-130		%REC	1	7/23/2015 3:58:14 PM	20387
Surr: Toluene-d8	98.0	70-130		%REC	1	7/23/2015 3:58:14 PM	20387

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.

## Analytical Report

Lab Order 1507970

Date Reported: 7/27/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:42:00 PM

Lab ID: 1507970-003

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	290	25		mg/Kg	5	7/23/2015 4:25:56 PM	20387
Surr: BFB	111	70-130		%REC	5	7/23/2015 4:25:56 PM	20387
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	46	9.7		mg/Kg	1	7/24/2015 10:26:14 PM	20379
Surr: DNOP	116	57.9-140		%REC	1	7/24/2015 10:26:14 PM	20379
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	0.25	0.25		mg/Kg	5	7/23/2015 4:25:56 PM	20387
Toluene	2.7	0.25		mg/Kg	5	7/23/2015 4:25:56 PM	20387
Ethylbenzene	1.4	0.25		mg/Kg	5	7/23/2015 4:25:56 PM	20387
Xylenes, Total	11	0.49		mg/Kg	5	7/23/2015 4:25:56 PM	20387
Surr: 1,2-Dichloroethane-d4	109	70-130		%REC	5	7/23/2015 4:25:56 PM	20387
Surr: 4-Bromofluorobenzene	87.8	70-130		%REC	5	7/23/2015 4:25:56 PM	20387
Surr: Dibromofluoromethane	107	70-130		%REC	5	7/23/2015 4:25:56 PM	20387
Surr: Toluene-d8	97.9	70-130		%REC	5	7/23/2015 4:25:56 PM	20387

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.

## Analytical Report

Lab Order 1507970

Date Reported: 7/27/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:30:00 PM

Lab ID: 1507970-004

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	56	4.9		mg/Kg	1	7/23/2015 4:53:38 PM	20387
Surr: BFB	116	70-130		%REC	1	7/23/2015 4:53:38 PM	20387
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	79	10		mg/Kg	1	7/24/2015 10:53:34 PM	20379
Surr: DNOP	122	57.9-140		%REC	1	7/24/2015 10:53:34 PM	20379
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	0.11	0.049		mg/Kg	1	7/23/2015 4:53:38 PM	20387
Toluene	0.51	0.049		mg/Kg	1	7/23/2015 4:53:38 PM	20387
Ethylbenzene	0.18	0.049		mg/Kg	1	7/23/2015 4:53:38 PM	20387
Xylenes, Total	1.4	0.098		mg/Kg	1	7/23/2015 4:53:38 PM	20387
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	7/23/2015 4:53:38 PM	20387
Surr: 4-Bromofluorobenzene	82.2	70-130		%REC	1	7/23/2015 4:53:38 PM	20387
Surr: Dibromofluoromethane	110	70-130		%REC	1	7/23/2015 4:53:38 PM	20387
Surr: Toluene-d8	97.8	70-130		%REC	1	7/23/2015 4:53:38 PM	20387

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 1507970

Date Reported: 7/27/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:44:00 PM

Lab ID: 1507970-005

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	11	4.8		mg/Kg	1	7/23/2015 5:21:16 PM	20387
Surr: BFB	109	70-130		%REC	1	7/23/2015 5:21:16 PM	20387
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	18	9.8		mg/Kg	1	7/24/2015 11:20:53 PM	20379
Surr: DNOP	121	57.9-140		%REC	1	7/24/2015 11:20:53 PM	20379
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.048		mg/Kg	1	7/23/2015 5:21:16 PM	20387
Toluene	ND	0.048		mg/Kg	1	7/23/2015 5:21:16 PM	20387
Ethylbenzene	ND	0.048		mg/Kg	1	7/23/2015 5:21:16 PM	20387
Xylenes, Total	0.14	0.097		mg/Kg	1	7/23/2015 5:21:16 PM	20387
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	7/23/2015 5:21:16 PM	20387
Surr: 4-Bromofluorobenzene	89.7	70-130		%REC	1	7/23/2015 5:21:16 PM	20387
Surr: Dibromofluoromethane	117	70-130		%REC	1	7/23/2015 5:21:16 PM	20387
Surr: Toluene-d8	98.0	70-130		%REC	1	7/23/2015 5:21:16 PM	20387

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 1507970

Date Reported: 7/27/2015

**CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-6**Project:** Apache Hills #2 Pipeline Release**Collection Date:** 7/21/2015 1:46:00 PM**Lab ID:** 1507970-006**Matrix:** SOIL**Received Date:** 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/23/2015 5:48:53 PM	20387
Surr: BFB	108	70-130		%REC	1	7/23/2015 5:48:53 PM	20387
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	11	10		mg/Kg	1	7/24/2015 11:48:11 PM	20379
Surr: DNOP	121	57.9-140		%REC	1	7/24/2015 11:48:11 PM	20379
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.048		mg/Kg	1	7/23/2015 5:48:53 PM	20387
Toluene	ND	0.048		mg/Kg	1	7/23/2015 5:48:53 PM	20387
Ethylbenzene	ND	0.048		mg/Kg	1	7/23/2015 5:48:53 PM	20387
Xylenes, Total	ND	0.096		mg/Kg	1	7/23/2015 5:48:53 PM	20387
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	7/23/2015 5:48:53 PM	20387
Surr: 4-Bromofluorobenzene	91.7	70-130		%REC	1	7/23/2015 5:48:53 PM	20387
Surr: Dibromofluoromethane	113	70-130		%REC	1	7/23/2015 5:48:53 PM	20387
Surr: Toluene-d8	95.6	70-130		%REC	1	7/23/2015 5:48:53 PM	20387

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 1507970

Date Reported: 7/27/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-7

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:50:00 PM

Lab ID: 1507970-007

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/23/2015 6:16:28 PM	20387
Surr: BFB	104	70-130		%REC	1	7/23/2015 6:16:28 PM	20387
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/25/2015 12:15:30 AM	20379
Surr: DNOP	120	57.9-140		%REC	1	7/25/2015 12:15:30 AM	20379
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.049		mg/Kg	1	7/23/2015 6:16:28 PM	20387
Toluene	ND	0.049		mg/Kg	1	7/23/2015 6:16:28 PM	20387
Ethylbenzene	ND	0.049		mg/Kg	1	7/23/2015 6:16:28 PM	20387
Xylenes, Total	ND	0.098		mg/Kg	1	7/23/2015 6:16:28 PM	20387
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	7/23/2015 6:16:28 PM	20387
Surr: 4-Bromofluorobenzene	90.7	70-130		%REC	1	7/23/2015 6:16:28 PM	20387
Surr: Dibromofluoromethane	113	70-130		%REC	1	7/23/2015 6:16:28 PM	20387
Surr: Toluene-d8	96.4	70-130		%REC	1	7/23/2015 6:16:28 PM	20387

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 1507970

Date Reported: 7/27/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-8

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:55:00 PM

Lab ID: 1507970-008

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/23/2015 6:44:04 PM	20387
Surr: BFB	102	70-130		%REC	1	7/23/2015 6:44:04 PM	20387
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	79	9.9		mg/Kg	1	7/25/2015 12:42:45 AM	20379
Surr: DNOP	114	57.9-140		%REC	1	7/25/2015 12:42:45 AM	20379
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.048		mg/Kg	1	7/23/2015 6:44:04 PM	20387
Toluene	ND	0.048		mg/Kg	1	7/23/2015 6:44:04 PM	20387
Ethylbenzene	ND	0.048		mg/Kg	1	7/23/2015 6:44:04 PM	20387
Xylenes, Total	ND	0.095		mg/Kg	1	7/23/2015 6:44:04 PM	20387
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	7/23/2015 6:44:04 PM	20387
Surr: 4-Bromofluorobenzene	97.7	70-130		%REC	1	7/23/2015 6:44:04 PM	20387
Surr: Dibromofluoromethane	111	70-130		%REC	1	7/23/2015 6:44:04 PM	20387
Surr: Toluene-d8	94.8	70-130		%REC	1	7/23/2015 6:44:04 PM	20387

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#: 1507970

27-Jul-15

Client: Rule Engineering LLC

Project: Apache Hills #2 Pipeline Release

Sample ID	MB-20379		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 20379		RunNo: 27723					
Prep Date:	7/22/2015		Analysis Date: 7/24/2015		SeqNo: 834383		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	10		10.00		105	57.9	140			

Sample ID	LCS-20379		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 20379		RunNo: 27723					
Prep Date:	7/22/2015		Analysis Date: 7/24/2015		SeqNo: 834384		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.1	57.4	139			
Surr: DNOP	5.5		5.000		111	57.9	140			

### 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#: 1507970

27-Jul-15

Client: Rule Engineering LLC

Project: Apache Hills #2 Pipeline Release

Sample ID	mb-20387		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles Short List			
Client ID:	PBS		Batch ID:	20387		RunNo:	27718			
Prep Date:	7/22/2015		Analysis Date:	7/23/2015		SeqNo:	833184		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: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.5	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		115	70	130			
Surr: Toluene-d8	0.47		0.5000		94.5	70	130			

Sample ID	lcs-20387		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles Short List			
Client ID:	LCSS		Batch ID:	20387		RunNo:	27718			
Prep Date:	7/22/2015		Analysis Date:	7/23/2015		SeqNo:	833185		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	70	130			
Toluene	1.0	0.050	1.000	0	103	70	130			
Ethylbenzene	1.1	0.050	1.000	0	106	70	130			
Xylenes, Total	3.2	0.10	3.000	0	108	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.7	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: Toluene-d8	0.49		0.5000		97.8	70	130			

Sample ID	1507970-002ams		SampType:	MS		TestCode:	EPA Method 8260B: Volatiles Short List			
Client ID:	SC-2		Batch ID:	20387		RunNo:	27718			
Prep Date:	7/22/2015		Analysis Date:	7/23/2015		SeqNo:	833188		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9921	0	115	70	130			
Toluene	1.2	0.050	0.9921	0.01751	119	70	130			
Ethylbenzene	1.3	0.050	0.9921	0	129	70	130			
Xylenes, Total	3.8	0.099	2.976	0.04769	127	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.4960		102	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.4960		95.4	70	130			
Surr: Dibromofluoromethane	0.55		0.4960		112	70	130			
Surr: Toluene-d8	0.49		0.4960		98.2	70	130			

### 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#: 1507970

27-Jul-15

Client: Rule Engineering LLC

Project: Apache Hills #2 Pipeline Release

Sample ID	1507970-002amsd	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-2	Batch ID:	20387	RunNo:	27753					
Prep Date:	7/22/2015	Analysis Date:	7/24/2015	SeqNo:	834542	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.048	0.9681	0	123	70	130	4.76	20	
Toluene	1.2	0.048	0.9681	0.01751	125	70	130	2.62	20	
Ethylbenzene	1.3	0.048	0.9681	0	135	70	130	1.80	0	S
Xylenes, Total	3.9	0.097	2.904	0.04769	132	70	130	1.50	0	S
Surr: 1,2-Dichloroethane-d4	0.50		0.4840		103	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.47		0.4840		96.5	70	130	0	0	
Surr: Dibromofluoromethane	0.54		0.4840		112	70	130	0	0	
Surr: Toluene-d8	0.48		0.4840		98.2	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#: 1507970

27-Jul-15

Client: Rule Engineering LLC  
Project: Apache Hills #2 Pipeline Release

Sample ID	mb-20387	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	20387	RunNo:	27718					
Prep Date:	7/22/2015	Analysis Date:	7/23/2015	SeqNo:	833250	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	540		500.0		108	70	130			

Sample ID	lcs-20387	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	20387	RunNo:	27718					
Prep Date:	7/22/2015	Analysis Date:	7/23/2015	SeqNo:	833278	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	106	70	123			
Surr: BFB	520		500.0		104	70	130			

Sample ID	1507970-001ams	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SC-1	Batch ID:	20387	RunNo:	27718					
Prep Date:	7/22/2015	Analysis Date:	7/23/2015	SeqNo:	833291	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	5.0	25.00	0	121	54.9	131			
Surr: BFB	540		500.0		108	70	130			

Sample ID	1507970-001amsd	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SC-1	Batch ID:	20387	RunNo:	27718					
Prep Date:	7/22/2015	Analysis Date:	7/23/2015	SeqNo:	833293	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.9	24.44	0	124	54.9	131	0.382	20	
Surr: BFB	500		488.8		102	70	130	0	0	

### Qualifiers:

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



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

## Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1507970

RcptNo: 1

Received by/date:

*[Signature]* 07/22/15

Logged By: Lindsay Mangin

7/22/2015 7:00:00 AM

*[Signature]*

Completed By: Lindsay Mangin

7/22/2015 9:07:53 AM

*[Signature]*

Reviewed By:

CS

07/22/15

### 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 ☒

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

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

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

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

(If no, notify customer for authorization.)

### 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	1.9	Good	Yes			



Client: Rule Engineering LLC

Mailing Address: 501 Airport Drive  
Suite 205 Farmington NM 87401

Phone #: 505 860 2712

Email or Fax#: dwatson@ruleengineering.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

☒ Standard      ☐ Rush

Apache Hills #2 Pipeline Release

Project Manager:

Sampler: D Watson

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.9

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

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/21/15	1821	Abraham Water	Christen Waack	7/21/15	1821
Date:	Time:	Relinquished by:	Received by:	Date	Time
7/21/15	1830	Christen Waack	<del>Christen Waack</del>	07/22/15	0700

Remarks:	Bill to Enterprise
----------	--------------------



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)

July 27, 2015

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

RE: Apache Hills #2 Pipeline

OrderNo.: 1507969

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/22/2015 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



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1507969

Date Reported: 7/27/2015

**CLIENT:** Rule Engineering LLC  
**Project:** Apache Hills #2 Pipeline  
**Lab ID:** 1507969-001

**Matrix:** SOIL

**Client Sample ID:** Stockpile  
**Collection Date:** 7/21/2015 2:15:00 PM  
**Received Date:** 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	43	9.8		mg/Kg	1	7/24/2015 8:09:28 PM	20379
Surr: DNOP	123	57.9-140		%REC	1	7/24/2015 8:09:28 PM	20379
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	25	5.0		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Surr: BFB	166	75.4-113	S	%REC	1	7/23/2015 11:27:59 PM	20385
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	0.13	0.050		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Toluene	0.82	0.050		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Ethylbenzene	0.29	0.050		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Xylenes, Total	2.2	0.10		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	7/23/2015 11:27:59 PM	20385

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#: 1507969

27-Jul-15

Client: Rule Engineering LLC  
Project: Apache Hills #2 Pipeline

Sample ID	1507969-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	Stockpile	Batch ID:	20379	RunNo:	27723					
Prep Date:	7/22/2015	Analysis Date:	7/24/2015	SeqNo:	834355	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	98	10	50.61	43.10	109	42.3	146			
Surr: DNOP	6.4		5.061		127	57.9	140			

Sample ID	1507969-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	Stockpile	Batch ID:	20379	RunNo:	27723					
Prep Date:	7/22/2015	Analysis Date:	7/24/2015	SeqNo:	834356	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	99	10	51.39	43.10	108	42.3	146	0.342	28.9	
Surr: DNOP	6.5		5.139		127	57.9	140	0	0	

Sample ID	MB-20379	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	20379	RunNo:	27723					
Prep Date:	7/22/2015	Analysis Date:	7/24/2015	SeqNo:	834383	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	10		10.00		105	57.9	140			

Sample ID	LCS-20379	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	20379	RunNo:	27723					
Prep Date:	7/22/2015	Analysis Date:	7/24/2015	SeqNo:	834384	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.1	57.4	139			
Surr: DNOP	5.5		5.000		111	57.9	140			

### 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#: 1507969

27-Jul-15

Client: Rule Engineering LLC  
Project: Apache Hills #2 Pipeline

Sample ID	MB-20385	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	20385	RunNo:	27716					
Prep Date:	7/22/2015	Analysis Date:	7/23/2015	SeqNo:	833100	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	870		1000		86.8	75.4	113			

Sample ID	LCS-20385	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	20385	RunNo:	27716					
Prep Date:	7/22/2015	Analysis Date:	7/23/2015	SeqNo:	833101	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.3	79.6	122			
Surr: BFB	910		1000		91.4	75.4	113			

### 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#: 1507969

27-Jul-15

Client: Rule Engineering LLC  
Project: Apache Hills #2 Pipeline

Sample ID	MB-20385		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	20385		RunNo:	27716			
Prep Date:	7/22/2015		Analysis Date:	7/23/2015		SeqNo:	833126		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	0.92		1.000		91.9	80	120			

Sample ID	LCS-20385		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	20385		RunNo:	27716			
Prep Date:	7/22/2015		Analysis Date:	7/23/2015		SeqNo:	833127		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	101	76.6	128			
Toluene	1.0	0.050	1.000	0	99.9	75	124			
Ethylbenzene	1.1	0.050	1.000	0	107	79.5	126			
Xylenes, Total	3.3	0.10	3.000	0	110	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

### 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	




# Sample Log-In Check List

 Client Name: **RULE ENGINEERING LL**

 Work Order Number: **1507969**

 RcptNo: **1**

Received by/date:

 **07/22/15**

 Logged By: **Lindsay Mangin**
**7/22/2015 7:00:00 AM**


 Completed By: **Lindsay Mangin**
**7/22/2015 9:04:03 AM**


Reviewed By:

**CS 07/22/15**

## 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:

(&lt;2 or &gt;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	1.9	Good	Yes			

# Chain-of-Custody Record

Client:

Rule Engineering LLC

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Apache Hills #2 Pipeline

Mailing Address: 501 Airport Drive

Farmington NM 87401

Phone #: 505 866 2712

email or Fax#:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Project Manager:

D Watson

Sampler: D Watson

On Ice: ☒ Yes ☐ No

Sample Temperature: 1,9

Date Time Matrix Sample Request ID

7-21-15 1445 Soil Stock pile

Container Type and #

1-4oz

Preservative Type

cold

HEAL No.

15079169

BTEX + MTBE + TPH (8021)  
BTEX + MTBE + TPH (Gas only)  
TPH 8015B (GRO/DRO) (8021)  
TPH (Method 418.1)  
EDB (Method 504.1)  
PAH's (8310 or 8270 SIMS)  
RCRA 8 Metals  
Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)  
8081 Pesticides / 8082 PCB's  
8260B (VOA)  
8270 (Semi-VOA)

Air Bubbles (Y or N)

Date: Time: Relinquished by:

7/21/15 1821 Ashish Tiwari

Received by:

Phanta Wells

Date Time

7/21/15 1821

Remarks:

Ball to Enterprise

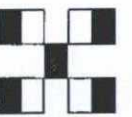
Date Time

7/21/15 1830

Received by:

[Signature]

07/22/15 0700



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Analysis Request