

3R-1012

**Release Report/ General
Correspondence**

Enterprise RA

Date: Oct-Dec 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

OCT 02 2015

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

Form C-141
Revised August 8, 2011

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-56	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: Jicarilla Apache Tribe	Mineral Owner: Jicarilla Apache Tribe	API No.
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LOCATION OF RELEASE

Unit Letter B	Section 28	Township 26N	Range 5W	Feet from the 985	North South Line	Feet from the 1782	East West Line	County Rio Arriba
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Latitude 36.46267 Longitude -107.36170

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: 9/21/15 @ 12:15 p.m.	Date and Hour of Discovery: 9/21/15 @ 1:00 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Hobson Sandoval - JAEPO; Cory Smith - NMOCD	
By Whom? Thomas Long	Date and Time 9/21/15 3:01 p.m.	
Was a Watercourse Reached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse Estimated 2-3 Barrels of Fluids	

If a Watercourse was Impacted, Describe Fully.* An estimated 2-3 barrels of fluids from the release was observed on the ground surface and flowed into a small ephemeral wash.

Describe Cause of Problem and Remedial Action: On September 21, 2015, Enterprise technicians discovered a gas leak on the Lateral 2C-56 pipeline. An estimated 2-3 barrels of fluids from the release was observed on the ground surface and flowed into a small ephemeral wash. The pipeline was isolated, blown down, locked out and tagged out for safety and environmental concerns. On September 22, 2015, Enterprise excavated the impacted soil from the ephemeral wash in anticipation of a rain event. Repairs and additional remediation are in the scheduling process.

Describe Area Affected and Cleanup Action: Repairs and additional 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: <i>11/9/15</i>	Expiration Date: <i>[Signature]</i>
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <i>9-28-2015</i>	Phone: (713)381-6684	

* Attach Additional Sheets If Necessary

NCS 153 133 0513

1

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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-143	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: Jicarilla Apache Tribe	Mineral Owner: Jicarilla Apache Tribe	API No.
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LOCATION OF RELEASE

Unit Letter G	Section 31	Township 24N	Range 4W	Feet from the	North/South Line	Feet from the	East/West Line	County Rio Arriba
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Latitude 36.266286 Longitude 107.292940

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release: 451 MCF Gas; 5-7 BBLs Natural Gas Liquids	Volume Recovered: None
Source of Release: Internal corrosion	Date and Hour of Occurrence: 6/12/2015 @ 11:25 p.m.	Date and Hour of Discovery: 6/12/2015 @ 5:00 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy notification to Cory Smith - NMOCD; Hobson Sandoval - JAEPO	
By Whom? Thomas Long	Date and Hour 6/12/2015 @ 2:35 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 12, 2015, during routine pipeline patrols a contractor identified a natural gas release on the Lateral 2C-143 pipeline. The pipeline was isolated, depressurized, locked out and tagged out. Remediation and repairs are in were complete on July 8, 2015.

Describe Area Affected and Cleanup Action Taken.* The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 44 feet long by 12 feet wide by seven feet deep. Approximately 240 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: 		OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields		Approved by Environmental Specialist: 	
Title: Director, Environmental		Approval Date:	Expiration Date:
E-mail Address: jefields@eprod.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10-6-2015	Phone: (713)381-6684		

* Attach Additional Sheets If Necessary

CS158952081

112 24

Lateral 2C-143 Pipeline Release Report

Unit Letter L, Sec 31, Township 24 North, Range 4 West
Rio Arriba County, New Mexico

September 1, 2015

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

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

**Enterprise Field Services, LLC
Lateral 2C-143
Pipeline Release Report**

Prepared for:

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

Prepared by:

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



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

Reviewed by:



Russell Knight, PG, Principal Hydrogeologist

September 1, 2015

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1.0 Introduction

The Enterprise Field Services, LLC (Enterprise) Lateral 2C-143 pipeline release site is located in Unit Letter L, Section 31, Township 24 North, Range 4 West, in Rio Arriba County, New Mexico. The release resulted from a corrosion hole in the pipeline discovered on June 12, 2015, by Enterprise personnel.

On July 6, 2015, Enterprise initiated repair activities at the location. The release consisted of an unknown quantity of natural gas and condensate. Site work included replacement of the segment of compromised pipeline with new pipe and excavation of hydrocarbon impacted soils.

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

2.0 Release Summary

Site Name: Lateral 2C-143 Pipeline Release

Location: Unit Letter L, Section 31, Township 24 North, Range 4 West

Release Latitude/Longitude: N36.26186 and W107.30438, respectively

Land Jurisdiction: Jicarilla Apache Nation

Date Release Discovered: June 12, 2015

Agency Notification: New Mexico Oil Conservation Division (NMOCD) and Jicarilla Apache Nation Environmental Protection Office (JANEPO)

Diameter of Pipeline: 6-inch

Source of Release: Corrosion hole

Release Contents: Natural gas and condensate

Release Volume: Unknown

NMOCD Site Ranking: 10

Contractor(s): West States Energy Contractors, Inc. (West States)

Disposal Facility: T-n-T Land Farm (Permit #NM-01-0008)

Volume of Soil Transported for Disposal/Remediation: 240 cubic yards

3.0 JANEPO/NMOCD Site Ranking

The release site is located on the Jicarilla Apache Nation under the jurisdiction of JANEPO. Based on JANEPO recommendations, remediation of soils releases sites are assigned a default site rank of 20 in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 1993). Based on the ranking score of 20, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

Depth to groundwater at the site is estimated to be between 50 and 100 feet below grade surface (bgs). An unnamed wash is located approximately 50 north of the release location. A review was completed of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System and no water wells were identified within a 1,000 foot radius of the location.

4.0 Field Activity

On July 6, 2015, Enterprise, West States, and Rule Engineering, LLC (Rule) personnel were onsite for the initiation of pipeline repair activities. West States provided heavy equipment operation and pipeline repair support. Rule personnel provided excavation guidance and collected confirmation samples from the resultant excavation. The repair included the replacement of the segment of compromised pipeline with new pipe. Approximately 240 cubic yards of hydrocarbon impacted soils were removed from an area of excavation measuring approximately 44 feet x 12 feet x 7 feet in depth.

A depiction of the excavation with sample locations and summary of analytical results is included as Figure 3. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix A and a photograph log is included in Appendix B.

5.0 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 7 and 8, 2015. Each confirmation soil sample is a representative composite of material collected from separate locations within the sample area.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B and TPH (GRO/DRO) per USEPA 8015D. Laboratory analytical results are summarized in Table 1, and the analytical laboratory report is included in Appendix C.

A portion of each samples was also field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photoionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Field screening results are summarized in Table 1.

6.0 Laboratory Analytical Results

Laboratory analytical results for confirmation samples SC-1 through SC-8 reported benzene concentrations below the laboratory reporting limits, which are below the

JANEPPO action level of 10 mg/kg. Total BTEX concentrations for confirmation samples SC-1 through SC-8 ranged from below the laboratory reporting limits to 0.34 mg/kg, which are below the JANEPPO action level of 50 mg/kg. Total TPH (GRO/DRO) concentrations for confirmation samples SC-1 through SC-8 ranged from below laboratory reporting limits to 79 mg/kg, which are below the JANEPPO action level of 100 mg/kg. Laboratory analytical results are summarized in Table 1.

7.0 Conclusions

The Enterprise Lateral 2C-143 pipeline release site is located in Unit Letter L, Section 31, Township 24 North, Range 4 West, in Rio Arriba County, New Mexico, on the Jicarilla Apache Nation. The release resulted from a corrosion hole in the pipeline discovered on June 12, 2015, by Enterprise personnel. Subsequent to pipeline repair, approximately 240 cubic yards of hydrocarbon impacted soils were excavated and transported to the T-n-T Landfarm. Confirmation samples were collected from the sidewalls and base of the resultant excavation which measured approximately 44 feet x 12 feet x 7 feet in depth. Laboratory analytical results for the soil confirmation samples (SC-1 through SC-8) reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below JANEPPO action levels.

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

8.0 Closure and Limitations

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

Table

Table 1. Soil Sampling Results - VOCs, Benzene, Total BTEX, and TPH
Enterprise Field Services, LLC
Lateral 2C-143 Pipeline Release
Rio Arriba County, New Mexico

Sample Name	Date	Location	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
JANEPO Action Level*				100	10	NE	NE	NE	50	100**	
SC-1	7/8/2015	North Wall (west)	1 to 7	4.9	<0.049	<0.049	<0.049	<0.098	ND	<4.9	<9.8
SC-2	7/7/2015	South Wall (west)	1 to 7	3.00	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<9.9
SC-3	7/7/2015	East Wall	1 to 7	2.6	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<10
SC-4	7/7/2015	West Wall	1 to 7	5.2	<0.050	<0.050	<0.050	<0.10	ND	7.0	<9.7
SC-5	7/7/2015	Base (west)	7	70.0	<0.049	<0.049	<0.049	0.34	0.34	14	65
SC-6	7/7/2015	North Wall (east)	1 to 7	1.6	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<9.8
SC-7	7/8/2015	South Wall (east)	1 to 7	5.6	<0.049	<0.049	<0.049	<0.098	ND	<4.9	<9.8
SC-8	7/8/2015	Base (east)	7	4.0	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.7

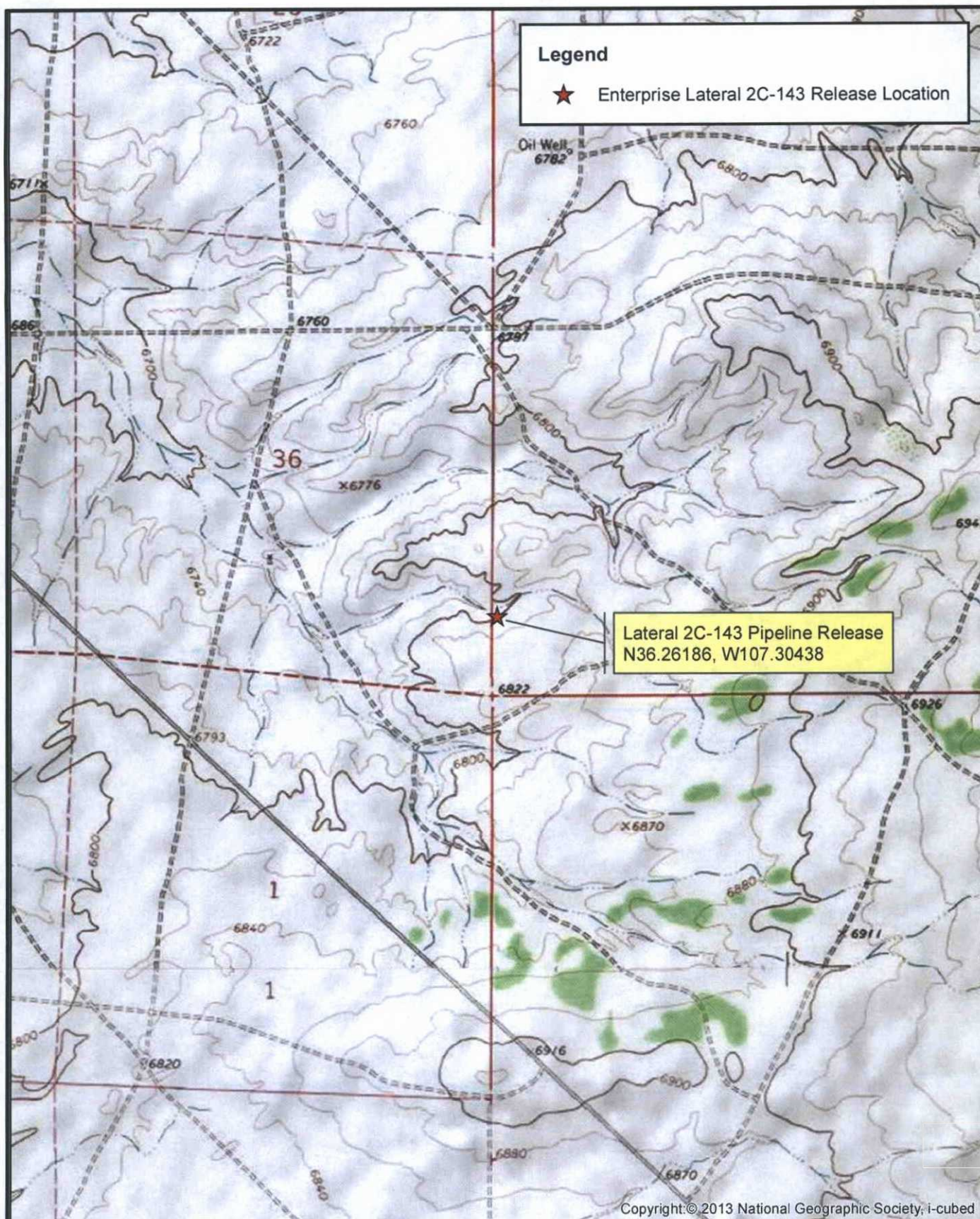
Notes: VOCs - volatile organic compounds
PID - photoionization detector
ft bgs - feet below grade surface
ppm - parts per million
mg/kg - milligrams/kilogram
NE - not-established

ND - not-detected above laboratory reporting limits
BTEX - benzene, toluene, ethylbenzene, and xylenes
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
JANEPO - Jicarilla Apache Nation Environmental Protection Office

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

**Based on a site ranking of 20.

Figures



Rule Engineering, LLC
Solutions to Regulations for Industry

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

Location
L-31-24N-4W
N36.26186, W107.30438
Rio Arriba County, New Mexico

Topographic Map
Enterprise Field Services, LLC
Lateral 2C-143
Pipeline Release

Date: 9/1/2015 File: 150821 Lateral 2C-143 Topo

Figure: 1

Legend

★ Release Location

----- Pipeline

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

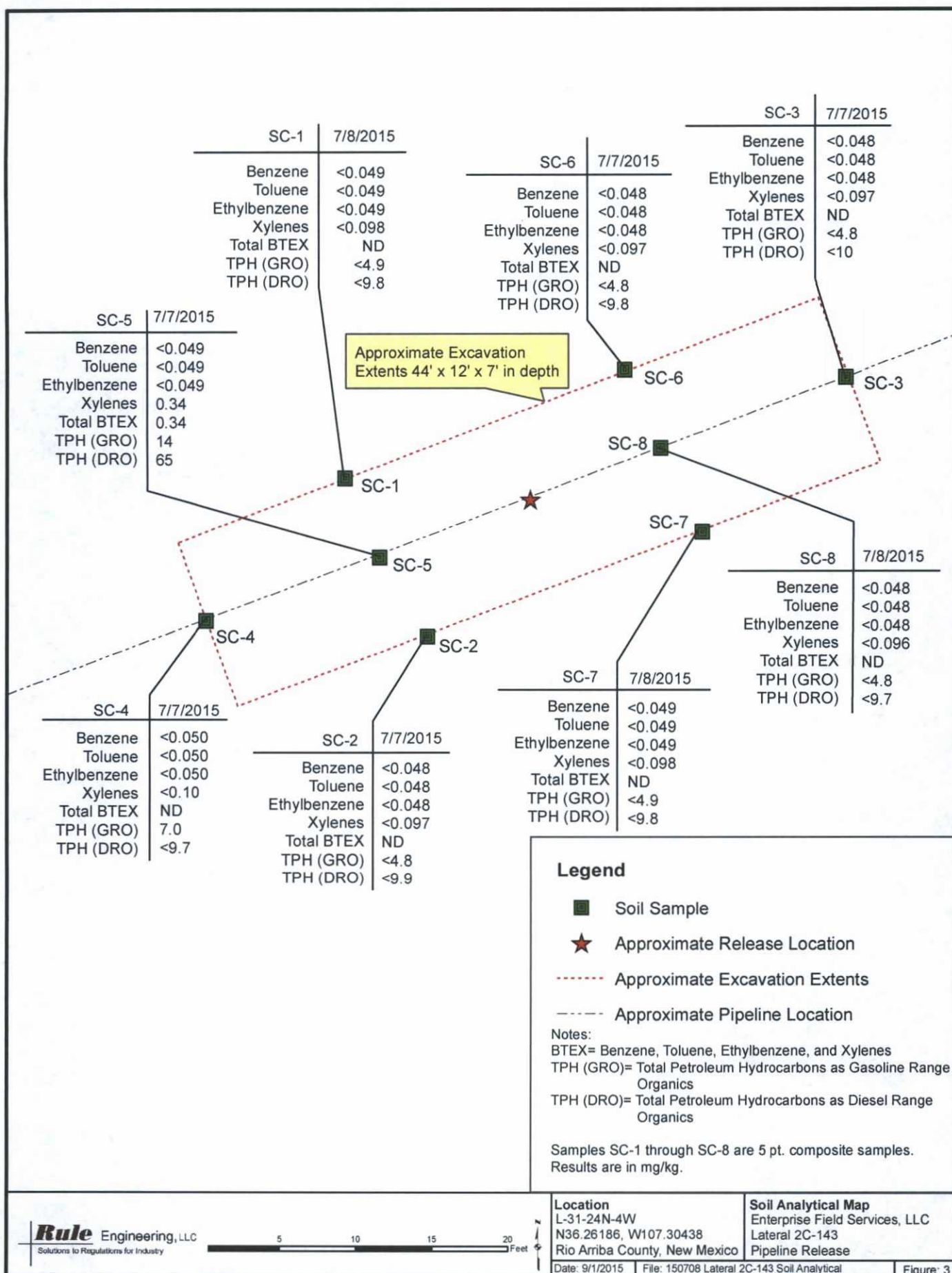
0 15 30 45 60
Feet

Location
L-31-24N-4W
N36.26186, W107.30438
Rio Arriba County, New Mexico

Aerial Site Map
Enterprise Field Services, LLC
Lateral 2C-143
Pipeline Release

Date: 9/1/2015 File: 150821 Lateral 2C-143 Aerial

Figure: 2



Appendix A

Executed C-138 Solid Waste Acceptance Form

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-143 Pipeline
3. Location of Material (Street Address, City, State or ULSTR): Unit Letter G Section 31 Township 24 North Range 4 West; 36.266286, -107.29240.
4. Source and Description of Waste: Hydro-excavated soil impacted with hydrocarbons associated with a pipeline release.
5. Estimated Volume <u>50</u> <u>yd</u> ³ bbls Known Volume (to be entered by the operator at the end of the haul) <u>240</u> <u>yd</u> ³ bbls

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

I, Thomas Long *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 *Thomas Long* 7-6-15, 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 *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: 7-10-15


SIGNATURE: [Signature] TELEPHONE NO.: 505-928-2737 505-320-2430
Surface Waste Management Facility Authorized Agent


Appendix B

Photograph Log

Photograph Log
Lateral 2C-143 Pipeline Release
Enterprise Field Services, LLC

Rule

Photograph #1	
Client: Enterprise	
Site Name: Lateral 2C-143 Pipeline Release	
Date Photo Taken: July 8, 2015	
Release Location: N36.26186, W107.30438 L-31-24N-4W Rio Arriba County, NM	
Photo Taken by: Deborah Watson	Description: Facing E, view of final excavation and repaired pipeline.

Photograph #2	
Client: Enterprise	
Site Name: Lateral 2C-143 Pipeline Release	
Date Photo Taken: July 8, 2015	
Release Location: N36.26186, W107.30438 L-31-24N-4W Rio Arriba County, NM	
Photo Taken by: Deborah Watson	Description: Facing NE, view of final excavation and repaired pipeline

Appendix C

Analytical Laboratory Report



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

July 13, 2015

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

RE: Lateral 2C-143

OrderNo.: 1507338

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 7/9/2015 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 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 1507338

Date Reported: 7/13/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: Lateral 2C-143

Collection Date: 7/8/2015 9:45:00 AM

Lab ID: 1507338-001

Matrix: SOIL

Received Date: 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/10/2015 7:46:33 PM	20177
Surr: DNOP	116	57.9-140		%REC	1	7/10/2015 7:46:33 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/10/2015 3:16:01 PM	20173
Surr: BFB	91.9	75.4-113		%REC	1	7/10/2015 3:16:01 PM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	7/10/2015 3:16:01 PM	20173
Toluene	ND	0.049		mg/Kg	1	7/10/2015 3:16:01 PM	20173
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2015 3:16:01 PM	20173
Xylenes, Total	ND	0.098		mg/Kg	1	7/10/2015 3:16:01 PM	20173
Surr: 4-Bromofluorobenzene	98.9	80-120		%REC	1	7/10/2015 3:16:01 PM	20173

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 11
	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 1507338

Date Reported: 7/13/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: Lateral 2C-143

Collection Date: 7/7/2015 4:50:00 PM

Lab ID: 1507338-002

Matrix: SOIL

Received Date: 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/10/2015 8:51:14 PM	20177
Surr: DNOP	109	57.9-140		%REC	1	7/10/2015 8:51:14 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2015 10:27:12 PM	20173
Surr: BFB	103	75.4-113		%REC	1	7/10/2015 10:27:12 PM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	7/10/2015 10:27:12 PM	20173
Toluene	ND	0.048		mg/Kg	1	7/10/2015 10:27:12 PM	20173
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2015 10:27:12 PM	20173
Xylenes, Total	ND	0.097		mg/Kg	1	7/10/2015 10:27:12 PM	20173
Surr: 4-Bromofluorobenzene	99.3	80-120		%REC	1	7/10/2015 10:27:12 PM	20173

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 1507338

Date Reported: 7/13/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: Lateral 2C-143

Collection Date: 7/7/2015 4:55:00 PM

Lab ID: 1507338-003

Matrix: SOIL

Received Date: 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/10/2015 9:12:54 PM	20177
Surr: DNOP	107	57.9-140		%REC	1	7/10/2015 9:12:54 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2015 10:55:54 PM	20173
Surr: BFB	96.1	75.4-113		%REC	1	7/10/2015 10:55:54 PM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	7/10/2015 10:55:54 PM	20173
Toluene	ND	0.048		mg/Kg	1	7/10/2015 10:55:54 PM	20173
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2015 10:55:54 PM	20173
Xylenes, Total	ND	0.097		mg/Kg	1	7/10/2015 10:55:54 PM	20173
Surr: 4-Bromofluorobenzene	97.6	80-120		%REC	1	7/10/2015 10:55:54 PM	20173

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 11
	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 **1507338**Date Reported: **7/13/2015****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-4**Project:** Lateral 2C-143**Collection Date:** 7/7/2015 5:00:00 PM**Lab ID:** 1507338-004**Matrix:** SOIL**Received Date:** 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/10/2015 9:34:27 PM	20177
Surr: DNOP	109	57.9-140		%REC	1	7/10/2015 9:34:27 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	7.0	5.0		mg/Kg	1	7/10/2015 11:24:34 PM	20173
Surr: BFB	108	75.4-113		%REC	1	7/10/2015 11:24:34 PM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.050		mg/Kg	1	7/10/2015 11:24:34 PM	20173
Toluene	ND	0.050		mg/Kg	1	7/10/2015 11:24:34 PM	20173
Ethylbenzene	ND	0.050		mg/Kg	1	7/10/2015 11:24:34 PM	20173
Xylenes, Total	ND	0.10		mg/Kg	1	7/10/2015 11:24:34 PM	20173
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	7/10/2015 11:24:34 PM	20173

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 1507338

Date Reported: 7/13/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: Lateral 2C-143

Collection Date: 7/7/2015 5:05:00 PM

Lab ID: 1507338-005

Matrix: SOIL

Received Date: 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	65	9.9		mg/Kg	1	7/10/2015 9:56:03 PM	20177
Surr: DNOP	109	57.9-140		%REC	1	7/10/2015 9:56:03 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	14	4.9		mg/Kg	1	7/10/2015 11:53:12 PM	20173
Surr: BFB	116	75.4-113	S	%REC	1	7/10/2015 11:53:12 PM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	7/10/2015 11:53:12 PM	20173
Toluene	ND	0.049		mg/Kg	1	7/10/2015 11:53:12 PM	20173
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2015 11:53:12 PM	20173
Xylenes, Total	0.34	0.097		mg/Kg	1	7/10/2015 11:53:12 PM	20173
Surr: 4-Bromofluorobenzene	109	80-120		%REC	1	7/10/2015 11:53:12 PM	20173

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 5 of 11
	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 1507338

Date Reported: 7/13/2015

CLIENT: Rule Engineering LLC**Client Sample ID:** SC-6**Project:** Lateral 2C-143**Collection Date:** 7/7/2015 5:08:00 PM**Lab ID:** 1507338-006**Matrix:** SOIL**Received Date:** 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/10/2015 10:17:36 PM	20177
Surr: DNOP	108	57.9-140		%REC	1	7/10/2015 10:17:36 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/11/2015 12:21:57 AM	20173
Surr: BFB	91.9	75.4-113		%REC	1	7/11/2015 12:21:57 AM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	7/11/2015 12:21:57 AM	20173
Toluene	ND	0.048		mg/Kg	1	7/11/2015 12:21:57 AM	20173
Ethylbenzene	ND	0.048		mg/Kg	1	7/11/2015 12:21:57 AM	20173
Xylenes, Total	ND	0.097		mg/Kg	1	7/11/2015 12:21:57 AM	20173
Surr: 4-Bromofluorobenzene	97.9	80-120		%REC	1	7/11/2015 12:21:57 AM	20173

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		

Analytical Report

Lab Order 1507338

Date Reported: 7/13/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-7**Project:** Lateral 2C-143**Collection Date:** 7/8/2015 9:50:00 AM**Lab ID:** 1507338-007**Matrix:** SOIL**Received Date:** 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/10/2015 10:39:11 PM	20177
Surr: DNOP	120	57.9-140		%REC	1	7/10/2015 10:39:11 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/11/2015 12:50:40 AM	20173
Surr: BFB	91.8	75.4-113		%REC	1	7/11/2015 12:50:40 AM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	7/11/2015 12:50:40 AM	20173
Toluene	ND	0.049		mg/Kg	1	7/11/2015 12:50:40 AM	20173
Ethylbenzene	ND	0.049		mg/Kg	1	7/11/2015 12:50:40 AM	20173
Xylenes, Total	ND	0.098		mg/Kg	1	7/11/2015 12:50:40 AM	20173
Surr: 4-Bromofluorobenzene	98.6	80-120		%REC	1	7/11/2015 12:50:40 AM	20173

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 11
	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 1507338

Date Reported: 7/13/2015

CLIENT: Rule Engineering LLC**Client Sample ID:** SC-8**Project:** Lateral 2C-143**Collection Date:** 7/8/2015 10:20:00 AM**Lab ID:** 1507338-008**Matrix:** SOIL**Received Date:** 7/9/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/10/2015 11:00:38 PM	20177
Surr: DNOP	114	57.9-140		%REC	1	7/10/2015 11:00:38 PM	20177
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/11/2015 1:19:23 AM	20173
Surr: BFB	91.8	75.4-113		%REC	1	7/11/2015 1:19:23 AM	20173
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	7/11/2015 1:19:23 AM	20173
Toluene	ND	0.048		mg/Kg	1	7/11/2015 1:19:23 AM	20173
Ethylbenzene	ND	0.048		mg/Kg	1	7/11/2015 1:19:23 AM	20173
Xylenes, Total	ND	0.096		mg/Kg	1	7/11/2015 1:19:23 AM	20173
Surr: 4-Bromofluorobenzene	98.1	80-120		%REC	1	7/11/2015 1:19:23 AM	20173

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507338

13-Jul-15

Client: Rule Engineering LLC

Project: Lateral 2C-143

Sample ID	MB-20177	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	20177	RunNo:	27406					
Prep Date:	7/9/2015	Analysis Date:	7/10/2015	SeqNo:	822308	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

11

10.00

112

57.9

140

Sample ID	LCS-20177	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	20177	RunNo:	27406					
Prep Date:	7/9/2015	Analysis Date:	7/10/2015	SeqNo:	822309	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)

53

10

50.00

0

106

57.4

139

Surr: DNOP

4.6

5.000

92.2

57.9

140

Sample ID	LCS-20189	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	20189	RunNo:	27406					
Prep Date:	7/9/2015	Analysis Date:	7/10/2015	SeqNo:	822697	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: DNOP

5.6

5.000

113

57.9

140

Sample ID	1507338-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	20177	RunNo:	27406					
Prep Date:	7/9/2015	Analysis Date:	7/10/2015	SeqNo:	822703	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)

48

9.9

49.36

0

98.2

42.3

146

Surr: DNOP

4.8

4.936

97.9

57.9

140

Sample ID	1507338-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	20177	RunNo:	27406					
Prep Date:	7/9/2015	Analysis Date:	7/10/2015	SeqNo:	822704	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)

51

9.6

48.08

0

106

42.3

146

4.70

28.9

Surr: DNOP

5.0

4.808

104

57.9

140

0

0

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507338

13-Jul-15

Client: Rule Engineering LLC

Project: Lateral 2C-143

Sample ID	MB-20173		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	PBS		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822735		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	890		1000		89.3	75.4	113			

Sample ID	LCS-20173		SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	LCSS		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822736		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	94.2	64	130			
Surr: BFB	960		1000		95.9	75.4	113			

Sample ID	1507338-001AMS		SampType:	MS		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	SC-1		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822747		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.27	0	102	62.5	151			
Surr: BFB	970		970.9		100	75.4	113			

Sample ID	1507338-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	SC-1		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822748		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.32	0	97.1	62.5	151	4.63	22.1	
Surr: BFB	960		972.8		98.2	75.4	113	0	0	

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#: 1507338

13-Jul-15

Client: Rule Engineering LLC

Project: Lateral 2C-143

Sample ID	MB-20173		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822778		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	0.96		1.000		95.9	80	120			

Sample ID	LCS-20173		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822779		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	102	76.6	128			
Toluene	0.98	0.050	1.000	0	97.6	75	124			
Ethylbenzene	1.0	0.050	1.000	0	101	79.5	126			
Xylenes, Total	3.0	0.10	3.000	0	102	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID	1507338-002AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SC-2		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822791		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.049	0.9766	0	109	69.6	136			
Toluene	1.0	0.049	0.9766	0.03054	103	76.2	134			
Ethylbenzene	1.1	0.049	0.9766	0.01126	108	75.8	137			
Xylenes, Total	3.2	0.098	2.930	0.02914	108	78.9	133			
Surr: 4-Bromofluorobenzene	1.0		0.9766		107	80	120			

Sample ID	1507338-002AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SC-2		Batch ID:	20173		RunNo:	27422			
Prep Date:	7/9/2015		Analysis Date:	7/10/2015		SeqNo:	822792		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.049	0.9718	0	104	69.6	136	4.75	20	
Toluene	0.97	0.049	0.9718	0.03054	97.2	76.2	134	6.03	20	
Ethylbenzene	1.0	0.049	0.9718	0.01126	104	75.8	137	4.57	20	
Xylenes, Total	3.0	0.097	2.915	0.02914	104	78.9	133	4.54	20	
Surr: 4-Bromofluorobenzene	1.0		0.9718		106	80	120	0	0	

Qualifiers:

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

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

Work Order Number: 1507338

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

7/9/2015 7:00:00 AM

Completed By: Lindsay Mangin

7/9/2015 7:22:06 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☐

No ☐

Not Present ☒

Yes ☒

No ☐

Not Present ☐

Courier

Log In

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

Yes ☒

No ☐

NA ☐

Yes ☒

No ☐

NA ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☐

No ☒

NA ☐

Yes ☐

No ☐

No VOA Vials ☒

Yes ☐

No ☒

Yes ☒

No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Yes ☒

No ☐

Adjusted? _____

Yes ☒

No ☐

Yes ☒

No ☐

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering LLC

Mailing Address: 501 Airport

Rule 205 Farmington NM 87401

Phone #: 505 866 2712

mail or Fax#:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☒ Rush 3 day IT

Project Name:

Lateral 2C-143

Project #:

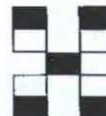
Project Manager:

D. Watson

Sampler: D. Watson

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.3



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)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO DRO MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
8-15	0945	soil	SC-1	2-4oz glass	cold	1507338 -001	X	X										
7-15	1650		SC-2			-002	X	X										
7-15	1655		SC-3			-003	X	X										
7-15	1700		SC-4			-004	X	X										
7-15	1705		SC-5			-005	X	X										
7-15	1708		SC-6			-006	X	X										
8-15	0950		SC-7			-007	X	X										
8-15	1020		SC-8			-008	X	X										

Date:	Time:	Relinquished by:	Received by:	Date:	Time:	Remarks:
8/15/2029		<u>Debra White</u>	<u>Christa White</u>	7/8/15	2029	
Date:	Time:	Relinquished by:	Received by:	Date:	Time:	
8/15/2030		<u>Wt. White</u>	<u>[Signature]</u>	07/09/15	0700	Bill to Enterprise attention: Tom Long

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

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

OCT 26 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 2C-55	Facility Type: Natural Gas Gather Pipeline

Surface Owner: BLM	Mineral Owner: BLM	API No.
--------------------	--------------------	---------

LOCATION OF RELEASE

Unit Letter O	Section 19	Township 25N	Range 7W	Feet from the 1236	North/South Line	Feet from the 1874	East/West Line	County Rio Arriba
------------------	---------------	-----------------	-------------	--------------------------	---------------------	--------------------------	-------------------	----------------------

Latitude 36.38203 Longitude 107.61250

NATURE OF RELEASE

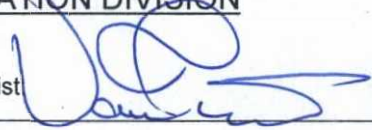
Type of Release: Natural Gas and Condensate	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: 10/13/2015 @ 4:30 p.m.	Date and Hour of Discovery: 10/13/2015 @ 5:00 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Cory Smith - NMOCD; Katherina Diemer - BLM	
By Whom? Thomas Long	Date and Hour 10/14/2015 @ 8:41 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 October 13, 2015, Enterprise technicians discovered a natural gas leak in the Lateral 2C-55 right of way during the remediation of a previous release. The pipeline was isolated, depressurized, locked out and tagged out. Repairs and remediation are in the scheduling process.

Describe Area Affected and Cleanup Action Taken: Excavation activities will be overseen by a third party environmental contractor. The third party environmental contractor 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: 	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist 	
Title: Director, Environmental	Approval Date: 10/16/2015	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10/21/2015	Phone: (713)381-6684	

* Attach Additional Sheets If Necessary

NCS1534126866

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

NOV 02 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-31	Facility Type: Natural Gas Gather Pipeline

Surface Owner: BLM	Mineral Owner: BLM	API No. 41
--------------------	--------------------	------------

LOCATION OF RELEASE

Unit Letter L	Section 9	Township 25N	Range 6W	Feet from the 1674	North/South Line	Feet from the 684	East/West Line	County Rio Arriba
------------------	--------------	-----------------	-------------	--------------------------	---------------------	-------------------------	-------------------	----------------------

Latitude 36.41141 Longitude 107.47916

NATURE OF RELEASE

Type of Release: Natural Gas and Condensate	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: 10/15/2015 @ 1:00 p.m.	Date and Hour of Discovery: 10/15/2015 @ 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; Katherina Diemer - BLM	
By Whom? Thomas Long	Date and Hour 10/26/2015 @ 7:43 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 October 15, 2015, Enterprise technicians discovered a natural gas leak in the Lateral K-31 right of way. The pipeline was isolated, depressurized, locked out and tagged out. Repairs and remediation are in progress.

Describe Area Affected and Cleanup Action Taken: Repairs and remediation are progress and the excavation activities are being supervised by a third party environmental contractor. The third party environmental contractor 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: <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: 12/7/2015	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10-28-2015	Phone: (713)381-6684	

* Attach Additional Sheets If Necessary

NCS 1534128324

①

District I
1625 N. French Dr., Hobbs, NM 88240
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811 S. First St., Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural
Resources

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

NOV 18 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 L	Section 12	Township 24 N	Range 4W	Feet from the 031	North/South Line South	Feet from the 1200	East/West Line West	County Rio Arriba
-------------------------	----------------------	-------------------------	--------------------	-----------------------------	----------------------------------	------------------------------	-------------------------------	-----------------------------

Latitude 36.323088 Longitude -107.202824

NATURE OF RELEASE

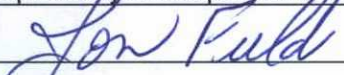

Type of Release: Natural Gas Liquids	Volume of Release 5-10 BBLS	Volume Recovered: None
Source of Release: Leaking Valve	Date and Hour of Occurrence: 7/28/15 @ 10:25 a.m.	Date and Hour of Discovery: 7/28/15 @ 11:15 a.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Courtesy Notification – 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 were completed on September 3, 2015.

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 33 feet long by 24 feet wide ranging from 10 to 12 feet deep. Approximately 322 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: 	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Environmental	Approval Date: <u>12/28/15</u>	Expiration Date: <u>12/28/15</u>
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>11-6-2015</u>	Phone: (713)381-6684	

* Attach Additional Sheets If Necessary

#005 1523031703

62

NOV 13 2015

Jicarilla 126S #13 Well Tie Pipeline Release Report

Unit Letter L, Section 12,
Township 24 North, Range 4 West
Rio Arriba County, New Mexico

October 14, 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 Jicarilla 126S #13 Well Tie Pipeline Release Report

Prepared for:

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

Prepared by:

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



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

Reviewed by:



Russell Knight, PG, Principal Hydrogeologist

October 14, 2015

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2.0	Release Summary	1
3.0	JANEPO/NMOCD Site Ranking	2
4.0	Field Activities	2
5.0	Soil Sampling	2
6.0	Laboratory Analytical Results	3
7.0	Conclusions.....	3
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Table 1	NMOCD Site Ranking Determination
Table 2	Soil Sample Results – VOCs, Benzene, Total BTEX, and TPH

Figures

Figure 1	Topographic Map
Figure 2	Aerial Site Map
Figure 3	Soil Analytical Map

Appendices

Appendix A	Executed C-138 Soil Waste Acceptance Form
Appendix B	Photograph Log
Appendix C	Analytical Laboratory Report

1.0 Introduction

The Enterprise Field Services, LLC (Enterprise) Jicarilla 126S #13 well tie pipeline release site is located in Unit Letter L, Section 12, Township 24 North, Range 4 West, in Rio Arriba County, New Mexico, on the Jicarilla Apache Nation. The release resulted from a broken valve on the end-of-line riser discovered on July 29, 2015.

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

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

2.0 Release Summary

Site Name	Jicarilla 126S #13 Well Tie Pipeline Release		
Site Location Description	Unit Letter L, Section 12, Township 24 North, Range 4 West (N36.32306, W107.20283)		
Land Jurisdiction	Jicarilla Apache Nation		
Discovery Date	July 29, 2015		
Release Report Date	July 29, 2015	Reported by	Thomas Long
Agency Notification	New Mexico Oil Conservation Division (NMOCD) and Jicarilla Apache Nation Environmental Protection Office (JANEPO)		
Release Source	Valve on the end-of-line riser		
Substance(s) Released	Natural Gas and Pipeline Liquids	Volume Released	Undetermined
NMOCD Site Rank	30		
Distance to Surface Water	Unnamed ephemeral washes 300 feet northwest and 350 feet southwest which drain to Cañada Larga		
Estimated Depth to Groundwater	Less than 50 feet below grade surface (bgs)	Distance to Water Well or Spring	Greater than 1,000 feet
Contractor	West State Energy Contractor, Inc. (West States)	Remedial Excavation Dimensions	33 feet by 24 feet by 10 to 12 feet in depth
Volume of Soil Transported for Disposal/Remediation	Approximately 322 cubic yards	Disposal Facility	TNT Landfarm (Permit #NM-01-0008)

3.0 JANEPO/NMOCD Site Ranking

The release site is located on the Jicarilla Apache Nation and follows recommendations from JANEPO. In accordance with JANEPO and NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 30 (Table 1).

Depth to groundwater at the site is estimated to be less than 50 feet below grade surface (bgs) based on the elevation differential (20 feet) between the release location and the wash in Cañada Larga.

A review was completed of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System and no water wells were identified within a 1,000 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

Two ephemeral washes traverse the area approximately 300 feet northwest and 350 feet southwest of the release location and drain to the wash in Cañada Larga.

Based on the ranking score of 30, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

4.0 Field Activities

On August 28, 2015, Enterprise initiated repair activities at the location. West States provided heavy equipment operation and repair support. Rule Engineering, LLC (Rule) personnel provided excavation guidance and collected confirmation samples from the resultant excavation. The repair included the replacement of the valve on the end-of-line riser. Approximately 322 cubic yards of hydrocarbon impacted soils were removed from an area of excavation measuring approximately 33 feet by 24 feet by 10 to 12 feet in depth.

A depiction of the excavation with sample locations and summary of analytical results is included as Figure 3. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix A and a photograph log is included in Appendix B.

5.0 Soil Sampling

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

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B or 8260B and TPH (GRO/DRO) per USEPA 8015D. Laboratory analytical results are summarized in Table 2, and the analytical laboratory reports are included in Appendix C.

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

6.0 Laboratory Analytical Results

Laboratory analytical results for confirmation samples SC-1 through SC-11 reported benzene, total BTEX, and TPH (GRO/DRO) concentrations below the laboratory reporting limits, which are below the applicable JANEPO action levels. Laboratory analytical results are summarized in Table 2 and presented on Figure 3.

7.0 Conclusions

The Enterprise Jicarilla 126S #13 well tie pipeline release site is located in Unit Letter L, Section 12, Township 24 North, Range 4 West, in Rio Arriba County, New Mexico, on the Jicarilla Apache Nation. The release resulted from a broken valve on the end-of-line riser discovered on July 29, 2015. Subsequent to repair, approximately 322 cubic yards of hydrocarbon impacted soils were excavated and transported to the TNT Landfarm. Confirmation samples were collected from the sidewalls and base of the resultant excavation which measured approximately 33 feet by 24 feet by 10 to 12 feet in depth. Laboratory analytical results for the soil confirmation samples (SC-1 through SC-11) reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable JANEPO action levels.

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

8.0 Closure and Limitations

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

Tables

Table 1. NMOCD Site Ranking Determination
Enterprise Field Services, LLC
Jicarilla 126S #13 Well Tie Pipeline Release
Rio Arriba County, New Mexico

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	20	Elevation differential between location and wash in Cañada Larga south of the release location is approximately 20 feet.	NMOCD Online database, Billy Rice Canyon Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Billy Rice Canyon Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	Two unnamed, ephemeral washes located approximately 300 feet northwest and 350 feet southwest drain to the wash in Cañada Larga.	Billy Rice Canyon Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		30		

Table 2. Soil Sampling Results - VOCs, Benzene, Total BTEX, and TPH
Enterprise Field Services, LLC
Jicarilla 126S #13 Well Tie Pipeline Release
Rio Arriba County, New Mexico

Sample Name	Date	Location	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
JANEPO/NMOCD Action Level*				100	10	NE	NE	NE	50	100**	
SC-1	8/31/2015	Base (Southwest)	10 to 12	556	<0.035	<0.035	<0.035	<0.071	ND	<3.5	<9.8
SC-2	8/31/2015	Base (Southeast)	10 to 12	565	<0.036	<0.036	<0.036	<0.073	ND	<3.6	<10
SC-3	8/31/2015	West Wall (Upper)	1 to 6	59	<0.036	<0.036	<0.036	<0.071	ND	<3.6	<10
SC-4	8/31/2015	West Wall (Lower)	6 to 12	376	<0.034	<0.034	<0.034	<0.068	ND	<3.4	<9.9
SC-5	8/31/2015	South Wall (Upper)	1 to 5	397	<0.034	<0.034	<0.034	<0.068	ND	<3.4	<9.8
SC-6	8/31/2015	South Wall (Lower)	5 to 10	22	<0.035	<0.035	<0.035	<0.070	ND	<3.5	<9.8
SC-7	8/31/2015	East Wall (Upper)	1 to 6	286	<0.036	<0.036	<0.036	<0.073	ND	<3.6	<10
SC-8	8/31/2015	East Wall (Lower)	6 to 12	460	<0.036	<0.036	<0.036	<0.073	ND	<3.6	<10
SC-9	9/3/2015	North Wall (Upper)	1 to 6	22	<0.050	<0.050	<0.050	<0.099	ND	<5.0	<9.7
SC-10	9/3/2015	North Wall (Lower)	6 to 12	54	<0.048	<0.048	<0.048	<0.095	ND	<4.8	<10
SC-11	9/3/2015	Base (North Central)	12	310	<0.047	<0.047	<0.047	<0.093	ND	<4.7	<9.8

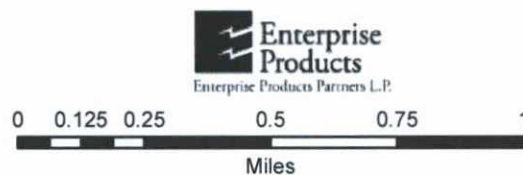
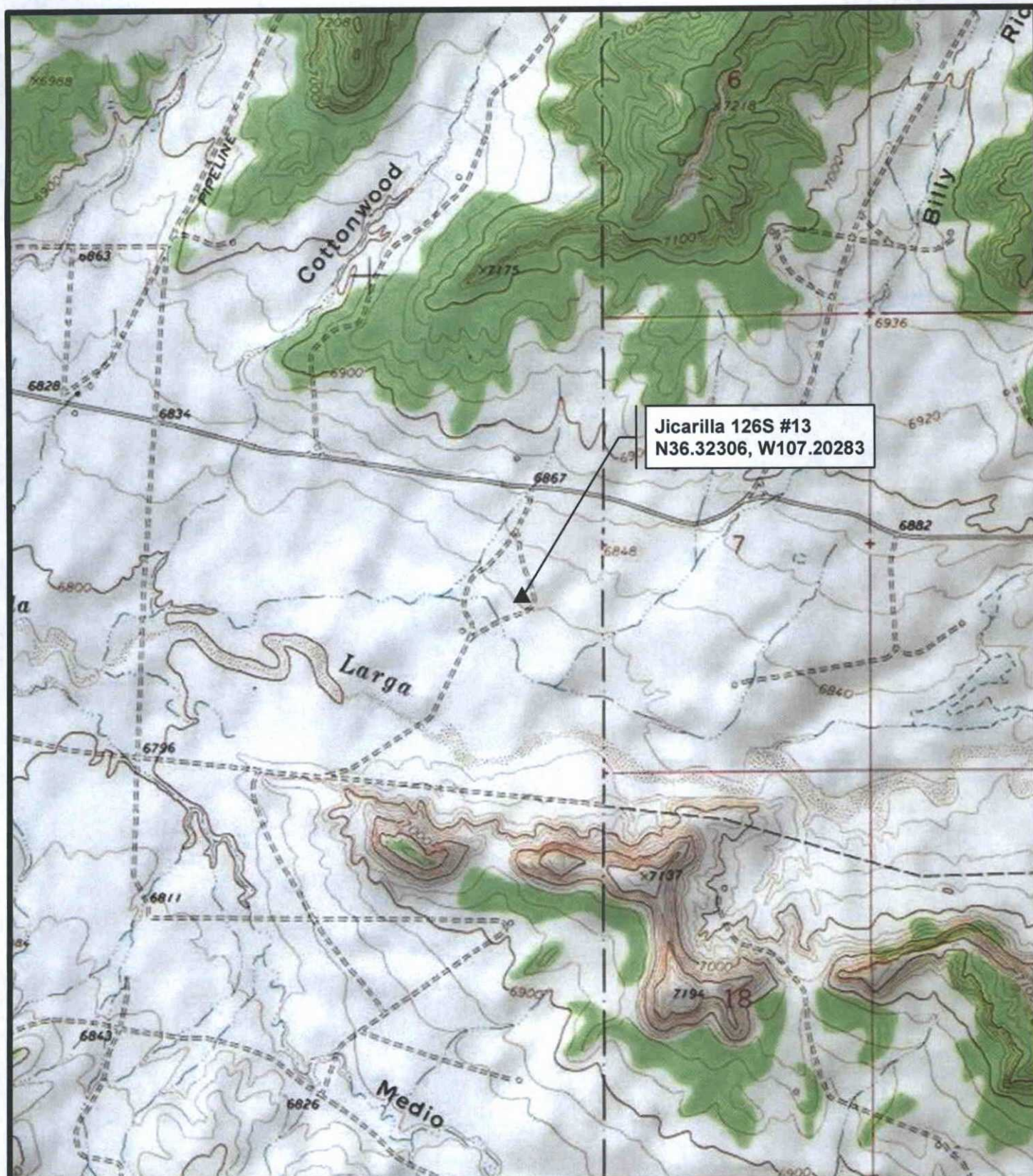
Notes: VOCs - volatile organic compounds
PID - photoionization detector
ft bgs - feet below grade surface
ppm - parts per million
mg/kg - milligrams per kilogram
NE - not-established

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

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

**Based on a site ranking of 10.

Figures



Rule Engineering, LLC
Solutions to Regulations for Industry

10/8/2015

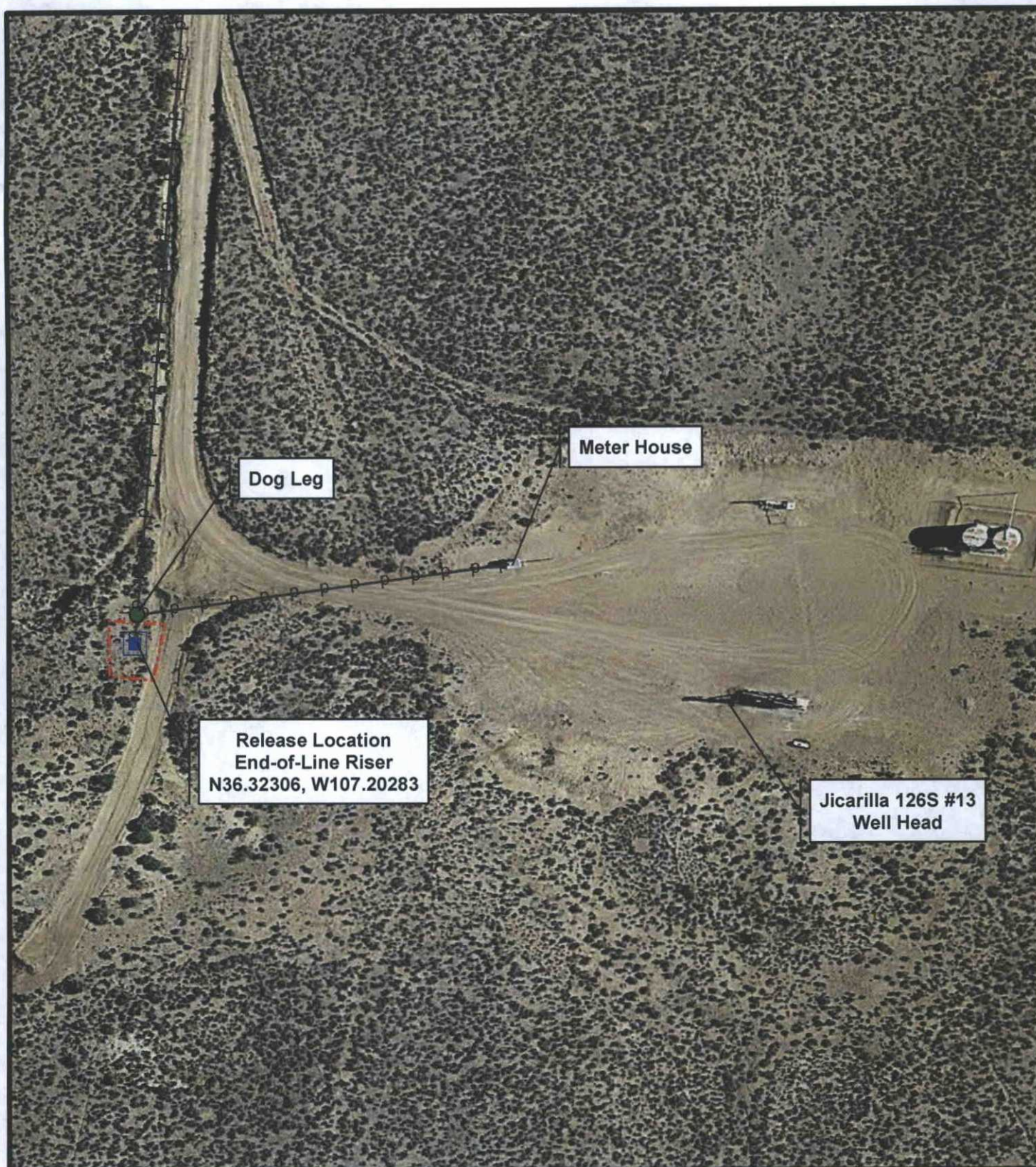


Topographic Site Map

Enterprise
Jicarilla 126S #13
Well Tie Pipeline

Figure 1

L-12-T24N-R04W
N36.32306, W107.20283
Billy Rice Canyon Quadrangle
Rio Arriba County, New Mexico



- Excavation Extent
- P P Well Tie Pipeline
- End of Line Riser
- Dog Leg

1:1,000

10/15/2015

Enterprise Products
Enterprise Products Partners L.P.

0 20 40 80 120 160
Feet

Rule Engineering, LLC
Solutions to Regulations for Industry

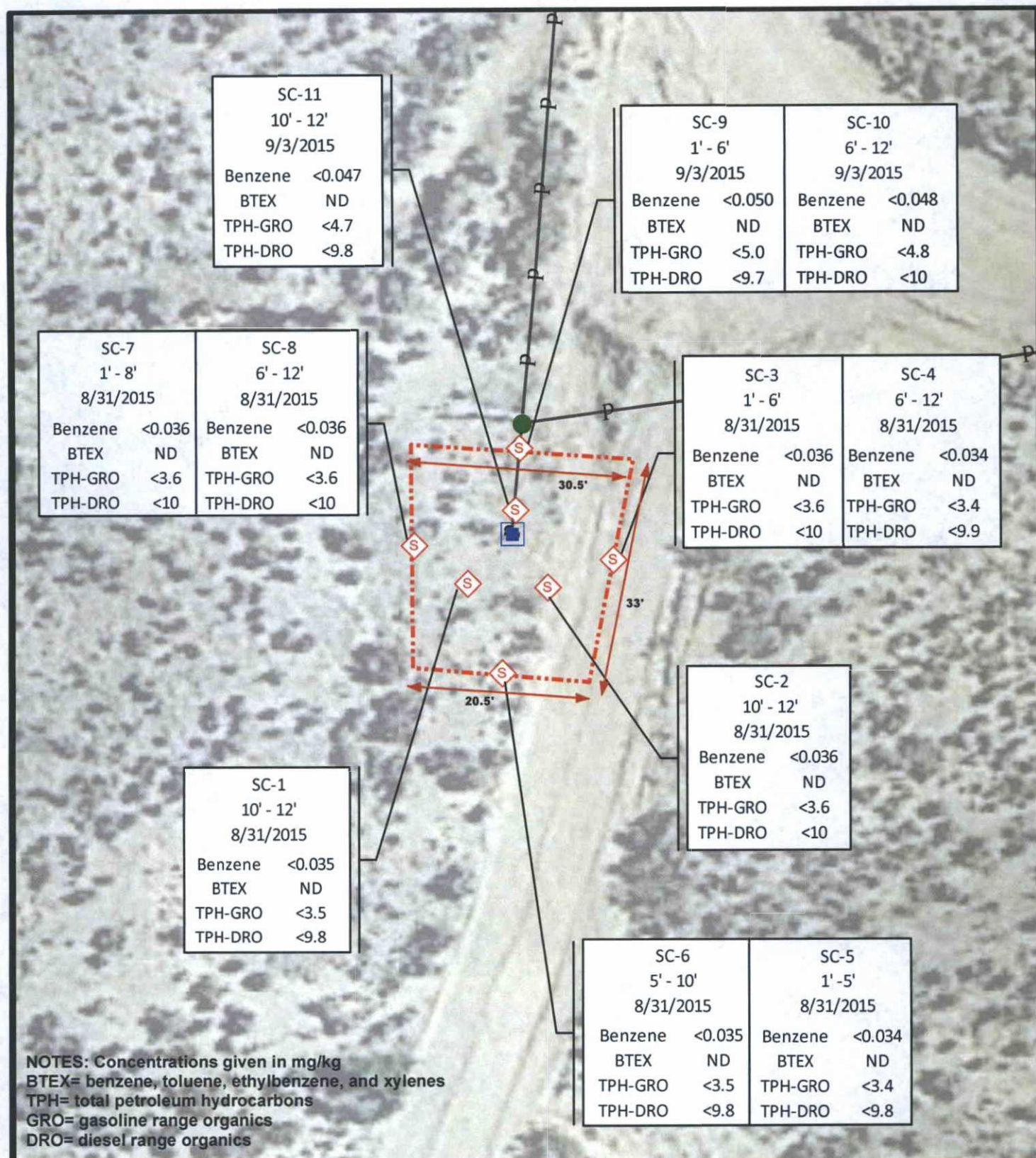


Aerial Site Map

Enterprise
Jicarilla 126S #13
Well Tie Pipeline

Figure 2

L-12-T24N-R04W
N36.32306, W107.20283
Billy Rice Canyon Quadrangle
Rio Arriba County, New Mexico



Approximate
Excavation
Extents



Sample Location



End-of-Line Riser/
Approximate
Release Location



Well Tie Pipeline



Dog Leg



0 5 10 20 30
Feet

Rule Engineering, LLC
Solutions to Regulations for Industry



Excavation Soil Analytical Map

Enterprise
Jicarilla 126S #13
Well Tie Pipeline

Figure 3

L-12-T24N-R04W
N36.32306, W107.20283
Rio Arriba County, New Mexico

Appendix A

Executed C-138 Solid Waste Acceptance Form

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:**
Apache 126S #13 Pipeline

3. **Location of Material (Street Address, City, State or ULSTR):**
Unit Letter L Section 12 Township 24 North Range 4 West; 36.323088, -107.202824

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

5. **Estimated Volume** 50 (yd³) bbls **Known Volume** (to be entered by the operator at the end of the haul) 322 (yd³) bbls

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

I, Thomas Long *Thomas Long* representative or authorized agent for Enterprise Field Services, LLC do hereby
PRINT & SIGN NAME **COMPANY NAME**

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

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not 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, 8-28-15 *Thomas Long*, representative for Enterprise Field Services, LLC authorize TNT Land Farm. to
Generator Signature
complete the required testing/sign the Generator Waste Testing Certification.

I, _____, 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, Lindrith 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: Leticia Schmitz

TITLE: Office Mng'r. DATE: 8-28-15


SIGNATURE: *[Signature]*
Surface Waste Management Facility Authorized Agent


TELEPHONE NO.: 505-320-2695


Appendix B
Photograph Log


Photograph Log
Jicarilla 126S #13 Well Tie Pipeline Release
Enterprise Field Services, LLC


Rule

Photograph #1	
Client: Enterprise	
Site Name: Jicarilla 126S #13 Well Tie Pipeline Release	
Date Photo Taken: August 28, 2015	
Release Location: N36.32306, W107.20283 L-12-24N-4W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing south, general view of initial excavation activities and end-of-line riser.

Photograph #2	
Client: Enterprise	
Site Name: Jicarilla 126S #13 Well Tie Pipeline Release	
Date Photo Taken: August 31, 2015	
Release Location: N36.32306, W107.20283 L-12-24N-4W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing west, view of southern portion of final excavation.

Photograph #3	
Client: Enterprise	
Site Name: Jicarilla 126S #13 Well Tie Pipeline Release	
Date Photo Taken: August 31, 2015	
Release Location: N36.32306, W107.20283 L-12-24N-4W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing north, view of southern portion of final excavation.

Photograph #4	
Client: Enterprise	
Site Name: Jicarilla 126S #13 Well Tie Pipeline Release	
Date Photo Taken: September 8, 2015	
Release Location: N36.32306, W107.20283 L-12-24N-4W Rio Arriba County, NM	
Photo Taken by: Alexandra Price	Description: Facing west, view of northern portion of final excavation.

Photograph #5	
Client: Enterprise	
Site Name: Jicarilla 126S #13 Well Tie Pipeline Release	
Date Photo Taken: September 8, 2015	
Release Location: N36.32306, W107.20283 L-12-24N-4W Rio Arriba County, NM	
Photo Taken by: Alexandra Price	
Description: Facing north, view of northern portion of final excavation.	

Appendix C

Analytical Laboratory Reports



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

September 02, 2015

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

RE: Enterprise Jicarilla 126S #13

OrderNo.: 1509002

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/1/2015 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 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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 1:40:00 PM

Lab ID: 1509002-001

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/1/2015 12:01:55 PM	21079
Surr: DNOP	87.7	57.9-140		%REC	1	9/1/2015 12:01:55 PM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	9/1/2015 10:10:15 AM	21059
Surr: BFB	83.8	75.4-113		%REC	1	9/1/2015 10:10:15 AM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.035		mg/Kg	1	9/1/2015 10:10:15 AM	21059
Toluene	ND	0.035		mg/Kg	1	9/1/2015 10:10:15 AM	21059
Ethylbenzene	ND	0.035		mg/Kg	1	9/1/2015 10:10:15 AM	21059
Xylenes, Total	ND	0.071		mg/Kg	1	9/1/2015 10:10:15 AM	21059
Surr: 4-Bromofluorobenzene	99.6	80-120		%REC	1	9/1/2015 10:10:15 AM	21059

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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 1:45:00 PM

Lab ID: 1509002-002

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 12:23:21 PM	21079
Surr: DNOP	94.3	57.9-140		%REC	1	9/1/2015 12:23:21 PM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/1/2015 10:35:35 AM	21059
Surr: BFB	84.8	75.4-113		%REC	1	9/1/2015 10:35:35 AM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.036		mg/Kg	1	9/1/2015 10:35:35 AM	21059
Toluene	ND	0.036		mg/Kg	1	9/1/2015 10:35:35 AM	21059
Ethylbenzene	ND	0.036		mg/Kg	1	9/1/2015 10:35:35 AM	21059
Xylenes, Total	ND	0.073		mg/Kg	1	9/1/2015 10:35:35 AM	21059
Surr: 4-Bromofluorobenzene	99.5	80-120		%REC	1	9/1/2015 10:35:35 AM	21059

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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 2:05:00 PM

Lab ID: 1509002-003

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 12:44:54 PM	21079
Surr: DNOP	97.0	57.9-140		%REC	1	9/1/2015 12:44:54 PM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/1/2015 11:00:57 AM	21059
Surr: BFB	85.5	75.4-113		%REC	1	9/1/2015 11:00:57 AM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.036		mg/Kg	1	9/1/2015 11:00:57 AM	21059
Toluene	ND	0.036		mg/Kg	1	9/1/2015 11:00:57 AM	21059
Ethylbenzene	ND	0.036		mg/Kg	1	9/1/2015 11:00:57 AM	21059
Xylenes, Total	ND	0.071		mg/Kg	1	9/1/2015 11:00:57 AM	21059
Surr: 4-Bromofluorobenzene	99.7	80-120		%REC	1	9/1/2015 11:00:57 AM	21059

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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 2:10:00 PM

Lab ID: 1509002-004

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/1/2015 1:06:19 PM	21079
Surr: DNOP	98.0	57.9-140		%REC	1	9/1/2015 1:06:19 PM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	9/1/2015 11:26:20 AM	21059
Surr: BFB	87.1	75.4-113		%REC	1	9/1/2015 11:26:20 AM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.034		mg/Kg	1	9/1/2015 11:26:20 AM	21059
Toluene	ND	0.034		mg/Kg	1	9/1/2015 11:26:20 AM	21059
Ethylbenzene	ND	0.034		mg/Kg	1	9/1/2015 11:26:20 AM	21059
Xylenes, Total	ND	0.068		mg/Kg	1	9/1/2015 11:26:20 AM	21059
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	9/1/2015 11:26:20 AM	21059

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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 2:15:00 PM

Lab ID: 1509002-005

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/1/2015 1:27:55 PM	21079
Surr: DNOP	98.2	57.9-140		%REC	1	9/1/2015 1:27:55 PM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	9/1/2015 11:51:47 AM	21059
Surr: BFB	88.4	75.4-113		%REC	1	9/1/2015 11:51:47 AM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.034		mg/Kg	1	9/1/2015 11:51:47 AM	21059
Toluene	ND	0.034		mg/Kg	1	9/1/2015 11:51:47 AM	21059
Ethylbenzene	ND	0.034		mg/Kg	1	9/1/2015 11:51:47 AM	21059
Xylenes, Total	ND	0.068		mg/Kg	1	9/1/2015 11:51:47 AM	21059
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	9/1/2015 11:51:47 AM	21059

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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-6

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 2:20:00 PM

Lab ID: 1509002-006

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/1/2015 11:26:31 AM	21079
Surr: DNOP	104	57.9-140		%REC	1	9/1/2015 11:26:31 AM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	9/1/2015 12:17:10 PM	21059
Surr: BFB	90.2	75.4-113		%REC	1	9/1/2015 12:17:10 PM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.035		mg/Kg	1	9/1/2015 12:17:10 PM	21059
Toluene	ND	0.035		mg/Kg	1	9/1/2015 12:17:10 PM	21059
Ethylbenzene	ND	0.035		mg/Kg	1	9/1/2015 12:17:10 PM	21059
Xylenes, Total	ND	0.070		mg/Kg	1	9/1/2015 12:17:10 PM	21059
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	9/1/2015 12:17:10 PM	21059

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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-7

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 2:25:00 PM

Lab ID: 1509002-007

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 11:53:51 AM	21079
Surr: DNOP	101	57.9-140		%REC	1	9/1/2015 11:53:51 AM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/1/2015 12:42:31 PM	21059
Surr: BFB	84.0	75.4-113		%REC	1	9/1/2015 12:42:31 PM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.036		mg/Kg	1	9/1/2015 12:42:31 PM	21059
Toluene	ND	0.036		mg/Kg	1	9/1/2015 12:42:31 PM	21059
Ethylbenzene	ND	0.036		mg/Kg	1	9/1/2015 12:42:31 PM	21059
Xylenes, Total	ND	0.073		mg/Kg	1	9/1/2015 12:42:31 PM	21059
Surr: 4-Bromofluorobenzene	96.1	80-120		%REC	1	9/1/2015 12:42:31 PM	21059

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 1509002

Date Reported: 9/2/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-8

Project: Enterprise Jicarilla 126S #13

Collection Date: 8/31/2015 2:30:00 PM

Lab ID: 1509002-008

Matrix: MEOH (SOIL)

Received Date: 9/1/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 12:21:10 PM	21079
Surr: DNOP	96.1	57.9-140		%REC	1	9/1/2015 12:21:10 PM	21079
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/1/2015 1:07:55 PM	21059
Surr: BFB	89.6	75.4-113		%REC	1	9/1/2015 1:07:55 PM	21059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.036		mg/Kg	1	9/1/2015 1:07:55 PM	21059
Toluene	ND	0.036		mg/Kg	1	9/1/2015 1:07:55 PM	21059
Ethylbenzene	ND	0.036		mg/Kg	1	9/1/2015 1:07:55 PM	21059
Xylenes, Total	ND	0.073		mg/Kg	1	9/1/2015 1:07:55 PM	21059
Surr: 4-Bromofluorobenzene	104	80-120		%REC	1	9/1/2015 1:07:55 PM	21059

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509002

02-Sep-15

Client: Rule Engineering LLC
Project: Enterprise Jicarilla 126S #13

Sample ID	MB-21079	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	21079	RunNo:	28580					
Prep Date:	9/1/2015	Analysis Date:	9/1/2015	SeqNo:	864594	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	9.5		10.00		95.1	57.9	140			

Sample ID	MB-21044	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	21044	RunNo:	28580					
Prep Date:	8/31/2015	Analysis Date:	9/1/2015	SeqNo:	864619	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		95.8	57.9	140			

Sample ID	LCS-21079	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	21079	RunNo:	28580					
Prep Date:	9/1/2015	Analysis Date:	9/1/2015	SeqNo:	864620	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.6	57.4	139			
Surr: DNOP	4.7		5.000		94.2	57.9	140			

Sample ID	LCS-21044	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	21044	RunNo:	28580					
Prep Date:	8/31/2015	Analysis Date:	9/1/2015	SeqNo:	864624	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		97.7	57.9	140			

Sample ID	MB-21010	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	21010	RunNo:	28580					
Prep Date:	8/27/2015	Analysis Date:	9/1/2015	SeqNo:	865408	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1		10.00		91.5	57.9	140			

Sample ID	LCS-21010	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	21010	RunNo:	28580					
Prep Date:	8/27/2015	Analysis Date:	9/1/2015	SeqNo:	865620	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.2	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#: 1509002

02-Sep-15

Client: Rule Engineering LLC
Project: Enterprise Jicarilla 126S #13

Sample ID	MB-21059	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	21059	RunNo:	28590					
Prep Date:	8/31/2015	Analysis Date:	9/1/2015	SeqNo:	865117	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		86.7	75.4	113			

Sample ID	LCS-21059	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	21059	RunNo:	28590					
Prep Date:	8/31/2015	Analysis Date:	9/1/2015	SeqNo:	865118	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	98.7	79.6	122			
Surr: BFB	940		1000		93.8	75.4	113			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509002

02-Sep-15

Client: Rule Engineering LLC

Project: Enterprise Jicarilla 126S #13

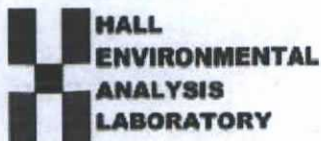
Sample ID	MB-21059		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	21059		RunNo:	28590			
Prep Date:	8/31/2015		Analysis Date:	9/1/2015		SeqNo:	865148		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID	LCS-21059		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	21059		RunNo:	28590			
Prep Date:	8/31/2015		Analysis Date:	9/1/2015		SeqNo:	865149		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.050	1.000	0	93.7	80	120			
Toluene	0.91	0.050	1.000	0	91.1	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.1	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.1	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Qualifiers:

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

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



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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1509002

RcptNo: 1

Received by/date:

LM

09/01/15

Logged By:

Celina Sessa

9/1/2015 8:06:00 AM

Celina Sessa

Completed By:

Celina Sessa

9/1/2015 8:51:11 AM

Celina Sessa

Reviewed By:

AG

09/01/15

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°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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

Client: Rule Engineering, LLC

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Drive, Suite 205 Enterprise, Jicarilla 126S #13

Farmington, NM B7401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other☐ EDD (Type)☐ Standard ☒ Rush Same Day

Project Name:

Project #:


Project Manager:

Sampler:

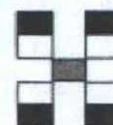
On Ice: ☒ Yes ☐ No

Sample Temperature: $24.0 \pm 0.1^\circ\text{C} = 2.5$

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTEH BTEX + MTEH	TPH 8015B TPH (Method)	EDB (Method)	PAH's (8310)	RCRA 8 Met	Anions (F, Cl)	8081 Pesticides	8260B (VOA)	8270 (Semi-VOCs)
1/31/15	1340	Soil	SC-1	4 oz Glass (1) Meth kit(1)	Non / Meth	-001	X	X							
1/31/15	1345	Soil	SC-2			-002	X	X							
1/31/15	1405	Soil	SC-3			-003	X	X							
1/31/15	1410	Soil	SC-4			-004	X	X							
1/31/15	1415	Soil	SC-5			-005	X	X							
1/31/15	1420	Soil	SC-6			-006	X	X							
1/31/15	1425	Soil	SC-7			-007	X	X							
1/31/15	1430	Soil	SC-B	I	I	-008	X	X							
<hr/>															

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/31/15	1800	Heath M. Woods	Christian Warte	8/31/15	1800
Date:	Time:	Relinquished by:	Received by:	Date	Time
8/31/15	1845	Christian Warte		09/01/15	0805

Remarks:	Direct bill to Enterprise
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HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]



**HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY**

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

September 14, 2015

Heather Woods

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

RE: Enterprise Jicarilla 126S #13

OrderNo.: 1509248

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/4/2015 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 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 1509248

Date Reported: 9/14/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-9

Project: Enterprise Jicarilla 126S #13

Collection Date: 9/3/2015 1:15:00 PM

Lab ID: 1509248-001

Matrix: SOIL

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/9/2015 4:30:24 PM	21177
Surr: BFB	109	70-130		%REC	1	9/9/2015 4:30:24 PM	21177
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/10/2015 9:32:46 PM	21185
Surr: DNOP	95.8	57.9-140		%REC	1	9/10/2015 9:32:46 PM	21185
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.050		mg/Kg	1	9/9/2015 4:30:24 PM	21177
Toluene	ND	0.050		mg/Kg	1	9/9/2015 4:30:24 PM	21177
Ethylbenzene	ND	0.050		mg/Kg	1	9/9/2015 4:30:24 PM	21177
Xylenes, Total	ND	0.099		mg/Kg	1	9/9/2015 4:30:24 PM	21177
Surr: 1,2-Dichloroethane-d4	96.5	70-130		%REC	1	9/9/2015 4:30:24 PM	21177
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	9/9/2015 4:30:24 PM	21177
Surr: Dibromofluoromethane	104	70-130		%REC	1	9/9/2015 4:30:24 PM	21177
Surr: Toluene-d8	90.0	70-130		%REC	1	9/9/2015 4:30:24 PM	21177

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 1509248

Date Reported: 9/14/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-10

Project: Enterprise Jicarilla 126S #13

Collection Date: 9/3/2015 12:30:00 PM

Lab ID: 1509248-002

Matrix: SOIL

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/9/2015 5:56:40 PM	21177
Surr: BFB	107	70-130		%REC	1	9/9/2015 5:56:40 PM	21177
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/10/2015 9:54:26 PM	21185
Surr: DNOP	106	57.9-140		%REC	1	9/10/2015 9:54:26 PM	21185
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.048		mg/Kg	1	9/9/2015 5:56:40 PM	21177
Toluene	ND	0.048		mg/Kg	1	9/9/2015 5:56:40 PM	21177
Ethylbenzene	ND	0.048		mg/Kg	1	9/9/2015 5:56:40 PM	21177
Xylenes, Total	ND	0.095		mg/Kg	1	9/9/2015 5:56:40 PM	21177
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%REC	1	9/9/2015 5:56:40 PM	21177
Surr: 4-Bromofluorobenzene	96.2	70-130		%REC	1	9/9/2015 5:56:40 PM	21177
Surr: Dibromofluoromethane	99.7	70-130		%REC	1	9/9/2015 5:56:40 PM	21177
Surr: Toluene-d8	88.2	70-130		%REC	1	9/9/2015 5:56:40 PM	21177

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 **1509248**Date Reported: **9/14/2015****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-11**Project:** Enterprise Jicarilla 126S #13**Collection Date:** 9/3/2015 12:20:00 PM**Lab ID:** 1509248-003**Matrix:** SOIL**Received Date:** 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/9/2015 6:25:25 PM	21177
Surr: BFB	112	70-130		%REC	1	9/9/2015 6:25:25 PM	21177
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/10/2015 10:16:13 PM	21185
Surr: DNOP	102	57.9-140		%REC	1	9/10/2015 10:16:13 PM	21185
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.047		mg/Kg	1	9/9/2015 6:25:25 PM	21177
Toluene	ND	0.047		mg/Kg	1	9/9/2015 6:25:25 PM	21177
Ethylbenzene	ND	0.047		mg/Kg	1	9/9/2015 6:25:25 PM	21177
Xylenes, Total	ND	0.093		mg/Kg	1	9/9/2015 6:25:25 PM	21177
Surr: 1,2-Dichloroethane-d4	91.8	70-130		%REC	1	9/9/2015 6:25:25 PM	21177
Surr: 4-Bromofluorobenzene	95.7	70-130		%REC	1	9/9/2015 6:25:25 PM	21177
Surr: Dibromofluoromethane	98.9	70-130		%REC	1	9/9/2015 6:25:25 PM	21177
Surr: Toluene-d8	89.3	70-130		%REC	1	9/9/2015 6:25:25 PM	21177

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509248

14-Sep-15

Client: Rule Engineering LLC
Project: Enterprise Jicarilla 126S #13

Sample ID	MB-21185	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	21185	RunNo:	28740					
Prep Date:	9/8/2015	Analysis Date:	9/10/2015	SeqNo:	871391	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	11		10.00		110	57.9	140			

Sample ID	LCS-21185	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	21185	RunNo:	28740					
Prep Date:	9/8/2015	Analysis Date:	9/10/2015	SeqNo:	871392	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	110	57.4	139			
Surr: DNOP	5.7		5.000		113	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#: 1509248

14-Sep-15

Client: Rule Engineering LLC

Project: Enterprise Jicarilla 126S #13

Sample ID	1509248-001ams	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-9	Batch ID:	21177	RunNo:	28737					
Prep Date:	9/8/2015	Analysis Date:	9/9/2015	SeqNo:	871535	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9950	0	109	70	130			
Toluene	0.97	0.050	0.9950	0	97.3	65	138			
Ethylbenzene	1.1	0.050	0.9950	0	107	70	130			
Xylenes, Total	3.2	0.10	2.985	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.4975		95.1	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.4975		95.1	70	130			
Surr: Dibromofluoromethane	0.50		0.4975		99.9	70	130			
Surr: Toluene-d8	0.44		0.4975		88.8	70	130			

Sample ID	1509248-001amsd	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-9	Batch ID:	21177	RunNo:	28737					
Prep Date:	9/8/2015	Analysis Date:	9/9/2015	SeqNo:	871536	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9970	0	108	70	130	1.53	20	
Toluene	0.98	0.050	0.9970	0	98.5	65	138	1.52	20	
Ethylbenzene	1.0	0.050	0.9970	0	105	70	130	1.61	0	
Xylenes, Total	3.2	0.10	2.991	0	107	70	130	0.480	0	
Surr: 1,2-Dichloroethane-d4	0.49		0.4985		98.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.48		0.4985		95.6	70	130	0	0	
Surr: Dibromofluoromethane	0.51		0.4985		103	70	130	0	0	
Surr: Toluene-d8	0.46		0.4985		91.8	70	130	0	0	

Sample ID	lcs-21177	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	21177	RunNo:	28737					
Prep Date:	9/8/2015	Analysis Date:	9/9/2015	SeqNo:	871550	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	0.88	0.050	1.000	0	87.9	70	130			
Ethylbenzene	0.95	0.050	1.000	0	94.7	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.4	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.0	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.45		0.5000		90.1	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#: 1509248

14-Sep-15

Client: Rule Engineering LLC

Project: Enterprise Jicarilla 126S #13

Sample ID mb-21177

SampType: MBLK

TestCode: EPA Method 8260B: Volatiles Short List

Client ID: PBS

Batch ID: 21177

RunNo: 28737

Prep Date: 9/8/2015

Analysis Date: 9/9/2015

SeqNo: 871551

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	0.48		0.5000		95.2	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.45		0.5000		90.1	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#: 1509248

14-Sep-15

Client: Rule Engineering LLC

Project: Enterprise Jicarilla 126S #13

Sample ID	1509248-002ams	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SC-10	Batch ID:	21177	RunNo:	28737					
Prep Date:	9/8/2015	Analysis Date:	9/9/2015	SeqNo:	871406	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.8	23.92	0	102	54.9	131			
Surr: BFB	530		478.5		112	70	130			

Sample ID	1509248-002amsd	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SC-10	Batch ID:	21177	RunNo:	28737					
Prep Date:	9/8/2015	Analysis Date:	9/9/2015	SeqNo:	871407	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.90	0	97.0	54.9	131	5.00	20	
Surr: BFB	540		478.0		112	70	130	0	0	

Sample ID	lcs-21177	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	21177	RunNo:	28737					
Prep Date:	9/8/2015	Analysis Date:	9/9/2015	SeqNo:	871419	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.2	70	123			
Surr: BFB	540		500.0		109	70	130			

Sample ID	mb-21177	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	21177	RunNo:	28737					
Prep Date:	9/8/2015	Analysis Date:	9/9/2015	SeqNo:	871420	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	550		500.0		109	70	130			

Sample ID	lcs-21199	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	21199	RunNo:	28788					
Prep Date:	9/9/2015	Analysis Date:	9/10/2015	SeqNo:	873066	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	550		500.0		109	70	130			

Sample ID	mb-21199	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	21199	RunNo:	28788					
Prep Date:	9/9/2015	Analysis Date:	9/10/2015	SeqNo:	873067	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	550		500.0		110	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



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: **1509248**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

09/04/15
9/4/2015 7:00:00 AM

Completed By: **Lindsay Mangin**

9/8/2015 7:17:17 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°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	4.1	Good	Yes			

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. Suite 205 Enterprise Jicarilla 1265 #13

Farmington, NM 87401

Phone #: (505) 716-2787

Email or Fax#: hwoods@ruleengineering.com

2A/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type)

Turn-Around Time:

☒ **Standard** ☐ **Rush**

Project Name:

Project #:

Project Manager:

Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No


Sample Temperature: 41

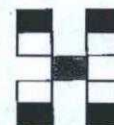
[illegible]

Date:	Time:	Relinquished by:
7/3/18	2051	Heath M. Woods

Date:	Time:	Relinquished by:
3/15	2:00	Christa Walles

Received by: Nathan H. Wacht Date 9/3/15 Time 2:05

Received by:	Date	Time
	09/04/15	0700



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

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

Remarks: Direct bill to Enterprise
WO: N22193
Attn: Tom Long / Miles Moore

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

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

NOV 13 2015

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

Form C-141
Revised August 8, 2011

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
------------------	---------------	-----------------	-------------	-----------------------	---------------------	------------------------	-------------------	----------------------

Latitude 36.438860 Longitude -107.417726

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release 0.96 MCF Gas; 5-10 BBLs Liquids	Volume Recovered: None
Source of Release: 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 were completed on August 12, 2015.

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 43 feet long by 31 feet wide by 9.5 feet deep. Approximately 404 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation approved land farm facility. A third party corrective action report is included with this "Final" C-141.

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

Signature: <i>Jon Fields</i>	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Director, Environmental	Approval Date: <u>12/28/15</u>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>11-6-2015</u> Phone: (713)381-6684		

* Attach Additional Sheets If Necessary

#NCS1523031446

(50)



OIL CONS. DIV DIST. 3

NOV 13 2015

CORRECTIVE ACTION REPORT

Property:

**Lateral K-51 (2015) Pipeline Release
SE 1/4, S36 T26N R6W
Rio Arriba County, New Mexico**

September 29, 2015
Apex Project No. 7250415018

Prepared for:

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

Prepared by:

A handwritten signature in blue ink, reading 'Rane Deechilly', written over a horizontal line.

Ranee Deechilly
Environmental Scientist

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

Kyle Summers, CPG
Branch Manager/Senior Geologist

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	Figure 2 – Site Vicinity Map
	Figure 3 – Site Map
Appendix B:	Executed C-138 Solid Waste Acceptance Form
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CORRECTIVE ACTION REPORT

Lateral K-51 (2015) Pipeline Release

SE 1/4, S36 T26N R6W
Rio Arriba County, New Mexico

Apex Project No. 7250415018

1.0 INTRODUCTION

1.1 Site Description & Background

The Lateral K-51 pipeline release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the southeast (SE) ¼ of Section 36 in Township 26 North and Range 6 West in rural Rio Arriba County, New Mexico (36.43886N, 107.41772W), 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 east to west.

On July 31, 2015, a natural gas pipeline release was reported by Enterprise personnel. On August 10, 2015, Enterprise initiated excavation activities to facilitate the repair of the pipeline, and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired by replacing approximately 20 feet of pipe. Natural gas was released from the pipeline as a result of internal corrosion. The surface expression of the release was characterized by distressed vegetation in the vicinity of the release.

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

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	
Total Ranking Score			40

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:

- Due to the proximity of Tapicito Creek, and based on recorded depth to groundwater from a site located at a similar proximity to Tapicito Creek and slightly over one mile to the west, depth to groundwater is anticipated to be less than 50 feet bgs, resulting in a ranking of "20" for depth to groundwater.
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site. These proximities result in a wellhead protection area ranking of "0".
- The release point is located approximately 200 feet from Tapicito Creek, resulting in a distance to surface water ranking of "20".

3.0 RESPONSE ACTIONS

3.1 Soil Excavation Activities

Beginning on August 10, 2015, Enterprise initiated excavation activities at the Site to repair the subsurface leak, and remediate potential hydrocarbon impact. The pipeline was subsequently repaired. Natural gas was released from the pipeline as a result of internal corrosion. The surface expression of the release was characterized by distressed vegetation in the vicinity of the release. During corrective action activities, TRC Construction, Inc., provided heavy equipment and labor support. Kyle Summers and Rane Deechilly, Apex environmental professionals, provided environmental support.

Excavation activities to expose the pipeline were completed on August 10, 2015, and were completed on August 12, 2015. The final excavation measured approximately 43 feet long by 31 feet wide at the maximum extents, with a total depth ranging from six (6) feet to 9.5 feet bgs. Confirmation soil samples SC-1 through SC-4 were collected from the eastern portion of the excavation on August 10, 2015, and confirmation samples C-1 through C-11 were collected from the remaining portions of the excavation on August 12, 2015.

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

A total of approximately 404 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 contoured to surrounding grade.

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

3.2 Soil Sampling Program

Apex screened head-space samples of Site soils with a photoionization detector (PID) fitted with a 10.6 eV lamp to evaluate volatile organic compounds (VOCs) and aid in determining the excavation limits.

Apex's soil sampling program included the collection of a fifteen (15) confirmation soil samples (SC-1 through SC-4) and (C-1 through C-11) from the resulting excavation for laboratory analysis. 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 form and laboratory data sheets are provided in Appendix E.

4.0 DATA EVALUATION

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

4.1 Confirmation Soil Samples

Apex compared the BTEX and TPH concentrations or laboratory reporting limits associated with the final confirmation samples (SC-1 through SC-4) and (C-1 through C-11) collected from the excavation to the OCD RALs for sites having a total ranking score of "40".

- The laboratory analyses of confirmation samples collected from soils remaining in place did not indicate benzene concentrations above the laboratory reporting limits, which are below the OCD RAL of 10 milligram per kilogram (mg/kg).

- The laboratory analyses of the confirmation samples collected from soils remaining in place indicate total BTEX concentrations ranging from below the laboratory reporting limits to 0.30 mg/kg (C-8), 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 29 mg/kg (C-11), which are below the OCD RAL of 100 mg/kg for a Site ranking of "40".

The stockpiled soils resulting from the excavation 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-51 pipeline release site is located within the Enterprise ROW in the SE ¼ of Section 36 in Township 26 North and Range 6 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 east to west.

On July 31, 2015, a natural gas pipeline release was reported by Enterprise personnel. On August 10, 2015, Enterprise initiated excavation activities to facilitate the repair of the pipeline, and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired by replacing approximately 20 feet of pipe. Natural gas was released from the pipeline as a result of internal corrosion. The surface expression of the release was characterized by distressed vegetation in the vicinity of the release.

- The primary objective of the corrective actions was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD RALs using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.
- The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated silty sand and silty clay.
- The final excavation measured approximately 43 feet long by 31 feet wide at the maximum extents, with a total depth of approximately 9.5 feet bgs.
- Prior to backfilling, fifteen (15) confirmation samples soil samples were collected from the resulting final excavation for laboratory analyses. 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 404 cubic yards of hydrocarbon affected soils were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with clean imported fill, and contoured to 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.

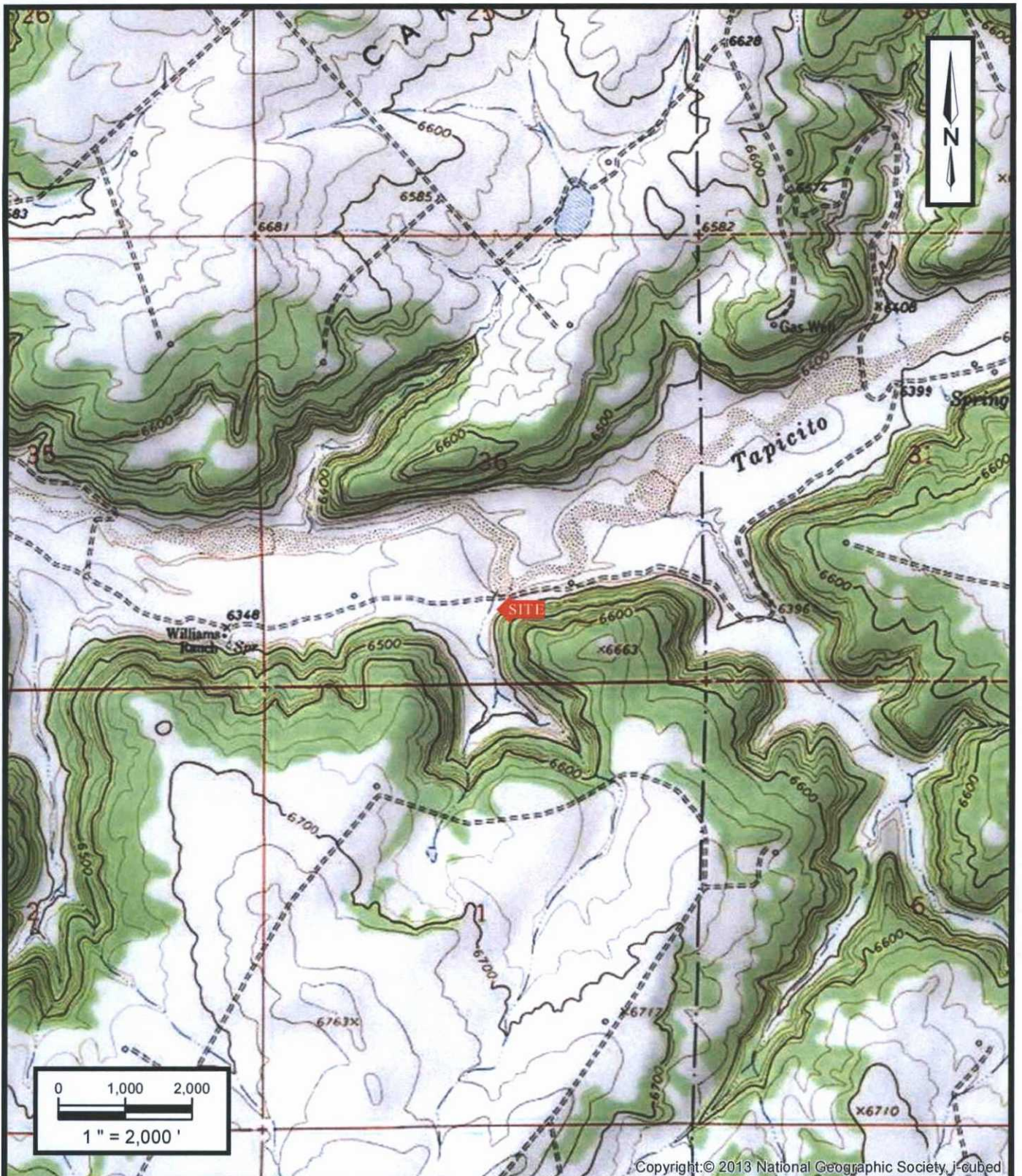


6.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE

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.



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Lateral K-51 (July 2015) Pipeline Release

SE1/4 Sec36 T26N R6W
Rio Arriba County, New Mexico
36.43886N, 107.41772W

Project No. 7250415018



Apex TITAN, Inc.

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

A Subsidiary of Apex Companies, LLC

FIGURE 1

Topographic Map
Gonzales Mesa, NM Quadrangle
1963



Lateral K-51 (July 2015) Pipeline Release

SE1/4 Sec36 T26N R6W
Rio Arriba County, New Mexico
36.43886N, 107.41772W

Project No. 7250415018



Apex TITAN, Inc.

606 South Rio Grande, Suite A

Aztec, NM 87410

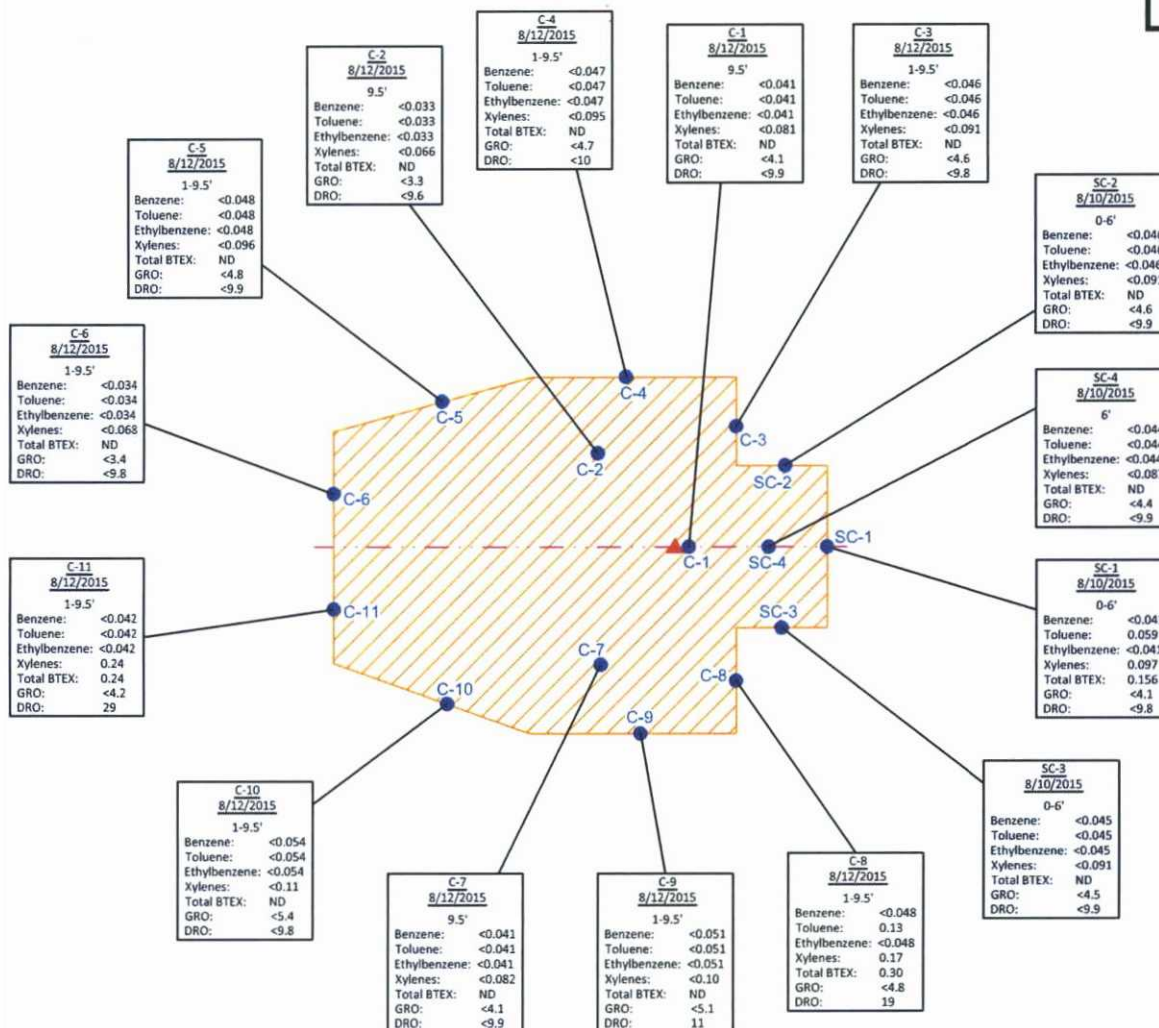
Phone: (505) 334-5200

www.apexcos.com

A Subsidiary of Apex Companies, LLC

FIGURE 2

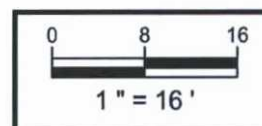
Site Vicinity Map



LEGEND:

- APPROXIMATE PIPELINE LOCATION
- SAMPLE LOCATION
- RELEASE POINT
- EXTENT OF EXCAVATION

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



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SE1/4 Sec36 T26N R6W
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606 S. Rio Grande, Suite A
Aztec, New Mexico 87410
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FIGURE 3

Site Map

Project No. 7250415018

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

97057-0730

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 K-51 Pipeline
3. Location of Material (Street Address, City, State or ULSTR): Unit Letter O Section 36 Township 26 North Range 6 West; 36.438860, -107.417726
4. Source and Description of Waste: Hydrocarbon impacted soils associated with a release from a natural gas pipeline.
5. Estimated Volume 50 yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) 404 yd ³ / bbls

Aug 2015

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

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

- ☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not 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, 8-11-15 *Thomas Long*, representative for Enterprise Field Services, LLC authorize Envirotech, Inc. to
Generator Signature
complete the required testing/sign the Generator Waste Testing Certification.

I, G. J. [Signature], 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.

6. Transporter: ~~West State Energy Contractors~~ *Cotant, LLC, Rock Springs, Envirotech, TRC, Kelly Oilfield, 3-E Energy, HBL*

OCD Permitted Surface Waste Management Facility
Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility * Permit #: NM 01-0011
Address of Facility: Hilltop, NM

Method of Treatment and/or Disposal:

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

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: E. L. Liese

TITLE: Landfarm Administrator DATE: 8-14-15

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615

Photograph 1

View of the partially exposed Lateral K-51 pipeline and initial excavation, facing north.

**Photograph 2**

View of the final excavation and repaired pipeline, facing north.

**Photograph 3**

View of the final excavation, facing east.



Photograph 4

View of the final excavation, facing west.





TABLE 1
Lateral K-51 (July 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	
Excavation Confirmation Samples									
SC-1	8.10.15	0 to 6	<0.041	0.059	<0.041	0.097	0.156	<4.1	<9.8
SC-2	8.10.15	0 to 6	<0.046	<0.046	<0.046	<0.091	ND	<4.6	<9.9
SC-3	8.10.15	0 to 6	<0.045	<0.045	<0.045	<0.091	ND	<4.5	<9.9
SC-4	8.10.15	6	<0.044	<0.044	<0.044	<0.087	ND	<4.4	<9.9
C-1	8.12.15	9.5	<0.041	<0.041	<0.041	<0.081	ND	<4.1	<9.9
C-2	8.12.15	9.5	<0.033	<0.033	<0.033	<0.066	ND	<3.3	<9.6
C-3	8.12.15	1 to 9.5	<0.046	<0.046	<0.046	<0.091	ND	<4.6	<9.8
C-4	8.12.15	1 to 9.5	<0.047	<0.047	<0.047	<0.095	ND	<4.7	<10
C-5	8.12.15	1 to 9.5	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.9
C-6	8.12.15	1 to 9.5	<0.034	<0.034	<0.034	<0.068	ND	<3.4	<9.8
C-7	8.12.15	9.5	<0.041	<0.041	<0.041	<0.082	ND	<4.1	<9.9
C-8	8.12.15	1 to 9.5	<0.048	0.13	<0.048	0.17	0.30	<4.8	19
C-9	8.12.15	1 to 9.5	<0.051	<0.051	<0.051	<0.10	ND	<5.1	11
C-10	8.12.15	1 to 9.5	<0.054	<0.054	<0.054	<0.11	ND	<5.4	<9.8
C-11	8.12.15	1 to 9.5	<0.042	<0.042	<0.042	0.24	0.24	<4.2	29

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

ND = Not Detected above the Laboratory Reporting Limits

NE = Not established



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

August 12, 2015

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

RE: K-51 (2015)

OrderNo.: 1508403

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/11/2015 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 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 1508403

Date Reported: 8/12/2015

CLIENT: APEX TITAN

Client Sample ID: SP-1

Project: K-51 (2015)

Collection Date: 8/10/2015 2:40:00 PM

Lab ID: 1508403-001

Matrix: MEOH (SOIL)

Received Date: 8/11/2015 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/11/2015 11:05:14 AM	20702
Surr: DNOP	70.9	57.9-140		%REC	1	8/11/2015 11:05:14 AM	20702
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	4.6	4.4		mg/Kg	1	8/11/2015 10:35:15 AM	20686
Surr: BFB	96.5	75.4-113		%REC	1	8/11/2015 10:35:15 AM	20686
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.044		mg/Kg	1	8/11/2015 10:35:15 AM	20686
Toluene	0.11	0.044		mg/Kg	1	8/11/2015 10:35:15 AM	20686
Ethylbenzene	0.050	0.044		mg/Kg	1	8/11/2015 10:35:15 AM	20686
Xylenes, Total	0.65	0.087		mg/Kg	1	8/11/2015 10:35:15 AM	20686
Surr: 4-Bromofluorobenzene	96.0	80-120		%REC	1	8/11/2015 10:35:15 AM	20686

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508403

12-Aug-15

Client: APEX TITAN

Project: K-51 (2015)

Sample ID	MB-20686	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	20686	RunNo:	28106					
Prep Date:	8/10/2015	Analysis Date:	8/11/2015	SeqNo:	846886	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		89.6	75.4	113			

Sample ID	LCS-20686	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	20686	RunNo:	28106					
Prep Date:	8/10/2015	Analysis Date:	8/11/2015	SeqNo:	846887	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	97.8	79.6	122			
Surr: BFB	1000		1000		99.7	75.4	113			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508403

12-Aug-15

Client: APEX TITAN

Project: K-51 (2015)

Sample ID	MB-20686	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	20686	RunNo:	28106					
Prep Date:	8/10/2015	Analysis Date:	8/11/2015	SeqNo:	846916	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	0.95		1.000		95.5	80	120			

Sample ID	LCS-20686	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	20686	RunNo:	28106					
Prep Date:	8/10/2015	Analysis Date:	8/11/2015	SeqNo:	846917	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	76.6	128			
Toluene	1.0	0.050	1.000	0	101	75	124			
Ethylbenzene	1.0	0.050	1.000	0	99.8	79.5	126			
Xylenes, Total	3.2	0.10	3.000	0	107	78.8	124			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.0	80	120			

Qualifiers:

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

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

Sample Log-In Check List

Client Name: **APEX AZTEC**

Work Order Number: 1508403

RootNo: 1

Received by/date:

Logged By **Ashley Gallegos**

8/11/2015 7:40:00 AM

Completed By: Ashley Gallegos

8/11/2015 8:07:01 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 <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 6. Sample(s) in proper container(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Sufficient sample volume for indicated test(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Was preservative added to bottles? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 10. VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA Vials <input checked="" type="checkbox"/> |
| 11. Were any sample containers received broken? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | # of preserved bottles checked for pH: _____
(<2 or >12 unless noted) |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Adjusted? _____ |
| 13. Are matrices correctly identified on Chain of Custody? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Checked by: _____ |
| 14. Is it clear what analyses were requested? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

Special Handling (if applicable)

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

Person Notified

Date _____

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding


Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD

 APEX Office Location <u>Aztec</u>		Laboratory: <u>Hall</u>		ANALYSIS REQUESTED <div style="transform: rotate(-45deg); transform-origin: center;"> BTEX 8421 TPH GRD/ORD 8415 </div>										Lab use only Due Date:	
		Address: <u>Ag</u>												Temp. of coolers when received (C°): <u>1.0</u>	
Contact:		Phone:												1 2 3 4 5 Page <u>1</u> of <u>1</u>	
Project Manager <u>Summer!</u>		PO/SO #: <u>7250415018</u>													
Sampler's Name <u>Nyle Summer!</u>		Sampler's Signature <u>[Signature]</u>													
Proj. No.		Project Name <u>K-51 (2015)</u>													
		No/Type of Containers													

Matrix	Date	Time	Cool	Grab	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	8/10/15	1440	X		SP-1								1508403 - 001
<div style="transform: rotate(-30deg); transform-origin: center;"> NFS NS </div>													

Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>Same Day</u>			
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>8/10/15</u>	Time: <u>1700</u>	Received by (Signature) <u>[Signature]</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>8/10/15</u>	Time: <u>1750</u>	Received by (Signature) <u>[Signature]</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>8/10/15</u>	Time: <u>2030</u>	Received by (Signature) <u>[Signature]</u>

NOTES: Bill Tom Long
Non AFE # N 22228
RACH

Matrix Container: WW - Wastewater VOA - 40 ml vial W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - sludge O - Oil
 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

August 12, 2015

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

RE: K-51 (2015)

OrderNo.: 1508406

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/11/2015 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 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 1508406

Date Reported: 8/12/2015

CLIENT: APEX TITAN

Client Sample ID: SC-1

Project: K-51 (2015)

Collection Date: 8/10/2015 2:00:00 PM

Lab ID: 1508406-001

Matrix: MEOH (SOIL)

Received Date: 8/11/2015 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/11/2015 11:26:38 AM	20702
Surr: DNOP	86.2	57.9-140		%REC	1	8/11/2015 11:26:38 AM	20702
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	8/11/2015 11:00:04 AM	20686
Surr: BFB	88.5	75.4-113		%REC	1	8/11/2015 11:00:04 AM	20686
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.041		mg/Kg	1	8/11/2015 11:00:04 AM	20686
Toluene	0.059	0.041		mg/Kg	1	8/11/2015 11:00:04 AM	20686
Ethylbenzene	ND	0.041		mg/Kg	1	8/11/2015 11:00:04 AM	20686
Xylenes, Total	0.097	0.083		mg/Kg	1	8/11/2015 11:00:04 AM	20686
Surr: 4-Bromofluorobenzene	94.3	80-120		%REC	1	8/11/2015 11:00:04 AM	20686

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 1508406

Date Reported: 8/12/2015

CLIENT: APEX TITAN

Client Sample ID: SC-2

Project: K-51 (2015)

Collection Date: 8/10/2015 2:10:00 PM

Lab ID: 1508406-002

Matrix: MEOH (SOIL)

Received Date: 8/11/2015 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/11/2015 11:47:55 AM	20702
Surr: DNOP	82.6	57.9-140		%REC	1	8/11/2015 11:47:55 AM	20702
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/11/2015 11:24:52 AM	20686
Surr: BFB	90.5	75.4-113		%REC	1	8/11/2015 11:24:52 AM	20686
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	8/11/2015 11:24:52 AM	20686
Toluene	ND	0.046		mg/Kg	1	8/11/2015 11:24:52 AM	20686
Ethylbenzene	ND	0.046		mg/Kg	1	8/11/2015 11:24:52 AM	20686
Xylenes, Total	ND	0.091		mg/Kg	1	8/11/2015 11:24:52 AM	20686
Surr: 4-Bromofluorobenzene	96.7	80-120		%REC	1	8/11/2015 11:24:52 AM	20686

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 1508406

Date Reported: 8/12/2015

CLIENT: APEX TITAN

Client Sample ID: SC-3

Project: K-51 (2015)

Collection Date: 8/10/2015 2:20:00 PM

Lab ID: 1508406-003

Matrix: MEOH (SOIL)

Received Date: 8/11/2015 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/11/2015 12:09:26 PM	20702
Surr: DNOP	78.4	57.9-140		%REC	1	8/11/2015 12:09:26 PM	20702
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	8/11/2015 11:49:46 AM	R28106
Surr: BFB	89.0	75.4-113		%REC	1	8/11/2015 11:49:46 AM	R28106
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.045		mg/Kg	1	8/11/2015 11:49:46 AM	20686
Toluene	ND	0.045		mg/Kg	1	8/11/2015 11:49:46 AM	20686
Ethylbenzene	ND	0.045		mg/Kg	1	8/11/2015 11:49:46 AM	20686
Xylenes, Total	ND	0.091		mg/Kg	1	8/11/2015 11:49:46 AM	20686
Surr: 4-Bromofluorobenzene	95.2	80-120		%REC	1	8/11/2015 11:49:46 AM	20686

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 1508406

Date Reported: 8/12/2015

CLIENT: APEX TITAN

Client Sample ID: SC-4

Project: K-51 (2015)

Collection Date: 8/10/2015 2:30:00 PM

Lab ID: 1508406-004

Matrix: MEOH (SOIL)

Received Date: 8/11/2015 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/11/2015 12:30:47 PM	20702
Surr: DNOP	81.3	57.9-140		%REC	1	8/11/2015 12:30:47 PM	20702
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	8/11/2015 12:14:37 PM	R28106
Surr: BFB	87.9	75.4-113		%REC	1	8/11/2015 12:14:37 PM	R28106
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.044		mg/Kg	1	8/11/2015 12:14:37 PM	20686
Toluene	ND	0.044		mg/Kg	1	8/11/2015 12:14:37 PM	20686
Ethylbenzene	ND	0.044		mg/Kg	1	8/11/2015 12:14:37 PM	20686
Xylenes, Total	ND	0.087		mg/Kg	1	8/11/2015 12:14:37 PM	20686
Surr: 4-Bromofluorobenzene	93.4	80-120		%REC	1	8/11/2015 12:14:37 PM	20686

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508406

12-Aug-15

Client: APEX TITAN

Project: K-51 (2015)

Sample ID	MB-20686		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 20686		RunNo: 28106					
Prep Date:	8/10/2015		Analysis Date: 8/11/2015		SeqNo: 846886		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		89.6	75.4	113			

Sample ID	LCS-20686		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 20686		RunNo: 28106					
Prep Date:	8/10/2015		Analysis Date: 8/11/2015		SeqNo: 846887		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	97.8	79.6	122			
Surr: BFB	1000		1000		99.7	75.4	113			

Sample ID	5ML RB	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID: R28106			RunNo: 28106					
Prep Date:		Analysis Date: 8/11/2015			SeqNo: 846909		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		89.9	75.4	113			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: R28106		RunNo: 28106					
Prep Date:			Analysis Date: 8/11/2015		SeqNo: 846910		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	98.3	79.6	122			
Surr: BFB	1000		1000		101	75.4	113			

Sample ID	1508406-003AMS		SampType:	MS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	SC-3		Batch ID:	R28106		RunNo:	28106				
Prep Date:			Analysis Date:	8/11/2015		SeqNo:	846911		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	62.5	151				
Surr: BFB	1000		1000		102	75.4	113				

Sample ID	1508406-003AMSD			SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	SC-3			Batch ID:	R28106		RunNo:	28106			
Prep Date:				Analysis Date:	8/11/2015		SeqNo:	846912		Units:	mg/Kg
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508406

12-Aug-15

Client: APEX TITAN

Project: K-51 (2015)

Sample ID	1508406-003AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	SC-3	Batch ID:	R28106	RunNo:	28106						
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	846912	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	99.1	62.5	151	6.78	22.1		
Surr: BFB	980		1000		97.7	75.4	113	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#: 1508406

12-Aug-15

Client: APEX TITAN

Project: K-51 (2015)

Sample ID	MB-20686		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 20686		RunNo: 28106					
Prep Date:	8/10/2015		Analysis Date: 8/11/2015		SeqNo: 846916		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	0.95		1.000		95.5	80	120			

Sample ID	LCS-20686		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 20686		RunNo: 28106					
Prep Date:	8/10/2015		Analysis Date: 8/11/2015		SeqNo: 846917		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	76.6	128			
Toluene	1.0	0.050	1.000	0	101	75	124			
Ethylbenzene	1.0	0.050	1.000	0	99.8	79.5	126			
Xylenes, Total	3.2	0.10	3.000	0	107	78.8	124			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.0	80	120			

Qualifiers:

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

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

Sample Log-In Check List

Client Name: APEX AZTEC

Work Order Number: 1508406

RcptNo: 1

Received by/date:

Ag

08/11/15

Logged By: Ashley Gallegos

8/11/2015 7:40:00 AM

Ag

Completed By: Ashley Gallegos

8/11/2015 8:22:02 AM

Ag

Reviewed By:

Ja

08/11/15

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° C to 6.0° C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

(Note discrepancies on chain of custody)

Yes ☒

No ☐

Adjusted?

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 ☐

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD



Office Location

Aztec

Laboratory:

HALI

Address:

ARQ

Contact:

Andy Freeman

Phone:

PO/SO #: 725 0415018

Project Manager

N Summers

Sampler's Name

Kyle Summers

Sampler's Signature

[Signature]

Proj. No.

Project Name

K-51 (2015)

No/Type of Containers

Matrix	Date	Time	Cool	Grab	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	8/10/15	1400	X		SC-1						1	X	1508406-001
		1410			SC-2								-002
		1420			SC-3								-003
		1430			SC-4								-004
NFS K-5													

Turn around time ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush

Relinquished by (Signature)

Date:

Time:

Received by (Signature)

Date:

Time:

NOTES:

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:

Bill Tom Long
NonAFE# N22228
Rush

Matrix
ContainerWW - Wastewater
VOA - 40 ml vialW - Water
A/G - Amber / Or Glass 1 Liter

S - Soil

SD - Solid

L - Liquid
250 ml - Glass wide mouth

A - Air Bag

C - Charcoal tube
P/O - Plastic or other

SL - sludge

O - Oil



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

August 14, 2015

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

RE: Lateral K-51 (2015)

OrderNo.: 1508593

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 11 sample(s) on 8/13/2015 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 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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN**Client Sample ID:** C-1**Project:** Lateral K-51 (2015)**Collection Date:** 8/12/2015 1:00:00 PM**Lab ID:** 1508593-001**Matrix:** SOIL**Received Date:** 8/13/2015 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)	ND	4.1		mg/Kg	1	8/13/2015 11:12:44 AM	R28180
Surr: BFB	107	70-130		%REC	1	8/13/2015 11:12:44 AM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/13/2015 10:19:25 AM	20758
Surr: DNOP	84.0	57.9-140		%REC	1	8/13/2015 10:19:25 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.041		mg/Kg	1	8/13/2015 11:12:44 AM	R28180
Toluene	ND	0.041		mg/Kg	1	8/13/2015 11:12:44 AM	R28180
Ethylbenzene	ND	0.041		mg/Kg	1	8/13/2015 11:12:44 AM	R28180
Xylenes, Total	ND	0.081		mg/Kg	1	8/13/2015 11:12:44 AM	R28180
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%REC	1	8/13/2015 11:12:44 AM	R28180
Surr: 4-Bromofluorobenzene	98.5	70-130		%REC	1	8/13/2015 11:12:44 AM	R28180
Surr: Dibromofluoromethane	109	70-130		%REC	1	8/13/2015 11:12:44 AM	R28180
Surr: Toluene-d8	98.8	70-130		%REC	1	8/13/2015 11:12:44 AM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-2

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:05:00 PM

Lab ID: 1508593-002

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	3.3		mg/Kg	1	8/13/2015 11:40:18 AM	R28180
Surr: BFB	103	70-130		%REC	1	8/13/2015 11:40:18 AM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/13/2015 10:40:46 AM	20758
Surr: DNOP	81.1	57.9-140		%REC	1	8/13/2015 10:40:46 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.033		mg/Kg	1	8/13/2015 11:40:18 AM	R28180
Toluene	ND	0.033		mg/Kg	1	8/13/2015 11:40:18 AM	R28180
Ethylbenzene	ND	0.033		mg/Kg	1	8/13/2015 11:40:18 AM	R28180
Xylenes, Total	ND	0.066		mg/Kg	1	8/13/2015 11:40:18 AM	R28180
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	8/13/2015 11:40:18 AM	R28180
Surr: 4-Bromofluorobenzene	95.6	70-130		%REC	1	8/13/2015 11:40:18 AM	R28180
Surr: Dibromofluoromethane	118	70-130		%REC	1	8/13/2015 11:40:18 AM	R28180
Surr: Toluene-d8	92.8	70-130		%REC	1	8/13/2015 11:40:18 AM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-3

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:10:00 PM

Lab ID: 1508593-003

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	4.6		mg/Kg	1	8/13/2015 12:07:46 PM	R28180
Surr: BFB	109	70-130		%REC	1	8/13/2015 12:07:46 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/13/2015 11:02:03 AM	20758
Surr: DNOP	80.4	57.9-140		%REC	1	8/13/2015 11:02:03 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.046		mg/Kg	1	8/13/2015 12:07:46 PM	R28180
Toluene	ND	0.046		mg/Kg	1	8/13/2015 12:07:46 PM	R28180
Ethylbenzene	ND	0.046		mg/Kg	1	8/13/2015 12:07:46 PM	R28180
Xylenes, Total	ND	0.091		mg/Kg	1	8/13/2015 12:07:46 PM	R28180
Surr: 1,2-Dichloroethane-d4	109	70-130		%REC	1	8/13/2015 12:07:46 PM	R28180
Surr: 4-Bromofluorobenzene	93.6	70-130		%REC	1	8/13/2015 12:07:46 PM	R28180
Surr: Dibromofluoromethane	122	70-130		%REC	1	8/13/2015 12:07:46 PM	R28180
Surr: Toluene-d8	99.8	70-130		%REC	1	8/13/2015 12:07:46 PM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-4

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:15:00 PM

Lab ID: 1508593-004

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	4.7		mg/Kg	1	8/13/2015 12:35:18 PM	R28180
Surr: BFB	104	70-130		%REC	1	8/13/2015 12:35:18 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/13/2015 11:32:00 AM	20758
Surr: DNOP	80.6	57.9-140		%REC	1	8/13/2015 11:32:00 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.047		mg/Kg	1	8/13/2015 12:35:18 PM	R28180
Toluene	ND	0.047		mg/Kg	1	8/13/2015 12:35:18 PM	R28180
Ethylbenzene	ND	0.047		mg/Kg	1	8/13/2015 12:35:18 PM	R28180
Xylenes, Total	ND	0.095		mg/Kg	1	8/13/2015 12:35:18 PM	R28180
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	8/13/2015 12:35:18 PM	R28180
Surr: 4-Bromofluorobenzene	99.7	70-130		%REC	1	8/13/2015 12:35:18 PM	R28180
Surr: Dibromofluoromethane	117	70-130		%REC	1	8/13/2015 12:35:18 PM	R28180
Surr: Toluene-d8	94.9	70-130		%REC	1	8/13/2015 12:35:18 PM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-5

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:20:00 PM

Lab ID: 1508593-005

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	4.8		mg/Kg	1	8/13/2015 1:02:48 PM	R28180
Surr: BFB	106	70-130		%REC	1	8/13/2015 1:02:48 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/13/2015 11:53:12 AM	20758
Surr: DNOP	86.0	57.9-140		%REC	1	8/13/2015 11:53:12 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.048		mg/Kg	1	8/13/2015 1:02:48 PM	R28180
Toluene	ND	0.048		mg/Kg	1	8/13/2015 1:02:48 PM	R28180
Ethylbenzene	ND	0.048		mg/Kg	1	8/13/2015 1:02:48 PM	R28180
Xylenes, Total	ND	0.096		mg/Kg	1	8/13/2015 1:02:48 PM	R28180
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	8/13/2015 1:02:48 PM	R28180
Surr: 4-Bromofluorobenzene	97.7	70-130		%REC	1	8/13/2015 1:02:48 PM	R28180
Surr: Dibromofluoromethane	120	70-130		%REC	1	8/13/2015 1:02:48 PM	R28180
Surr: Toluene-d8	94.1	70-130		%REC	1	8/13/2015 1:02:48 PM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-6

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:25:00 PM

Lab ID: 1508593-006

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	3.4		mg/Kg	1	8/13/2015 1:30:19 PM	R28180
Surr: BFB	104	70-130		%REC	1	8/13/2015 1:30:19 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/13/2015 12:14:29 PM	20758
Surr: DNOP	88.9	57.9-140		%REC	1	8/13/2015 12:14:29 PM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.034		mg/Kg	1	8/13/2015 1:30:19 PM	R28180
Toluene	ND	0.034		mg/Kg	1	8/13/2015 1:30:19 PM	R28180
Ethylbenzene	ND	0.034		mg/Kg	1	8/13/2015 1:30:19 PM	R28180
Xylenes, Total	ND	0.068		mg/Kg	1	8/13/2015 1:30:19 PM	R28180
Surr: 1,2-Dichloroethane-d4	115	70-130		%REC	1	8/13/2015 1:30:19 PM	R28180
Surr: 4-Bromofluorobenzene	99.0	70-130		%REC	1	8/13/2015 1:30:19 PM	R28180
Surr: Dibromofluoromethane	127	70-130		%REC	1	8/13/2015 1:30:19 PM	R28180
Surr: Toluene-d8	96.5	70-130		%REC	1	8/13/2015 1:30:19 PM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-7

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:30:00 PM

Lab ID: 1508593-007

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	4.1		mg/Kg	1	8/13/2015 1:57:55 PM	R28180
Surr: BFB	107	70-130		%REC	1	8/13/2015 1:57:55 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/13/2015 10:21:10 AM	20758
Surr: DNOP	104	57.9-140		%REC	1	8/13/2015 10:21:10 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.041		mg/Kg	1	8/13/2015 1:57:55 PM	R28180
Toluene	ND	0.041		mg/Kg	1	8/13/2015 1:57:55 PM	R28180
Ethylbenzene	ND	0.041		mg/Kg	1	8/13/2015 1:57:55 PM	R28180
Xylenes, Total	ND	0.082		mg/Kg	1	8/13/2015 1:57:55 PM	R28180
Surr: 1,2-Dichloroethane-d4	113	70-130		%REC	1	8/13/2015 1:57:55 PM	R28180
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	8/13/2015 1:57:55 PM	R28180
Surr: Dibromofluoromethane	125	70-130		%REC	1	8/13/2015 1:57:55 PM	R28180
Surr: Toluene-d8	94.0	70-130		%REC	1	8/13/2015 1:57:55 PM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-8

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:35:00 PM

Lab ID: 1508593-008

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	4.8		mg/Kg	1	8/13/2015 2:25:34 PM	R28180
Surr: BFB	107	70-130		%REC	1	8/13/2015 2:25:34 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	19	9.6		mg/Kg	1	8/13/2015 10:47:40 AM	20758
Surr: DNOP	108	57.9-140		%REC	1	8/13/2015 10:47:40 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.048		mg/Kg	1	8/13/2015 2:25:34 PM	R28180
Toluene	0.13	0.048		mg/Kg	1	8/13/2015 2:25:34 PM	R28180
Ethylbenzene	ND	0.048		mg/Kg	1	8/13/2015 2:25:34 PM	R28180
Xylenes, Total	0.17	0.095		mg/Kg	1	8/13/2015 2:25:34 PM	R28180
Surr: 1,2-Dichloroethane-d4	109	70-130		%REC	1	8/13/2015 2:25:34 PM	R28180
Surr: 4-Bromofluorobenzene	96.9	70-130		%REC	1	8/13/2015 2:25:34 PM	R28180
Surr: Dibromofluoromethane	115	70-130		%REC	1	8/13/2015 2:25:34 PM	R28180
Surr: Toluene-d8	93.6	70-130		%REC	1	8/13/2015 2:25:34 PM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-9

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:40:00 PM

Lab ID: 1508593-009

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	5.1		mg/Kg	1	8/13/2015 2:53:12 PM	R28180
Surr: BFB	106	70-130		%REC	1	8/13/2015 2:53:12 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	11	10		mg/Kg	1	8/13/2015 11:14:42 AM	20758
Surr: DNOP	109	57.9-140		%REC	1	8/13/2015 11:14:42 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.051		mg/Kg	1	8/13/2015 2:53:12 PM	R28180
Toluene	ND	0.051		mg/Kg	1	8/13/2015 2:53:12 PM	R28180
Ethylbenzene	ND	0.051		mg/Kg	1	8/13/2015 2:53:12 PM	R28180
Xylenes, Total	ND	0.10		mg/Kg	1	8/13/2015 2:53:12 PM	R28180
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	8/13/2015 2:53:12 PM	R28180
Surr: 4-Bromofluorobenzene	98.2	70-130		%REC	1	8/13/2015 2:53:12 PM	R28180
Surr: Dibromofluoromethane	123	70-130		%REC	1	8/13/2015 2:53:12 PM	R28180
Surr: Toluene-d8	96.4	70-130		%REC	1	8/13/2015 2:53:12 PM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-10

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:45:00 PM

Lab ID: 1508593-010

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	5.4		mg/Kg	1	8/13/2015 10:45:19 AM	R28180
Surr: BFB	101	70-130		%REC	1	8/13/2015 10:45:19 AM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/13/2015 11:41:12 AM	20758
Surr: DNOP	104	57.9-140		%REC	1	8/13/2015 11:41:12 AM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.054		mg/Kg	1	8/13/2015 10:45:19 AM	R28180
Toluene	ND	0.054		mg/Kg	1	8/13/2015 10:45:19 AM	R28180
Ethylbenzene	ND	0.054		mg/Kg	1	8/13/2015 10:45:19 AM	R28180
Xylenes, Total	ND	0.11		mg/Kg	1	8/13/2015 10:45:19 AM	R28180
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	8/13/2015 10:45:19 AM	R28180
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	8/13/2015 10:45:19 AM	R28180
Surr: Dibromofluoromethane	114	70-130		%REC	1	8/13/2015 10:45:19 AM	R28180
Surr: Toluene-d8	96.7	70-130		%REC	1	8/13/2015 10:45:19 AM	R28180

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 1508593

Date Reported: 8/14/2015

CLIENT: APEX TITAN

Client Sample ID: C-11

Project: Lateral K-51 (2015)

Collection Date: 8/12/2015 1:50:00 PM

Lab ID: 1508593-011

Matrix: SOIL

Received Date: 8/13/2015 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)	ND	4.2		mg/Kg	1	8/13/2015 3:20:51 PM	R28180
Surr: BFB	103	70-130		%REC	1	8/13/2015 3:20:51 PM	R28180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	29	9.8		mg/Kg	1	8/13/2015 12:07:59 PM	20758
Surr: DNOP	98.1	57.9-140		%REC	1	8/13/2015 12:07:59 PM	20758
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.042		mg/Kg	1	8/13/2015 3:20:51 PM	R28180
Toluene	ND	0.042		mg/Kg	1	8/13/2015 3:20:51 PM	R28180
Ethylbenzene	ND	0.042		mg/Kg	1	8/13/2015 3:20:51 PM	R28180
Xylenes, Total	0.24	0.085		mg/Kg	1	8/13/2015 3:20:51 PM	R28180
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	8/13/2015 3:20:51 PM	R28180
Surr: 4-Bromofluorobenzene	96.8	70-130		%REC	1	8/13/2015 3:20:51 PM	R28180
Surr: Dibromofluoromethane	124	70-130		%REC	1	8/13/2015 3:20:51 PM	R28180
Surr: Toluene-d8	93.8	70-130		%REC	1	8/13/2015 3:20:51 PM	R28180

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	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508593

14-Aug-15

Client: APEX TITAN
Project: Lateral K-51 (2015)

Sample ID	MB-20758	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	20758	RunNo:	28160					
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	SeqNo:	848519	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	8.1		10.00		81.1	57.9	140			

Sample ID	MB-20759	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	20759	RunNo:	28160					
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	SeqNo:	848520	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.5		10.00		75.4	57.9	140			

Sample ID	LCS-20758	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	20758	RunNo:	28160					
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	SeqNo:	848521	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.4	57.4	139			
Surr: DNOP	3.9		5.000		77.4	57.9	140			

Sample ID	LCS-20759	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	20759	RunNo:	28160					
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	SeqNo:	848522	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.2	57.9	140			

Sample ID	1508593-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	C-1	Batch ID:	20758	RunNo:	28160					
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	SeqNo:	849105	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	9.8	49.21	0	79.8	42.3	146			
Surr: DNOP	3.9		4.921		78.3	57.9	140			

Sample ID	1508593-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	C-1	Batch ID:	20758	RunNo:	28160					
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	SeqNo:	849108	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.7	48.40	0	86.6	42.3	146	6.55	28.9	
Surr: DNOP	3.8		4.840		78.5	57.9	140	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#: 1508593

14-Aug-15

Client: APEX TITAN
Project: Lateral K-51 (2015)

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849611	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	0.49		0.5000		98.2	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		105	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849615	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	106	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		111	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		115	70	130			
Surr: Toluene-d8	0.49		0.5000		99.0	70	130			

Sample ID	1508593-002ams	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	C-2	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849630	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.033	0.6579	0.01044	103	70	130			
Toluene	0.67	0.033	0.6579	0	102	65	138			
Surr: 1,2-Dichloroethane-d4	0.35		0.3290		106	70	130			
Surr: 4-Bromofluorobenzene	0.34		0.3290		102	70	130			
Surr: Dibromofluoromethane	0.40		0.3290		123	70	130			
Surr: Toluene-d8	0.30		0.3290		92.6	70	130			

Sample ID	1508593-002amsd	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	C-2	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849631	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.68	0.033	0.6579	0.01044	102	70	130	1.04	20	
Toluene	0.67	0.033	0.6579	0	101	65	138	0.686	20	

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#: 1508593

14-Aug-15

Client: APEX TITAN

Project: Lateral K-51 (2015)

Sample ID	1508593-002amsd	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	C-2	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849631	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.36		0.3290		108	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.32		0.3290		96.7	70	130	0	0	
Surr: Dibromofluoromethane	0.39		0.3290		118	70	130	0	0	
Surr: Toluene-d8	0.31		0.3290		95.4	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#: 1508593

14-Aug-15

Client: APEX TITAN
Project: Lateral K-51 (2015)

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849636	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		98.8	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849637	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	70	123			
Surr: BFB	510		500.0		103	70	130			

Sample ID	1508593-001ams	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	C-1	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849638	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.1	20.31	0	93.0	54.9	131			
Surr: BFB	430		406.2		106	70	130			

Sample ID	1508593-001amsd	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	C-1	Batch ID:	R28180	RunNo:	28180					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849639	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.1	20.31	0	98.0	54.9	131	5.24	20	
Surr: BFB	440		406.2		109	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

Sample Log-In Check List

Client Name: APEX AZTEC

Work Order Number: 1508593

RcptNo: 1

Received by/date: AG 08/13/15

Logged By: Anne Thorne 8/13/2015 7:00:00 AM

Completed By: Anne Thorne 8/13/2015

Reviewed By: [Signature] 8/13/15

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°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	2.0	Good	Yes			

CHAIN OF CUSTODY RECORD

 APEX Office Location <u>Aztec, NM</u>		Laboratory: <u>Hall Environmental</u>		ANALYSIS REQUESTED <div style="transform: rotate(-90deg); position: absolute; left: 50%; top: 50%;"> 8021 BTEX 8015 TPH (GRO/DEU) </div>										Lab use only Due Date:		
		Address: <u>Albuquerque, NM</u>												Temp. of coolers when received (C°): <u>20</u>		
Contact: <u>Andy Freeman</u>		Phone: _____												Page <u>1</u> of <u>1</u>		
Project Manager <u>K. Summers</u>		PO/SO #: <u>7250415018</u>														
Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature <u>Rm Deechilly</u>														
Proj. No. <u>7250415018</u>		Project Name <u>Lateral K-51 (2015)</u>				No/Type of Containers										
Matrix	Date	Time	Comp	Grab	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	8/12/15	1300			C-1						1		X X	1508593 -C01		
		1305			C-2						1		X X	-C02		
		1310			C-3						1		X X	-C03		
		1315			C-4						1		X X	-C04		
		1320			C-5						1		X X	-C05		
		1325			C-6						1		X X	-C06		
		1330			C-7						1		X X	-C07		
		1335			C-8						1		X X	-C08		
		1340			C-9						1		X X	-C09		
✓	✓	1345			C-10						1		X X	-C10		
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush																
Relinquished by (Signature) <u>Rm Deechilly</u>		Date: <u>8/12/15</u>	Time: <u>1723</u>	Received by (Signature) <u>Bill Long</u>		Date: <u>8/12/15</u>	Time: <u>1723</u>	NOTES: Bill to Enterprise Tom Long Non AFE # N22228 <u>Rush</u>								
Relinquished by (Signature) <u>Master Walter</u>		Date: <u>8/12/15</u>	Time: <u>2120</u>	Received by (Signature) <u>AM Gallegos</u>		Date: <u>8/13/15</u>	Time: <u>0700</u>									
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:									
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:									

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



Office Location Aztec, NM

Project Manager K. Summers

Sampler's Name

Ranee Dechilly

Laboratory: Hall Environmental

Address: Albuquerque, NM

Contact: Andy Freeman

Phone: _____

PO/SO #: 7250415018

Sampler's Signature

R. Dechilly

Proj. No.

7250415018

Project Name

Lateral 2-51 (2015)

No/Type of Containers

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 L	250 ml	Glass Jar	P/O
S	8/12/15	1350			C-11						1	
<div>NO</div>												

ANALYSIS REQUESTED

8021 BTEX
8015 TPH FROLD

Lab use only
Due Date:

Temp. of coolers when received (C°) 20

1 2 3 4 5

Page 2 of 2

Lab Sample ID (Lab Use Only)

1508593-011

Turn around time ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush

Relinquished by (Signature) <u>R. Dechilly</u>	Date: <u>8/12/15</u>	Time: <u>1723</u>	Received by (Signature) <u>Chris E. Walter</u>	Date: <u>8/12/15</u>	Time: <u>1723</u>
Relinquished by (Signature) <u>John A. ...</u>	Date: <u>8/12/15</u>	Time: <u>2120</u>	Received by (Signature) <u>Jim Gallagos</u>	Date: <u>8/13/15</u>	Time: <u>0700</u>
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:

NOTES:

Bill to Enterprise Tom Long
Non AFE # N 22228

Rush

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

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

DEC 21 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
------------------	---------------	------------------	--------------	----------------------	---------------------	-----------------------	-------------------	----------------------

Latitude 36.462995 Longitude -107.368065

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release 9 MCF Gas; 5-7 BBLs Liquids	Volume Recovered: None
Source of Release: 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 were completed on August 28, 2015.

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 42 feet long by 30 feet wide ranging from 5 to 16 feet deep. Approximately 232 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: 1/4/16	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 11-12-2015	Phone: (713)381-6684	

* Attach Additional Sheets If Necessary

#NCS 1523031141

49



OIL CONS. DIV DIST. 3

DEC 21 2015

CORRECTIVE ACTION REPORT

Property:

**Jicarilla F#3 Pipeline Release
NW 1/4, S28 T26N R5W
Rio Arriba County, New Mexico**

October 4, 2015
Apex Project No. 7250415019

Prepared for:

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

Prepared by:

A handwritten signature in blue ink, reading 'Rane Deechilly', written over a horizontal line.

Ranee Deechilly
Environmental Scientist

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

Kyle Summers, CPG
Branch Manager/Senior Geologist

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5.0	FINDINGS AND RECOMMENDATIONS.....	4
6.0	STANDARD OF CARE, LIMITATIONS, AND RELIANCE	5

LIST OF APPENDICES

Appendix A:	Figure 1 – Topographic Map
	Figure 2 – Site Vicinity Map
	Figure 3 – Site Map with Soil Analytical Results
Appendix B:	Executed C-138 Solid Waste Acceptance Form
Appendix C:	Photographic Documentation
Appendix D:	Table
Appendix E:	Laboratory Analytical Reports & Chain of Custody Documentation

CORRECTIVE ACTION REPORT

Jicarilla F#3 Pipeline Release

NW 1/4, S28 T26N R5W
Rio Arriba County, New Mexico

Apex Project No. 7250415019

1.0 INTRODUCTION

1.1 Site Description & Background

The Jicarilla F#3 pipeline release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the northwest (NW) ¼ of Section 28 in Township 26 North and Range 5 West in rural Rio Arriba County, New Mexico (36.46299N, 107.36806W), referred to hereinafter as the "Site" or "subject Site". The Site is located adjacent to a dirt road and 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 east to west.

A natural gas leak on the lateral Jicarilla F #3 pipeline was reported to Enterprise on July 31, 2015 by a third party. Enterprise immediately isolated, blew down, and locked out the line. Beginning on August 25, 2015, Enterprise initiated excavation activities to facilitate the repair of the subsurface leak, and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired by replacing approximately 40 feet of pipe. Natural gas was released from the pipeline as a result of external corrosion. The surface expression of the release was characterized by soil discoloration and distressed vegetation in the vicinity of the release.

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

1.2 Project Objective

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

2.0 SITE RANKING

The Site is under the jurisdiction of the Jicarilla Apache Nation Environmental Protection Office (JANEPO). In the absence of published JANEPO regulatory guidance, Apex TITAN Inc. (Apex) references the New Mexico ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*. 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	10
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			30

Based on Apex's evaluation of the scoring criteria, the Site would earn a maximum Total Ranking Score of "30". This ranking is based on the following:

- No nearby water wells were identified on the OSE water rights website, however based on the proximity to both a small ephemeral wash and to Tapicito creek groundwater is estimated to be less than 50 feet below grade surface (bgs), resulting in a ranking of "20" for depth to groundwater.
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site. These proximities result in a wellhead protection area ranking of "0".
- The release point is located approximately 840 feet from a small ephemeral wash that is identified as a "blue line" on the United States Geological Society topographic map, which drains into Tapicito Creek. This information supports a distance to surface water ranking of "10".

3.0 RESPONSE ACTIONS

3.1 Soil Excavation Activities

A natural gas leak on the lateral Jicarilla F #3 pipeline was reported to Enterprise on July 31, 2015 by a third party. Enterprise immediately isolated, blew down, and locked out the line. Beginning on August 25, 2015, Enterprise initiated excavation activities at the Site to repair the subsurface leak, and remediate potential hydrocarbon impact. The release was identified and subsequently repaired by replacing approximately 40 feet of pipe. Natural gas was released from the pipeline as a result of external corrosion. The surface expression of the release was identified by soil discoloration and distressed vegetation in the vicinity of the release. During corrective action activities, West States Energy Contractors, Inc., provided heavy equipment and labor support. Raneer Deechilly, an Apex environmental professional, provided environmental support.

On August 26 and 27, 2015, confirmation soil samples C-1 through C-4 were collected from the sidewalls and base of the northern portion of the excavation. In addition, four (4) stockpile soil samples (SP-1 through SP-4) were collected from apparently unaffected spoils to determine the potential to reuse a portion of the soils as backfill material. Excavation activities were completed on August 28, 2015, and confirmation soil samples C-5 through C-16 were collected from the remaining untested portions of the excavation for laboratory analysis. The final excavation measured approximately 42 feet long by 30 feet wide at the maximum extents, with total depths ranging from approximately five (5) feet bgs to 16 feet bgs.

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

A total of approximately 232 cubic yards of hydrocarbon affected soils were transported to the TNT landfarm in Rio Arriba County, New Mexico for disposal/remediation. The executed C-138 form is provided in Appendix B. The excavation was backfilled with clean imported fill and laboratory-confirmed acceptable spoils, and then contoured to surrounding grade.

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

3.2 Soil Sampling Program

Apex screened head-space samples of Site soils with a photoionization detector (PID) fitted with a 10.6 eV lamp to evaluate volatile organic compounds (VOCs) and aid in determining the excavation limits.

Apex's soil sampling program included the collection of sixteen (16) confirmation soil samples (C-1 through C-16) from the resulting excavation, and four (4) stockpile soil samples for laboratory analysis. 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 and stockpile 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 form and laboratory data sheets are provided in Appendix E.

4.0 DATA EVALUATION

The Site is subject to regulatory oversight by JANEPO and the New Mexico EMNRD OCD. In the absence of published JANEPO regulatory guidance, Apex TITAN Inc. (Apex) referenced the New Mexico ENMRD OCD's *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 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 (C-1 through C-16) collected from the excavated area, and the

stockpile samples collected to verify reusable spoils, to the OCD RALs for sites having a total ranking score of "30".

- The laboratory analyses of confirmation samples collected from soils remaining in place and the reused spoils did not indicate benzene concentrations above the laboratory reporting limits, which are below the OCD RAL of 10 milligram per kilogram (mg/kg).
- The laboratory analyses of the confirmation samples collected from soils remaining in place and reused spoils indicate total BTEX concentrations ranging from below the laboratory reporting limits to 0.11 mg/kg (SP-4), which are below the OCD RAL of 50 mg/kg.
- The laboratory analyses of the confirmation samples collected from soils remaining in place and reused spoils indicate combined TPH GRO/DRO concentrations ranging from below the laboratory reporting limits to 47 mg/kg (SP-3), which are below the OCD RAL of 100 mg/kg for a Site ranking of "30".

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

5.0 FINDINGS AND RECOMMENDATIONS

The Jicarilla F#3 pipeline release site is located within the Enterprise ROW in the NW ¼ of Section 28 in Township 26 North and Range 5 West in rural Rio Arriba County, New Mexico. The Site is located adjacent to a dirt road and 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 east to west.

Beginning on August 25, 2015, Enterprise initiated excavation activities to facilitate the repair of the subsurface leak, and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired by replacing approximately 40 feet of new pipe. Natural gas was released from the pipeline as a result of external corrosion. The surface expression of the release was characterized by soil discoloration and distressed vegetation in the vicinity of the release.

- The primary objective of the corrective action 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 poorly sorted silty sand with clay.
- The final excavation measured approximately 42 feet long by 30 feet wide at the maximum extents, with total depths ranging from approximately five (5) feet bgs to 16 feet bgs.
- Prior to backfilling, sixteen (16) confirmation samples soil samples were collected from the resulting final excavation for laboratory analyses. In addition, four (4) stockpile samples were collected from apparently unaffected spoils to determine the potential to reuse a portion of the soils as backfill material. Based on analytical results, soils remaining in place do not exhibit BTEX or TPH GRO/DRO concentrations above the OCD RALs for a Site ranking of "30".
- A total of approximately 232 cubic yards of hydrocarbon affected soils were transported to the TNT landfarm in Rio Arriba County, New Mexico for disposal/remediation. The

excavation was backfilled with clean imported fill and laboratory-confirmed acceptable spoils and then contoured to surrounding grade.

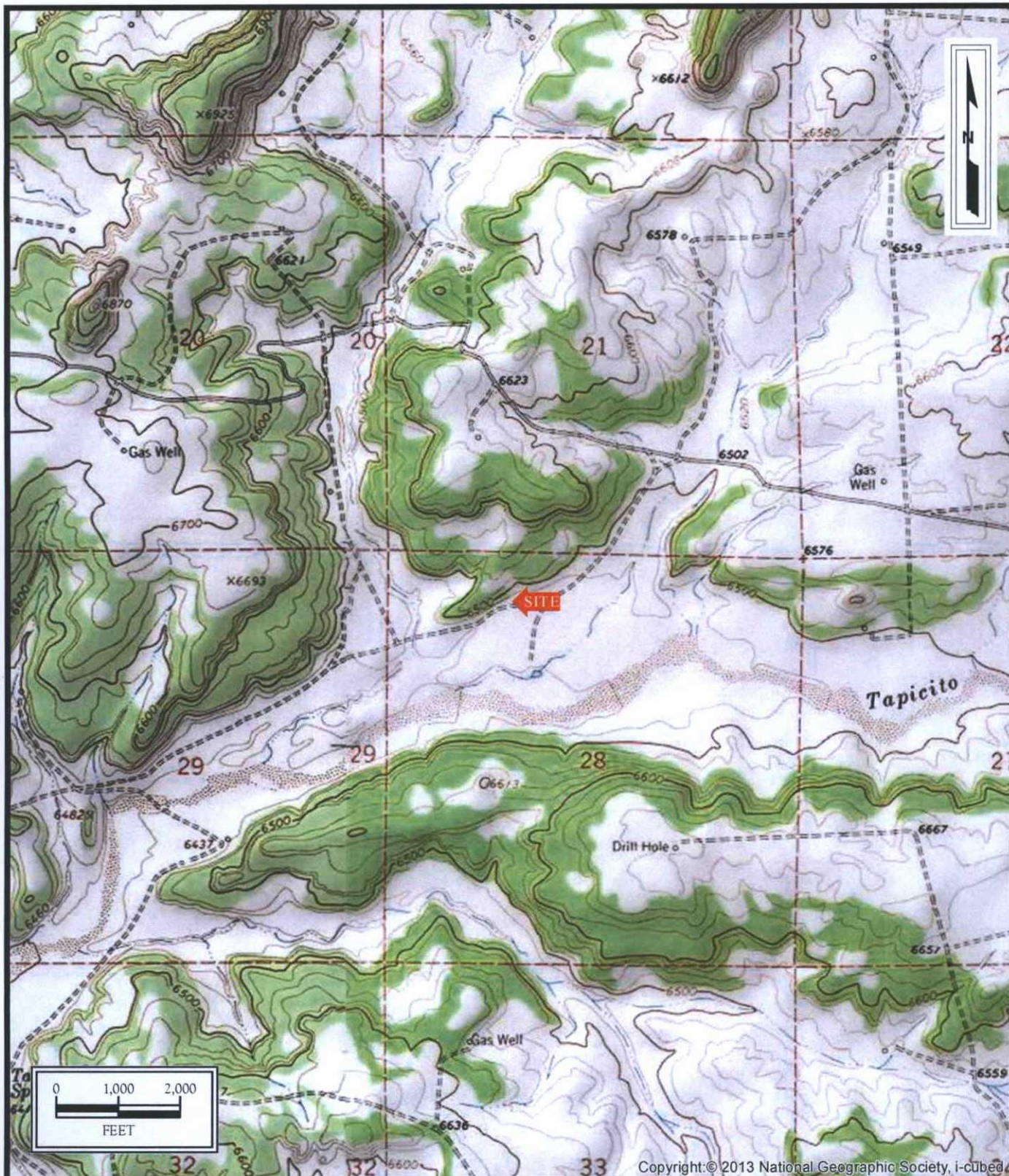
Based on field observations and laboratory analytical results, no additional investigation or corrective action with respect to soil impact appears warranted at this time.

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.



Jicarilla F#3 Pipeline Release
 NW1/4 S28 T26N R5W
 Rio Arriba County, New Mexico
 36.46299N, 107.36806W

Project No. 7250415019

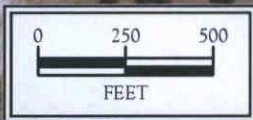
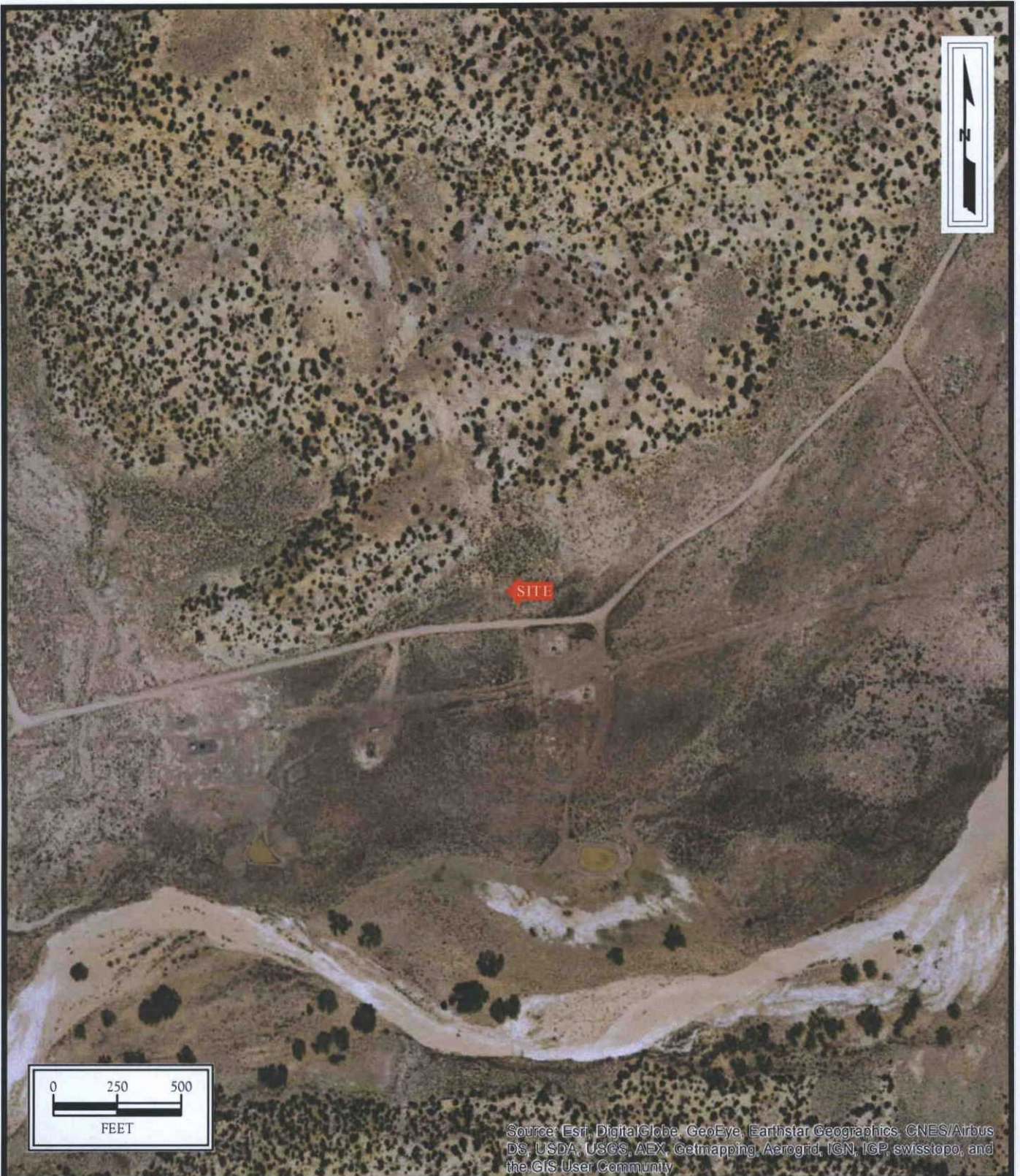


Apex TITAN, Inc.

606 South Rio Grande, Suite A
 Aztec, NM 87410
 Phone: (505) 334-5200
www.apexco2.com

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FIGURE 1
Topographic Map
 Lapis Point, NM Quadrangle
 1963



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

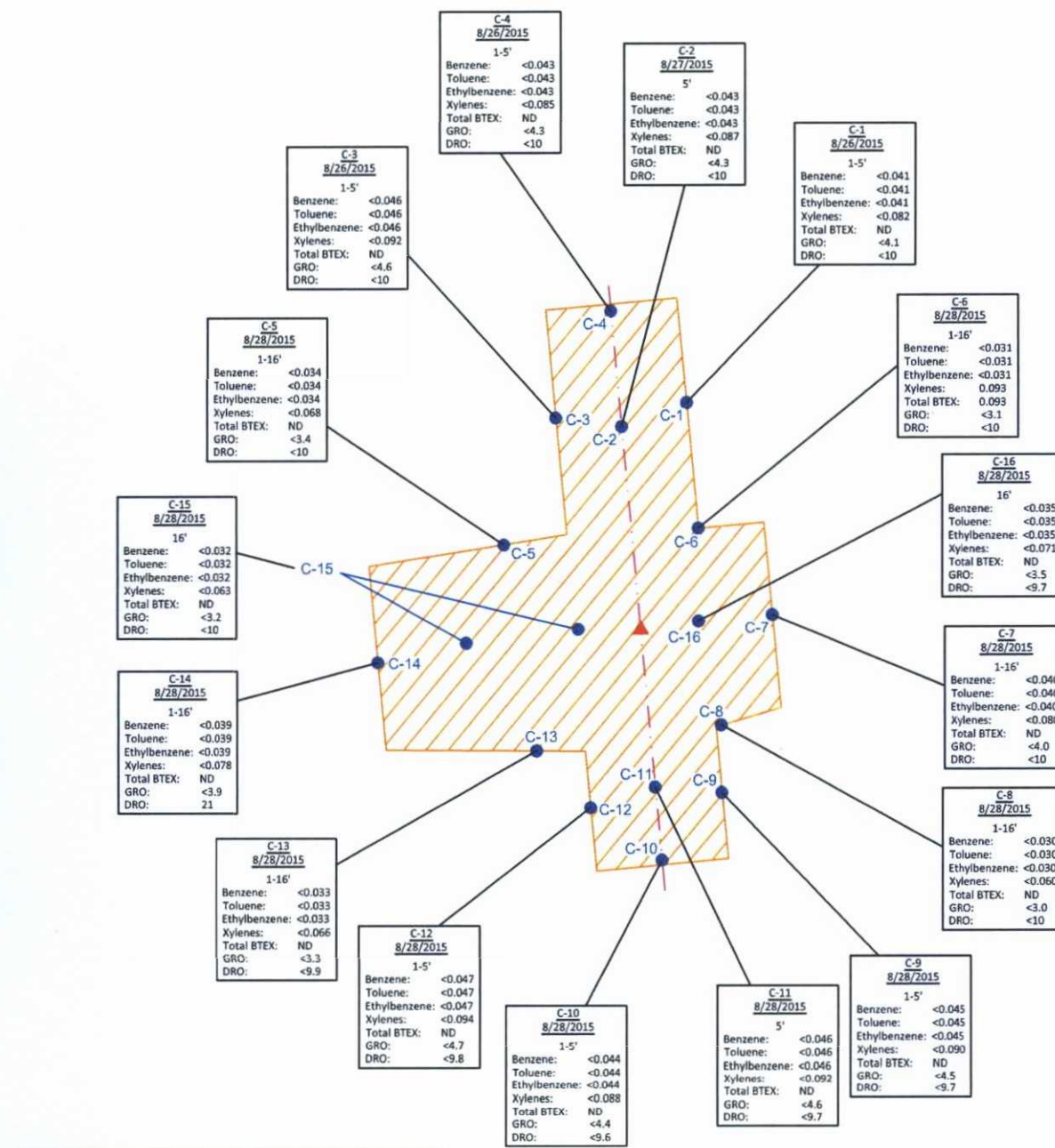
Jicarilla F#3 Pipeline Release
NW1/4 S28 T26N R5W
Rio Arriba County, New Mexico
36.46299N, 107.36806W

Project No. 7250415019



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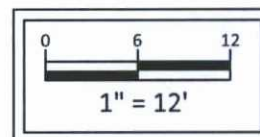
FIGURE 2
Site Vicinity Map



LEGEND:

- APPROXIMATE PIPELINE LOCATION
- SAMPLE LOCATION
- RELEASE POINT
- EXTENT OF EXCAVATION

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



Jicarilla F#3 Pipeline Release
NW $\frac{1}{4}$ S28 T26N R5W
Rio Arriba County, New Mexico
36.46299N, 107.36806W

Project No. 7250415019



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FIGURE 3
Site Map with
Soil Analytical Results

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: Jicarilla F#3 Pipeline
3. Location of Material (Street Address, City, State or ULSTR): Unit Letter C Section 28 Township 26 North Range 5 West; 36.462995, -107.368065
4. Source and Description of Waste: Hydro-excavated soil impacted with hydrocarbons associated with a pipeline release.
5. Estimated Volume 50 yd ³ Known Volume (to be entered by the operator at the end of the haul) 232 yd ³

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

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

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

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

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

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long 8-26-15, representative for Enterprise Field Services, LLC authorize TNT Land Farm. to
Generator Signature
complete the required testing/sign the Generator Waste Testing Certification.

I, _____, 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, Lindrith 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: Lutisha Schmitz

TITLE: Office Admin DATE: 8-28-15

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-497-2665 575-774-6504

Photograph 1

View of the source area and the initial excavation, facing southeast.



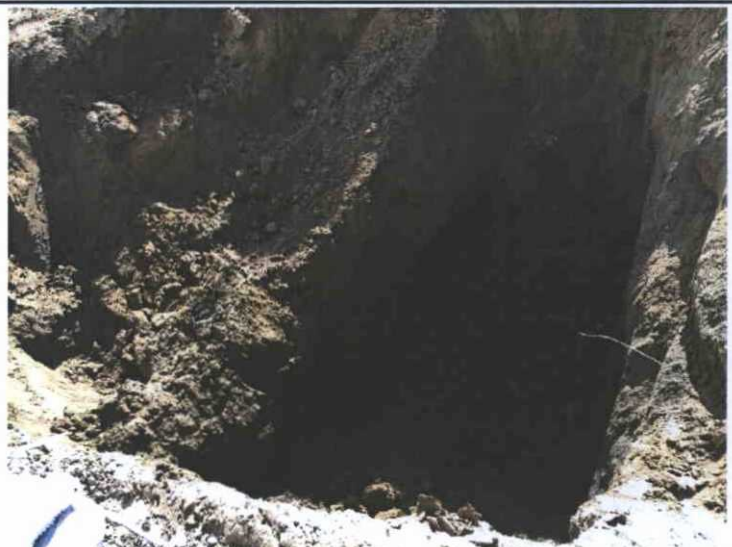
Photograph 2

View of the initial excavation and removed pipeline, facing north.



Photograph 3

View of the main release footprint, facing southeast.



Photograph 4

View of the new pipe and final excavation, facing south.



Photograph 4

View of the final excavation, facing north.



Photograph 4

View of the final excavation, facing southeast. Note: Sidewall caved into the excavation after affected soil removal was completed.





TABLE 1
Jicarilla F#3 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									
SP-1	8.27.15	Stockpile	<0.045	<0.045	<0.045	<0.089	ND	<4.5	12
SP-2	8.27.15	Stockpile	<0.044	<0.044	<0.044	<0.087	ND	<4.4	21
SP-3	8.27.15	Stockpile	<0.045	<0.045	<0.045	<0.091	ND	<4.5	47
SP-4	8.27.15	Stockpile	<0.053	<0.053	<0.053	<0.11	ND	7.3	18
Excavation Confirmation Samples									
C-1	8.26.15	1 to 5	<0.041	<0.041	<0.041	<0.082	ND	<4.1	<10
C-2	8.27.15	5	<0.043	<0.043	<0.043	<0.087	ND	<4.3	<10
C-3	8.26.15	1 to 5	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
C-4	8.26.15	1 to 5	<0.043	<0.043	<0.043	<0.085	ND	<4.3	<10
C-5	8.28.15	1 to 16	<0.034	<0.034	<0.034	<0.068	ND	<3.4	<10
C-6	8.28.15	1 to 16	<0.031	<0.031	<0.031	0.093	0.093	<3.1	<10
C-7	8.28.15	1 to 16	<0.040	<0.040	<0.040	<0.080	ND	<4.0	<10
C-8	8.28.15	1 to 16	<0.030	<0.030	<0.030	<0.060	ND	<3.0	<10
C-9	8.28.15	1 to 5	<0.045	<0.045	<0.045	<0.090	ND	<4.5	<9.7
C-10	8.28.15	1 to 5	<0.044	<0.044	<0.044	<0.088	ND	<4.4	<9.6
C-11	8.28.15	5	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<9.7
C-12	8.28.15	1 to 5	<0.047	<0.047	<0.047	<0.094	ND	<4.7	<9.8
C-13	8.28.15	1 to 16	<0.033	<0.033	<0.033	<0.066	ND	<3.3	<9.9
C-14	8.28.15	1 to 16	<0.039	<0.039	<0.039	<0.078	ND	<3.9	21
C-15	8.28.15	16	<0.032	<0.032	<0.032	<0.063	ND	<3.2	<10
C-16	8.28.15	16	<0.035	<0.035	<0.035	<0.071	ND	<3.5	<9.7

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

ND = Not Detected above the Laboratory Reporting Limits

NE = Not established



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

August 31, 2015

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

RE: Jicarilla F#3

OrderNo.: 1508D77

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/28/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to 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 1508D77

Date Reported: 8/31/2015

CLIENT: APEX TITAN**Client Sample ID:** SP-1**Project:** Jicarilla F#3**Collection Date:** 8/27/2015 2:30:00 PM**Lab ID:** 1508D77-001**Matrix:** MEOH (SOIL)**Received Date:** 8/28/2015 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	12	10		mg/Kg	1	8/28/2015 11:57:04 AM	21028
Surr: DNOP	99.2	57.9-140		%REC	1	8/28/2015 11:57:04 AM	21028
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	8/28/2015 11:33:09 AM	21027
Surr: BFB	87.7	75.4-113		%REC	1	8/28/2015 11:33:09 AM	21027
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.045		mg/Kg	1	8/28/2015 11:33:09 AM	21027
Toluene	ND	0.045		mg/Kg	1	8/28/2015 11:33:09 AM	21027
Ethylbenzene	ND	0.045		mg/Kg	1	8/28/2015 11:33:09 AM	21027
Xylenes, Total	ND	0.089		mg/Kg	1	8/28/2015 11:33:09 AM	21027
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	8/28/2015 11:33:09 AM	21027

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 7
	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 1508D77

Date Reported: 8/31/2015

CLIENT: APEX TITAN**Client Sample ID:** SP-2**Project:** Jicarilla F#3**Collection Date:** 8/27/2015 2:35:00 PM**Lab ID:** 1508D77-002**Matrix:** MEOH (SOIL)**Received Date:** 8/28/2015 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	21	10		mg/Kg	1	8/28/2015 12:18:25 PM	21028
Surr: DNOP	102	57.9-140		%REC	1	8/28/2015 12:18:25 PM	21028
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	8/28/2015 11:58:05 AM	21027
Surr: BFB	84.6	75.4-113		%REC	1	8/28/2015 11:58:05 AM	21027
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.044		mg/Kg	1	8/28/2015 11:58:05 AM	21027
Toluene	ND	0.044		mg/Kg	1	8/28/2015 11:58:05 AM	21027
Ethylbenzene	ND	0.044		mg/Kg	1	8/28/2015 11:58:05 AM	21027
Xylenes, Total	ND	0.087		mg/Kg	1	8/28/2015 11:58:05 AM	21027
Surr: 4-Bromofluorobenzene	97.4	80-120		%REC	1	8/28/2015 11:58:05 AM	21027

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 1508D77

Date Reported: 8/31/2015

CLIENT: APEX TITAN

Client Sample ID: SP-3

Project: Jicarilla F#3

Collection Date: 8/27/2015 2:40:00 PM

Lab ID: 1508D77-003

Matrix: MEOH (SOIL)

Received Date: 8/28/2015 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	47	9.9		mg/Kg	1	8/28/2015 12:18:47 PM	21028
Surr: DNOP	108	57.9-140		%REC	1	8/28/2015 12:18:47 PM	21028
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	8/28/2015 12:23:07 PM	21027
Surr: BFB	99.4	75.4-113		%REC	1	8/28/2015 12:23:07 PM	21027
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.045		mg/Kg	1	8/28/2015 12:23:07 PM	21027
Toluene	ND	0.045		mg/Kg	1	8/28/2015 12:23:07 PM	21027
Ethylbenzene	ND	0.045		mg/Kg	1	8/28/2015 12:23:07 PM	21027
Xylenes, Total	ND	0.091		mg/Kg	1	8/28/2015 12:23:07 PM	21027
Surr: 4-Bromofluorobenzene	99.4	80-120		%REC	1	8/28/2015 12:23:07 PM	21027

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 1508D77

Date Reported: 8/31/2015

CLIENT: APEX TITAN

Client Sample ID: SP-4

Project: Jicarilla F#3

Collection Date: 8/27/2015 2:45:00 PM

Lab ID: 1508D77-004

Matrix: MEOH (SOIL)

Received Date: 8/28/2015 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	18	10		mg/Kg	1	8/28/2015 12:45:54 PM	21028
Surr: DNOP	108	57.9-140		%REC	1	8/28/2015 12:45:54 PM	21028
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	7.3	5.3		mg/Kg	1	8/28/2015 12:48:01 PM	21027
Surr: BFB	116	75.4-113	S	%REC	1	8/28/2015 12:48:01 PM	21027
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.053		mg/Kg	1	8/28/2015 12:48:01 PM	21027
Toluene	ND	0.053		mg/Kg	1	8/28/2015 12:48:01 PM	21027
Ethylbenzene	ND	0.053		mg/Kg	1	8/28/2015 12:48:01 PM	21027
Xylenes, Total	ND	0.11		mg/Kg	1	8/28/2015 12:48:01 PM	21027
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	8/28/2015 12:48:01 PM	21027

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D77

31-Aug-15

Client: APEX TITAN

Project: Jicarilla F#3

Sample ID	MB-21028	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	21028	RunNo:	28511					
Prep Date:	8/28/2015	Analysis Date:	8/28/2015	SeqNo:	863099	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		103	57.9	140			

Sample ID	LCS-21028	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	21028	RunNo:	28511					
Prep Date:	8/28/2015	Analysis Date:	8/28/2015	SeqNo:	863100	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.2	57.4	139			
Surr: DNOP	4.8		5.000		95.8	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#: 1508D77

31-Aug-15

Client: APEX TITAN

Project: Jicarilla F#3

Sample ID	MB-21027	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	21027	RunNo:	28537					
Prep Date:	8/27/2015	Analysis Date:	8/28/2015	SeqNo:	863346	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	810		1000		80.7	75.4	113			

Sample ID	LCS-21027	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	21027	RunNo:	28537					
Prep Date:	8/27/2015	Analysis Date:	8/28/2015	SeqNo:	863347	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	94.6	79.6	122			
Surr: BFB	850		1000		85.1	75.4	113			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D77

31-Aug-15

Client: APEX TITAN

Project: Jicarilla F#3

Sample ID	MB-21027		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 21027		RunNo: 28537					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863353		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	0.95		1.000		94.9	80	120			

Sample ID	LCS-21027		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 21027		RunNo: 28537					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863354		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.050	1.000	0	91.1	76.6	128			
Toluene	0.91	0.050	1.000	0	91.3	75	124			
Ethylbenzene	0.94	0.050	1.000	0	94.5	79.5	126			
Xylenes, Total	2.7	0.10	3.000	0	91.3	78.8	124			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Qualifiers:

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

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



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

Sample Log-In Check List

Client Name: APEX AZTEC

Work Order Number 1508D77

RcptNo: 1

Received by/date:

JA

08/28/15

Logged By: Celina Sessa

8/28/2015 8:25:00 AM

Celina Sessa

Completed By: Celina Sessa

8/28/2015 9:19:27 AM

Celina Sessa

Reviewed By:

mg

08/28/15

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°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	2.6	Good	Yes			

CHAIN OF CUSTODY RECORD



Office Location

Aztec

Laboratory:

Hall

Address:

ABQ

Contact:

Freeman

Phone:

PO/SO #:

ANALYSIS
REQUESTED

Lab use only

Due Date:

Temp. of coolers 2.3 to 3.5 CF
when received (C°):

1 2 3 4 5

Page 1 of 1

Project Manager

Summers

Sampler's Name

Ranee Deuchilly

Sampler's Signature

R. Deuchilly

Proj. No.

Project Name

Sicorilla F#3

No. Type of Containers

Matrix	Date	Time	PROC	G	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	8/27/15	1430			SP-1						1		X X 1508D77-001
S		1435			SP-2						1		X X -002
S		1440			SP-3						1		X X -003
S		1445			SP-4						1		X X -004
N/A													

Turn around time ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush Same day

Relinquished by (Signature):

R. Deuchilly

Date:

8/27/15

Time:

1800

Received by (Signature):

M. Waelen

Date:

8/27/15

Time:

1800

Relinquished by (Signature):

M. Waelen

Date:

8/27/15

Time:

1910

Received by (Signature):

D. R. R. R.

Date:

08/28/15

Time:

0825

Relinquished by (Signature):

Relinquished by (Signature):

Date:

Time:

Received by (Signature):

Date:

Time:

NOTES:

Bill Tom Long (EPRBA)
NonAF# N22222
RUSHMatrix
ContainerWW - Wastewater
VOA - 40 ml vialW - Water
A/G - Amber / Or Glass 1 LiterS - Soil
SD - SolidL - Liquid
250 ml - Glass wide mouth

A - Air Bag

C - Charcoal tube
P/O - Plastic or other

SL - sludge

O - Oil



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

September 02, 2015

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

RE: Jicarilla F #3

OrderNo.: 1508E29

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 16 sample(s) on 8/29/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to 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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-1

Project: Jicarilla F #3

Collection Date: 8/26/2015 2:00:00 PM

Lab ID: 1508E29-001

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	9/1/2015 5:33:18 PM	C28591
Surr: BFB	105	70-130		%REC	1	9/1/2015 5:33:18 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 8:04:47 PM	21010
Surr: DNOP	102	57.9-140		%REC	1	9/1/2015 8:04:47 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.041		mg/Kg	1	9/1/2015 5:33:18 PM	D28591
Toluene	ND	0.041		mg/Kg	1	9/1/2015 5:33:18 PM	D28591
Ethylbenzene	ND	0.041		mg/Kg	1	9/1/2015 5:33:18 PM	D28591
Xylenes, Total	ND	0.082		mg/Kg	1	9/1/2015 5:33:18 PM	D28591
Surr: 1,2-Dichloroethane-d4	98.5	70-130		%REC	1	9/1/2015 5:33:18 PM	D28591
Surr: 4-Bromofluorobenzene	95.4	70-130		%REC	1	9/1/2015 5:33:18 PM	D28591
Surr: Dibromofluoromethane	113	70-130		%REC	1	9/1/2015 5:33:18 PM	D28591
Surr: Toluene-d8	94.3	70-130		%REC	1	9/1/2015 5:33:18 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-2

Project: Jicarilla F #3

Collection Date: 8/27/2015 1:30:00 PM

Lab ID: 1508E29-002

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	9/1/2015 6:00:53 PM	C28591
Surr: BFB	104	70-130		%REC	1	9/1/2015 6:00:53 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 8:26:22 PM	21010
Surr: DNOP	103	57.9-140		%REC	1	9/1/2015 8:26:22 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.043		mg/Kg	1	9/1/2015 6:00:53 PM	D28591
Toluene	ND	0.043		mg/Kg	1	9/1/2015 6:00:53 PM	D28591
Ethylbenzene	ND	0.043		mg/Kg	1	9/1/2015 6:00:53 PM	D28591
Xylenes, Total	ND	0.087		mg/Kg	1	9/1/2015 6:00:53 PM	D28591
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	9/1/2015 6:00:53 PM	D28591
Surr: 4-Bromofluorobenzene	94.8	70-130		%REC	1	9/1/2015 6:00:53 PM	D28591
Surr: Dibromofluoromethane	117	70-130		%REC	1	9/1/2015 6:00:53 PM	D28591
Surr: Toluene-d8	90.9	70-130		%REC	1	9/1/2015 6:00:53 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-3

Project: Jicarilla F #3

Collection Date: 8/26/2015 2:05:00 PM

Lab ID: 1508E29-003

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	9/1/2015 6:28:26 PM	C28591
Surr: BFB	110	70-130		%REC	1	9/1/2015 6:28:26 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 8:48:10 PM	21010
Surr: DNOP	100	57.9-140		%REC	1	9/1/2015 8:48:10 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.046		mg/Kg	1	9/1/2015 6:28:26 PM	D28591
Toluene	ND	0.046		mg/Kg	1	9/1/2015 6:28:26 PM	D28591
Ethylbenzene	ND	0.046		mg/Kg	1	9/1/2015 6:28:26 PM	D28591
Xylenes, Total	ND	0.092		mg/Kg	1	9/1/2015 6:28:26 PM	D28591
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	9/1/2015 6:28:26 PM	D28591
Surr: 4-Bromofluorobenzene	99.3	70-130		%REC	1	9/1/2015 6:28:26 PM	D28591
Surr: Dibromofluoromethane	127	70-130		%REC	1	9/1/2015 6:28:26 PM	D28591
Surr: Toluene-d8	94.2	70-130		%REC	1	9/1/2015 6:28:26 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-4

Project: Jicarilla F #3

Collection Date: 8/26/2015 2:10:00 PM

Lab ID: 1508E29-004

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	9/1/2015 6:56:01 PM	C28591
Surr: BFB	99.4	70-130		%REC	1	9/1/2015 6:56:01 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 9:31:45 PM	21010
Surr: DNOP	102	57.9-140		%REC	1	9/1/2015 9:31:45 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.043		mg/Kg	1	9/1/2015 6:56:01 PM	D28591
Toluene	ND	0.043		mg/Kg	1	9/1/2015 6:56:01 PM	D28591
Ethylbenzene	ND	0.043		mg/Kg	1	9/1/2015 6:56:01 PM	D28591
Xylenes, Total	ND	0.085		mg/Kg	1	9/1/2015 6:56:01 PM	D28591
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	9/1/2015 6:56:01 PM	D28591
Surr: 4-Bromofluorobenzene	90.8	70-130		%REC	1	9/1/2015 6:56:01 PM	D28591
Surr: Dibromofluoromethane	118	70-130		%REC	1	9/1/2015 6:56:01 PM	D28591
Surr: Toluene-d8	91.1	70-130		%REC	1	9/1/2015 6:56:01 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-5

Project: Jicarilla F #3

Collection Date: 8/28/2015 12:30:00 PM

Lab ID: 1508E29-005

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	9/1/2015 7:23:30 PM	C28591
Surr: BFB	106	70-130		%REC	1	9/1/2015 7:23:30 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 9:53:21 PM	21010
Surr: DNOP	105	57.9-140		%REC	1	9/1/2015 9:53:21 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.034		mg/Kg	1	9/1/2015 7:23:30 PM	D28591
Toluene	ND	0.034		mg/Kg	1	9/1/2015 7:23:30 PM	D28591
Ethylbenzene	ND	0.034		mg/Kg	1	9/1/2015 7:23:30 PM	D28591
Xylenes, Total	ND	0.068		mg/Kg	1	9/1/2015 7:23:30 PM	D28591
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	9/1/2015 7:23:30 PM	D28591
Surr: 4-Bromofluorobenzene	94.0	70-130		%REC	1	9/1/2015 7:23:30 PM	D28591
Surr: Dibromofluoromethane	127	70-130		%REC	1	9/1/2015 7:23:30 PM	D28591
Surr: Toluene-d8	95.2	70-130		%REC	1	9/1/2015 7:23:30 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-6

Project: Jicarilla F #3

Collection Date: 8/28/2015 12:35:00 PM

Lab ID: 1508E29-006

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	9/1/2015 7:50:58 PM	C28591
Surr: BFB	102	70-130		%REC	1	9/1/2015 7:50:58 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 10:15:10 PM	21010
Surr: DNOP	96.6	57.9-140		%REC	1	9/1/2015 10:15:10 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.031		mg/Kg	1	9/1/2015 7:50:58 PM	D28591
Toluene	ND	0.031		mg/Kg	1	9/1/2015 7:50:58 PM	D28591
Ethylbenzene	ND	0.031		mg/Kg	1	9/1/2015 7:50:58 PM	D28591
Xylenes, Total	0.093	0.061		mg/Kg	1	9/1/2015 7:50:58 PM	D28591
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	9/1/2015 7:50:58 PM	D28591
Surr: 4-Bromofluorobenzene	97.6	70-130		%REC	1	9/1/2015 7:50:58 PM	D28591
Surr: Dibromofluoromethane	124	70-130		%REC	1	9/1/2015 7:50:58 PM	D28591
Surr: Toluene-d8	92.4	70-130		%REC	1	9/1/2015 7:50:58 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN**Client Sample ID:** C-7**Project:** Jicarilla F #3**Collection Date:** 8/28/2015 12:40:00 PM**Lab ID:** 1508E29-007**Matrix:** MEOH (SOIL)**Received Date:** 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	9/1/2015 8:18:22 PM	C28591
Surr: BFB	104	70-130		%REC	1	9/1/2015 8:18:22 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 10:36:49 PM	21010
Surr: DNOP	102	57.9-140		%REC	1	9/1/2015 10:36:49 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.040		mg/Kg	1	9/1/2015 8:18:22 PM	D28591
Toluene	ND	0.040		mg/Kg	1	9/1/2015 8:18:22 PM	D28591
Ethylbenzene	ND	0.040		mg/Kg	1	9/1/2015 8:18:22 PM	D28591
Xylenes, Total	ND	0.080		mg/Kg	1	9/1/2015 8:18:22 PM	D28591
Surr: 1,2-Dichloroethane-d4	109	70-130		%REC	1	9/1/2015 8:18:22 PM	D28591
Surr: 4-Bromofluorobenzene	96.1	70-130		%REC	1	9/1/2015 8:18:22 PM	D28591
Surr: Dibromofluoromethane	121	70-130		%REC	1	9/1/2015 8:18:22 PM	D28591
Surr: Toluene-d8	90.9	70-130		%REC	1	9/1/2015 8:18:22 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-8

Project: Jicarilla F #3

Collection Date: 8/28/2015 12:45:00 PM

Lab ID: 1508E29-008

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.0		mg/Kg	1	9/1/2015 8:45:48 PM	C28591
Surr: BFB	105	70-130		%REC	1	9/1/2015 8:45:48 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2015 10:58:36 PM	21010
Surr: DNOP	105	57.9-140		%REC	1	9/1/2015 10:58:36 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.030		mg/Kg	1	9/1/2015 8:45:48 PM	D28591
Toluene	ND	0.030		mg/Kg	1	9/1/2015 8:45:48 PM	D28591
Ethylbenzene	ND	0.030		mg/Kg	1	9/1/2015 8:45:48 PM	D28591
Xylenes, Total	ND	0.060		mg/Kg	1	9/1/2015 8:45:48 PM	D28591
Surr: 1,2-Dichloroethane-d4	92.3	70-130		%REC	1	9/1/2015 8:45:48 PM	D28591
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	9/1/2015 8:45:48 PM	D28591
Surr: Dibromofluoromethane	122	70-130		%REC	1	9/1/2015 8:45:48 PM	D28591
Surr: Toluene-d8	93.0	70-130		%REC	1	9/1/2015 8:45:48 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-9

Project: Jicarilla F #3

Collection Date: 8/28/2015 12:50:00 PM

Lab ID: 1508E29-009

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	9/1/2015 9:13:13 PM	C28591
Surr: BFB	99.6	70-130		%REC	1	9/1/2015 9:13:13 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/1/2015 11:20:19 PM	21010
Surr: DNOP	101	57.9-140		%REC	1	9/1/2015 11:20:19 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.045		mg/Kg	1	9/1/2015 9:13:13 PM	D28591
Toluene	ND	0.045		mg/Kg	1	9/1/2015 9:13:13 PM	D28591
Ethylbenzene	ND	0.045		mg/Kg	1	9/1/2015 9:13:13 PM	D28591
Xylenes, Total	ND	0.090		mg/Kg	1	9/1/2015 9:13:13 PM	D28591
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	9/1/2015 9:13:13 PM	D28591
Surr: 4-Bromofluorobenzene	94.1	70-130		%REC	1	9/1/2015 9:13:13 PM	D28591
Surr: Dibromofluoromethane	122	70-130		%REC	1	9/1/2015 9:13:13 PM	D28591
Surr: Toluene-d8	90.7	70-130		%REC	1	9/1/2015 9:13:13 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-10

Project: Jicarilla F #3

Collection Date: 8/28/2015 12:55:00 PM

Lab ID: 1508E29-010

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	9/1/2015 9:40:37 PM	C28591
Surr: BFB	105	70-130		%REC	1	9/1/2015 9:40:37 PM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	9/1/2015 11:41:59 PM	21010
Surr: DNOP	92.7	57.9-140		%REC	1	9/1/2015 11:41:59 PM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.044		mg/Kg	1	9/1/2015 9:40:37 PM	D28591
Toluene	ND	0.044		mg/Kg	1	9/1/2015 9:40:37 PM	D28591
Ethylbenzene	ND	0.044		mg/Kg	1	9/1/2015 9:40:37 PM	D28591
Xylenes, Total	ND	0.088		mg/Kg	1	9/1/2015 9:40:37 PM	D28591
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%REC	1	9/1/2015 9:40:37 PM	D28591
Surr: 4-Bromofluorobenzene	94.8	70-130		%REC	1	9/1/2015 9:40:37 PM	D28591
Surr: Dibromofluoromethane	119	70-130		%REC	1	9/1/2015 9:40:37 PM	D28591
Surr: Toluene-d8	95.2	70-130		%REC	1	9/1/2015 9:40:37 PM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-11

Project: Jicarilla F #3

Collection Date: 8/28/2015 1:00:00 PM

Lab ID: 1508E29-011

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	9/2/2015 12:52:28 AM	C28591
Surr: BFB	102	70-130		%REC	1	9/2/2015 12:52:28 AM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/2/2015 12:03:40 AM	21010
Surr: DNOP	106	57.9-140		%REC	1	9/2/2015 12:03:40 AM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.046		mg/Kg	1	9/2/2015 12:52:28 AM	D28591
Toluene	ND	0.046		mg/Kg	1	9/2/2015 12:52:28 AM	D28591
Ethylbenzene	ND	0.046		mg/Kg	1	9/2/2015 12:52:28 AM	D28591
Xylenes, Total	ND	0.092		mg/Kg	1	9/2/2015 12:52:28 AM	D28591
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%REC	1	9/2/2015 12:52:28 AM	D28591
Surr: 4-Bromofluorobenzene	99.2	70-130		%REC	1	9/2/2015 12:52:28 AM	D28591
Surr: Dibromofluoromethane	110	70-130		%REC	1	9/2/2015 12:52:28 AM	D28591
Surr: Toluene-d8	96.6	70-130		%REC	1	9/2/2015 12:52:28 AM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-12

Project: Jicarilla F #3

Collection Date: 8/28/2015 1:05:00 PM

Lab ID: 1508E29-012

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/2/2015 1:19:50 AM	C28591
Surr: BFB	106	70-130		%REC	1	9/2/2015 1:19:50 AM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/2/2015 12:25:28 AM	21010
Surr: DNOP	105	57.9-140		%REC	1	9/2/2015 12:25:28 AM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.047		mg/Kg	1	9/2/2015 1:19:50 AM	D28591
Toluene	ND	0.047		mg/Kg	1	9/2/2015 1:19:50 AM	D28591
Ethylbenzene	ND	0.047		mg/Kg	1	9/2/2015 1:19:50 AM	D28591
Xylenes, Total	ND	0.094		mg/Kg	1	9/2/2015 1:19:50 AM	D28591
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	9/2/2015 1:19:50 AM	D28591
Surr: 4-Bromofluorobenzene	99.7	70-130		%REC	1	9/2/2015 1:19:50 AM	D28591
Surr: Dibromofluoromethane	119	70-130		%REC	1	9/2/2015 1:19:50 AM	D28591
Surr: Toluene-d8	93.8	70-130		%REC	1	9/2/2015 1:19:50 AM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-13

Project: Jicarilla F #3

Collection Date: 8/28/2015 1:10:00 PM

Lab ID: 1508E29-013

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	9/2/2015 1:47:22 AM	C28591
Surr: BFB	102	70-130		%REC	1	9/2/2015 1:47:22 AM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/2/2015 12:47:04 AM	21010
Surr: DNOP	98.5	57.9-140		%REC	1	9/2/2015 12:47:04 AM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.033		mg/Kg	1	9/2/2015 1:47:22 AM	D28591
Toluene	ND	0.033		mg/Kg	1	9/2/2015 1:47:22 AM	D28591
Ethylbenzene	ND	0.033		mg/Kg	1	9/2/2015 1:47:22 AM	D28591
Xylenes, Total	ND	0.066		mg/Kg	1	9/2/2015 1:47:22 AM	D28591
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	9/2/2015 1:47:22 AM	D28591
Surr: 4-Bromofluorobenzene	96.0	70-130		%REC	1	9/2/2015 1:47:22 AM	D28591
Surr: Dibromofluoromethane	119	70-130		%REC	1	9/2/2015 1:47:22 AM	D28591
Surr: Toluene-d8	93.3	70-130		%REC	1	9/2/2015 1:47:22 AM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-14

Project: Jicarilla F #3

Collection Date: 8/28/2015 1:15:00 PM

Lab ID: 1508E29-014

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	9/2/2015 2:14:46 AM	C28591
Surr: BFB	103	70-130		%REC	1	9/2/2015 2:14:46 AM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	21	9.9		mg/Kg	1	9/2/2015 1:08:47 AM	21010
Surr: DNOP	99.4	57.9-140		%REC	1	9/2/2015 1:08:47 AM	21010
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.039		mg/Kg	1	9/2/2015 2:14:46 AM	D28591
Toluene	ND	0.039		mg/Kg	1	9/2/2015 2:14:46 AM	D28591
Ethylbenzene	ND	0.039		mg/Kg	1	9/2/2015 2:14:46 AM	D28591
Xylenes, Total	ND	0.078		mg/Kg	1	9/2/2015 2:14:46 AM	D28591
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	9/2/2015 2:14:46 AM	D28591
Surr: 4-Bromofluorobenzene	88.9	70-130		%REC	1	9/2/2015 2:14:46 AM	D28591
Surr: Dibromofluoromethane	123	70-130		%REC	1	9/2/2015 2:14:46 AM	D28591
Surr: Toluene-d8	93.1	70-130		%REC	1	9/2/2015 2:14:46 AM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-15

Project: Jicarilla F #3

Collection Date: 8/28/2015 1:20:00 PM

Lab ID: 1508E29-015

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	9/2/2015 2:42:09 AM	C28591
Surr: BFB	105	70-130		%REC	1	9/2/2015 2:42:09 AM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/2/2015 1:30:25 AM	21044
Surr: DNOP	102	57.9-140		%REC	1	9/2/2015 1:30:25 AM	21044
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.032		mg/Kg	1	9/2/2015 2:42:09 AM	D28591
Toluene	ND	0.032		mg/Kg	1	9/2/2015 2:42:09 AM	D28591
Ethylbenzene	ND	0.032		mg/Kg	1	9/2/2015 2:42:09 AM	D28591
Xylenes, Total	ND	0.063		mg/Kg	1	9/2/2015 2:42:09 AM	D28591
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	9/2/2015 2:42:09 AM	D28591
Surr: 4-Bromofluorobenzene	92.4	70-130		%REC	1	9/2/2015 2:42:09 AM	D28591
Surr: Dibromofluoromethane	118	70-130		%REC	1	9/2/2015 2:42:09 AM	D28591
Surr: Toluene-d8	96.6	70-130		%REC	1	9/2/2015 2:42:09 AM	D28591

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 1508E29

Date Reported: 9/2/2015

CLIENT: APEX TITAN

Client Sample ID: C-16

Project: Jicarilla F #3

Collection Date: 8/28/2015 1:25:00 PM

Lab ID: 1508E29-016

Matrix: MEOH (SOIL)

Received Date: 8/29/2015 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	9/2/2015 3:09:29 AM	C28591
Surr: BFB	106	70-130		%REC	1	9/2/2015 3:09:29 AM	C28591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/2/2015 2:35:21 AM	21044
Surr: DNOP	103	57.9-140		%REC	1	9/2/2015 2:35:21 AM	21044
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.035		mg/Kg	1	9/2/2015 3:09:29 AM	D28591
Toluene	ND	0.035		mg/Kg	1	9/2/2015 3:09:29 AM	D28591
Ethylbenzene	ND	0.035		mg/Kg	1	9/2/2015 3:09:29 AM	D28591
Xylenes, Total	ND	0.071		mg/Kg	1	9/2/2015 3:09:29 AM	D28591
Surr: 1,2-Dichloroethane-d4	97.9	70-130		%REC	1	9/2/2015 3:09:29 AM	D28591
Surr: 4-Bromofluorobenzene	98.2	70-130		%REC	1	9/2/2015 3:09:29 AM	D28591
Surr: Dibromofluoromethane	117	70-130		%REC	1	9/2/2015 3:09:29 AM	D28591
Surr: Toluene-d8	96.3	70-130		%REC	1	9/2/2015 3:09:29 AM	D28591

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	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508E29

02-Sep-15

Client: APEX TITAN

Project: Jicarilla F #3

Sample ID	MB-21044	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	21044	RunNo:	28580					
Prep Date:	8/31/2015	Analysis Date:	9/1/2015	SeqNo:	864619	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	9.6		10.00		95.8	57.9	140			

Sample ID	LCS-21044	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	21044	RunNo:	28580					
Prep Date:	8/31/2015	Analysis Date:	9/1/2015	SeqNo:	864624	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.4	57.4	139			
Surr: DNOP	4.9		5.000		97.7	57.9	140			

Sample ID	MB-21010	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	21010	RunNo:	28580					
Prep Date:	8/27/2015	Analysis Date:	9/1/2015	SeqNo:	865408	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		91.5	57.9	140			

Sample ID	LCS-21010	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	21010	RunNo:	28580					
Prep Date:	8/27/2015	Analysis Date:	9/1/2015	SeqNo:	865620	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.1	57.4	139			
Surr: DNOP	4.3		5.000		85.2	57.9	140			

Sample ID	1508E29-015AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	C-15	Batch ID:	21044	RunNo:	28580					
Prep Date:	8/31/2015	Analysis Date:	9/2/2015	SeqNo:	865641	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.7	48.31	0	82.9	42.3	146			
Surr: DNOP	4.8		4.831		99.4	57.9	140			

Sample ID	1508E29-015AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	C-15	Batch ID:	21044	RunNo:	28580					
Prep Date:	8/31/2015	Analysis Date:	9/2/2015	SeqNo:	865642	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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#: 1508E29

02-Sep-15

Client: APEX TITAN

Project: Jicarilla F #3

Sample ID	1508E29-015AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	C-15	Batch ID:	21044	RunNo:	28580					
Prep Date:	8/31/2015	Analysis Date:	9/2/2015	SeqNo:	865642	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	49.95	0	85.7	42.3	146	6.63	28.9	
Surr: DNOP	5.0		4.995		101	57.9	140	0	0	

Qualifiers:

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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#: 1508E29

02-Sep-15

Client: APEX TITAN

Project: Jicarilla F #3

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	D28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	865657	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	0.48		0.5000		96.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.8	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			

Sample ID	100ng lcs2	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	D28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/1/2015	SeqNo:	865659	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	70	130			
Toluene	1.0	0.050	1.000	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.7	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		111	70	130			
Surr: Toluene-d8	0.50		0.5000		99.4	70	130			

Sample ID	1508e29-002ams2	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	C-2	Batch ID:	D28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	865665	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.043	0.8681	0	95.7	70	130			
Toluene	0.84	0.043	0.8681	0	96.8	65	138			
Surr: 1,2-Dichloroethane-d4	0.46		0.4340		106	70	130			
Surr: 4-Bromofluorobenzene	0.41		0.4340		93.6	70	130			
Surr: Dibromofluoromethane	0.53		0.4340		122	70	130			
Surr: Toluene-d8	0.41		0.4340		95.0	70	130			

Sample ID	1508e29-002amsd2	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	C-2	Batch ID:	D28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	865666	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.043	0.8681	0	99.4	70	130	3.83	20	
Toluene	0.80	0.043	0.8681	0	91.8	65	138	5.29	20	

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#: 1508E29

02-Sep-15

Client: APEX TITAN

Project: Jicarilla F #3

Sample ID	1508e29-002amsd2	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	C-2	Batch ID:	D28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	865666	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.44		0.4340		102	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.42		0.4340		97.0	70	130	0	0	
Surr: Dibromofluoromethane	0.53		0.4340		122	70	130	0	0	
Surr: Toluene-d8	0.38		0.4340		87.3	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#: 1508E29

02-Sep-15

Client: APEX TITAN

Project: Jicarilla F #3

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	C28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	865498	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	480		500.0		95.9	70	130			

Sample ID	2.5ug gro lcs2	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	C28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/1/2015	SeqNo:	865499	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	5.0	25.00	0	71.4	70	123			
Surr: BFB	520		500.0		103	70	130			

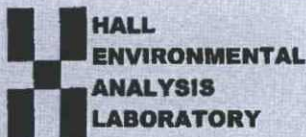
Sample ID	1508e29-001ams2	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	C-1	Batch ID:	C28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	865548	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	4.1	20.54	1.471	57.6	54.9	131			
Surr: BFB	430		410.9		106	70	130			

Sample ID	1508e29-001amsd2	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	C-1	Batch ID:	C28591	RunNo:	28591					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	865562	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	14	4.1	20.54	1.471	60.6	54.9	131	4.53	20	
Surr: BFB	440		410.9		108	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
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S % Recovery outside of range due to dilution or matrix

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



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

Sample Log-In Check List

Client Name: **APEX AZTEC**

Work Order Number: **1508E29**

ReptNo: **1**

Received by/date:

Logged By: **Lindsay Mangin**

08/29/15
8/29/2015 10:00:00 AM

Completed By: **Lindsay Mangin**

8/31/2015 5:53:20 AM

Reviewed By:

AK 08/31/15

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°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	1.6	Good	Yes			

CHAIN OF CUSTODY RECORD

 APEX Office Location <u>Aztec</u>		Laboratory: <u>Hall</u>		ANALYSIS REQUESTED <div style="transform: rotate(-90deg); position: absolute; left: 50%; top: 50%;"> 8021 BTEX 8015 TPH (GRO/DEO) </div>										Lab use only Due Date:									
		Address: <u>ABA</u>												Temp. of coolers when received (C°): <u>1.6</u>									
		Contact: <u>Freeman</u>												1 2 3 4 5 Page <u>1</u> of <u>2</u>									
Project Manager <u>K. Summers</u>		PO/SO #:																					
Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature <u>R. Deechilly</u>																					
Proj. No.		Project Name <u>Jicarilla F#3</u>				No/Type of Containers																	
Matrix	Date	Time	COLEP	GARB	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	8/26/15	1400			C-1									1508 DEZ9 -001									
	8/27/14	1330			C-2									-002									
	8/26/15	1405			C-3									-003									
	8/26/15	1410			C-4									-004									
	8/28/15	1230			C-5									-005									
		1235			C-6									-006									
		1240			C-7									-007									
		1245			C-8									-008									
		1250			C-9									-009									
		1255			C-10									-010									
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>3 day</u>																							
Relinquished by (Signature) <u>R. Deechilly</u>			Date: <u>8/28/15</u>		Time: <u>1745</u>		Received by (Signature) <u>Musthacek</u>			Date: <u>8/28/15</u>		Time: <u>1745</u>		NOTES: Bill to Tom Long (EPRD) Non AFE # N222 22 <u>3 day rush (9/2/15)</u>									
Relinquished by (Signature) <u>Musthacek</u>			Date: <u>8/28/15</u>		Time: <u>1839</u>		Received by (Signature) <u>[Signature]</u>			Date: <u>08/29/15</u>		Time: <u>1000</u>											
Relinquished by (Signature)			Date:		Time:		Received by (Signature)			Date:		Time:											
Relinquished by (Signature)			Date:		Time:		Received by (Signature)			Date:		Time:											

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

CHAIN OF CUSTODY RECORD

 APEX Office Location <u>Aztec</u>		Laboratory: <u>Hall</u>		ANALYSIS REQUESTED <div style="transform: rotate(-45deg); display: inline-block;">8021 BTEX 8015 TPH (GRO NDC)</div>										Lab use only Due Date:										
		Address: <u>ABQ</u>												Temp. of coolers when received (C°): <u>14</u> <u>3.6</u>										
Project Manager <u>K. Summers</u>		Contact: <u>Freeman</u>		Phone: _____		PO/SO #: _____												Page <u>2</u> of <u>2</u>						
Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature <u>Ranee Deechilly</u>																						
Proj. No. _____		Project Name <u>Jicarilla F#3</u>				No/Type of Containers																		
Matrix	Date	Time	Code	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)											
S	8/28/15	1300			C-11						1		X	X	150129-011									
↓		1305			C-12						1		X	X	-012									
↓		1310			C-13						1		X	X	-013									
↓		1315			C-14						1		X	X	-014									
↓		1320			C-15						1		X	X	-015									
↓		1325			C-16						1		X	X	-016									
NPS																								
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>3 day</u>																								
Relinquished by (Signature) <u>Ranee Deechilly</u>			Date: <u>8/28/15</u> Time: <u>1745</u>		Received by (Signature) <u>Christa Webb</u>			Date: <u>8/28/15</u> Time: <u>1745</u>		NOTES: Bill to Tom Loney Non AFE # N22222 3 day rush (9/2/15)														
Relinquished by (Signature) <u>Christa Webb</u>			Date: <u>8/28/15</u> Time: <u>1837</u>		Received by (Signature) <u>[Signature]</u>			Date: <u>8/24/15</u> Time: <u>1000</u>																
Relinquished by (Signature)			Date:		Time:		Received by (Signature)										Date:		Time:					
Relinquished by (Signature)			Date:		Time:		Received by (Signature)										Date:		Time:					

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