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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: **Enterprise Field Services, LLC**	OGRID: **151618**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	Incident # *(assigned by OCD)*: **NVF1906550862**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.385225** Longitude **-107.320180** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Lateral 2C-29 Pipeline**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **2/14/2019**	Serial Number *(if applicable)*: **NA**

Unit Letter	Section	Township	Range	County
L	**23**	**25N**	**3W**	**Rio Arriba**

Surface Owner: ☐ State ☐ Federal ☒ Tribal ☐ Private (*Name*: **Jicarilla Apache Tribe**)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **10-15 BBLS**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **31.10 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release On February 14, 2019, an Enterprise technician discovered a release of natural gas and natural gas liquids on the Lateral 2C-29 pipeline. An area of approximately 10 feet long by 10 feet wide was impacted by the released fluids. Also, fluids ran down a bar ditch along the adjacent dirt road for about 120 feet. The pipeline was blown down, depressurized, locked out and tagged out. Enterprise recovered the released fluids as much as practicable and barricaded off the affected areas. Repairs and remediation were completed on March 27, 2019. The final excavation dimensions measured approximately 24 feet long by 14 feet wide by 19 feet deep. Approximately 450 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. A third party closure report is included with this "Final." C-141.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jon E. Fields Title: Director, Field Environmental

Signature: Jon E. Fields Date: 11/8/19

email: jefields@eprod.com Telephone: (713) 381-6684

OCD Only

Received by: OCD Date: 11/11/19

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Cory Date: 2/14/2020

Printed Name: Cory Title: Environmental Specialist

Lateral 2C-29
Release Closure Report

Unit Letter I, Section 23, Township 25 North, Range 5 West
Rio Arriba County, New Mexico

October 1, 2019

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

Rule Engineering, LLC
Solutions to Regulations for Industry

Enterprise Field Services, LLC
Lateral 2C-29 Pipeline
Release Closure 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

October 1, 2019

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Tables

Figures

Appendices

1.0 Introduction

The Enterprise Field Services, LLC (Enterprise) Lateral 2C-29 pipeline release site is located in Unit Letter I, Section 23, Township 25 North, Range 5 West, in Rio Arriba County, New Mexico. The release was discovered on February 14, 2019, and the line was immediately isolated and depressurized.

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	Lateral 2C-29 Pipeline Release		
Site Location Description	Unit Letter I, Section 23, Township 25 North, Range 5 West (N36.38524, W107.32052)		
Land Jurisdiction	Jicarilla Apache Reservation		
Discovery Date	February 14, 2019		
Release Source	Corrosion of pipeline		
Substance(s) Released	Natural gas and pipeline liquids		
Contractor	Oil Field Trash (OFT)	***Remedial Excavation Dimensions***	24 feet by 14 feet by 19 feet in depth, plus a path 280 feet by 4 feet by 3 to 4 feet in depth
Volume of Soil Transported for Disposal/Remediation	Approximately 450 cubic yards	***Disposal Facility***	Envirotech Landfarm (Permit #NM-01-0011)

3.0 Remediation Standards Determination

The release site is located on the Jicarilla Apache Nation with oversight provided by the Jicarilla Apache Nation Environmental Protection Office (JANEPO). JANEPO utilizes the remediation standards of the New Mexico Oil Conservation Division (NMOCD) as determined by 19.15.29 of the New Mexico Authority Code (NMAC). These remediation standards are determined by depth to groundwater with a concentration of less than 10,000 milligrams per kilogram (mg/kg) total dissolved solids (TDS) and several factors outlined in 19.15.29.12(4)(e) NMAC.

Depth to groundwater at the site is anticipated to be greater than 50 feet below grade surface (bgs) based on the local well records and the area's geology and geomorphology. Supporting documents for this determination are included in Appendix A. Concurrence with this determination was granted by Mr. Hobson Sandoval during a site visit.

Closure criteria for the soils impacted at the release location are determined by the *"51 feet - 100 feet"* category of Table 1, 19.15.29.12 NMAC, which are as follows: 10,000 milligrams per kilogram (mg/kg) chloride per United States Environmental Protection Agency (USEPA) Method 300.0 or SM 4500-Cl B; 2,500 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO), diesel range organics (DRO), and mineral oil range organics (MRO) per USEPA Method 8015M; 1,000 mg/kg TPH as GRO and DRO per USEPA Method 8015M; 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX) per USEPA Method 8021B or 8260B; and 10 mg/kg benzene per USEPA Method 8021B or 8260B.

4.0 Field Activities

On March 19, 2019, Enterprise initiated repair activities at the location. OFT provided heavy equipment operation and repair support. Rule Engineering, LLC (Rule) personnel provided excavation guidance and collected confirmation samples from the resultant excavation. Approximately 450 cubic yards of hydrocarbon impacted soils were removed from the remedial portion of the excavation measuring approximately 24 feet by 14 feet by 19 feet in depth. Additionally, a release flow path excavation immediately west of the repair excavation measured approximately 280 feet by 4 feet by 3 to 4 feet in depth.

A depiction of the excavation with sample locations is included as Figure 2. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix B.

5.0 Confirmation Soil Sampling

Rule collected confirmation soil samples SC-1 through SC-7 from the sidewalls and base of the remedial excavation and samples P-1 and P-2 from the release flow path on March 20, 2019. After additional soil removal from the excavation base, samples SC-8 and SC-9 were collected on March 25, 2019. Further excavation was performed along the release flow path and samples P-3 through P-5 (North Wall, South Wall, and Base for each) were collected on March 27, 2019. Each confirmation soil sample is a representative composite comprised of five equivalent aliquots of soil collected from the sampled area.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per USEPA Method 8021B, TPH (GRO/DRO/MRO) per USEPA 8015M/D, and chlorides per USEPA Method 300.0.

A depiction of the excavation extents with sample locations is included as Figure 2. A photograph log of the confirmation sampling areas is included in Appendix C.

6.0 Laboratory Analytical Results

Do to closure criteria exceedances for samples SC-7 and P-2, additional soil was removed from these sample areas. Laboratory analytical results for the remainder of the confirmation samples are as follows:

- Benzene concentrations are below the laboratory reporting limits, which are below the closure criteria of 10 mg/kg.
- Total BTEX concentrations range from below laboratory reporting limits to 12 mg/kg, which are below the closure criteria of 50 mg/kg.
- TPH as GRO/DRO concentrations range from below laboratory reporting limits to 890 mg/kg, which are below the closure criteria of 1,000 mg/kg.
- TPH as GRO/DRO/MRO concentrations range from below the laboratory reporting limits to 1,100 mg/kg, which are below the closure criteria of 2,500 mg/kg.
- Chloride concentrations are below the laboratory reporting limits, which are below the closure criteria of 10,000 mg/kg. Note that laboratory analytical results for sample P-2 is used to show that chloride concentrations in the area of samples P-3 through P-5 are below the closure criteria.

Laboratory analytical results are summarized in Table 1, confirmation sample locations are illustrated on Figure 2, and the analytical laboratory reports are included in Appendix D.

7.0 Conclusions

Hydrocarbon impacted soils associated with the Lateral 2C-29 release have been excavated and transported to an approved landfarm for disposal/remediation. Laboratory analytical results for the confirmation samples collected from the excavation report benzene, total BTEX, TPH, and chloride concentrations below the closure criteria set forth for the release. Therefore, 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.

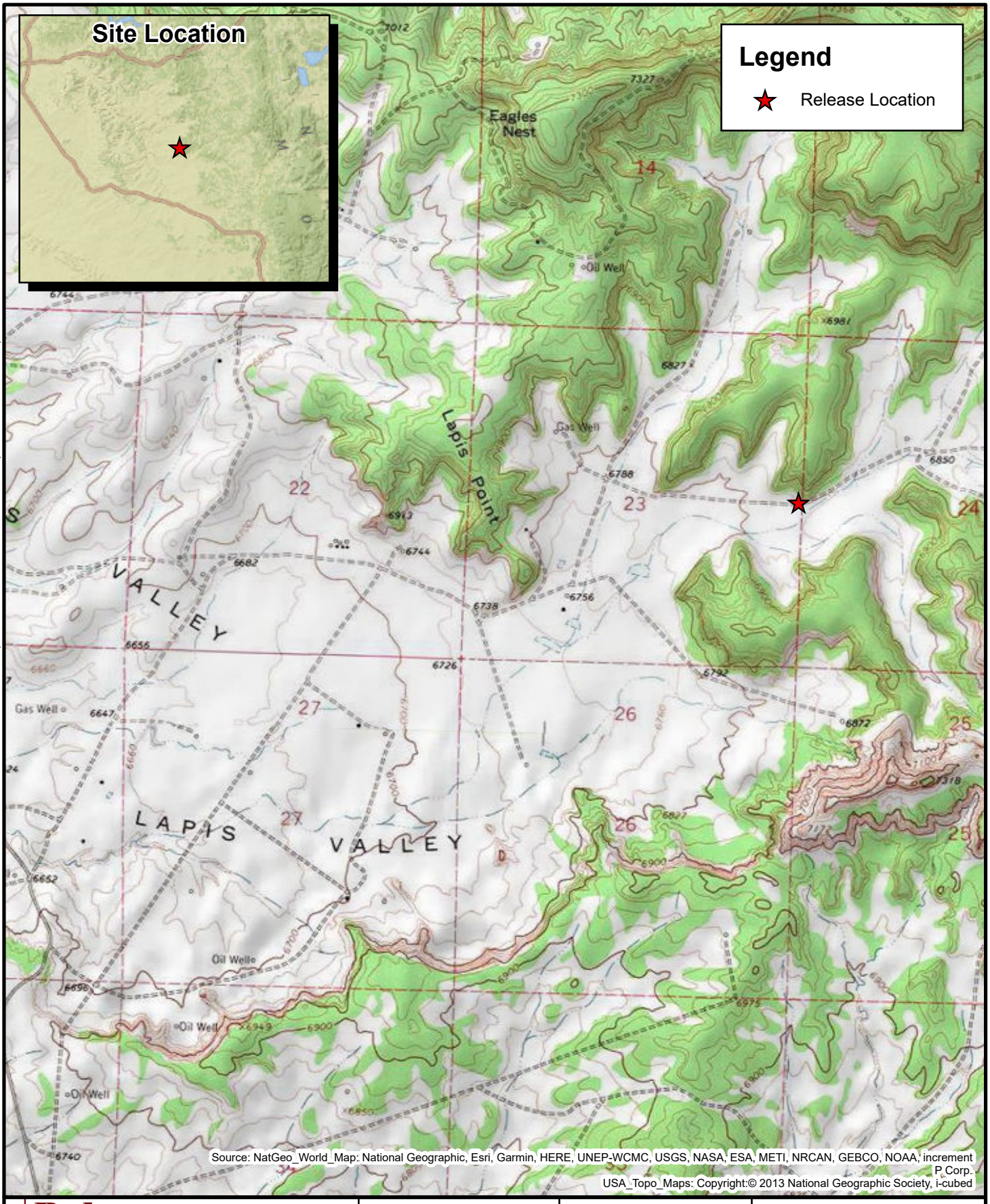
Table

Table 1. Summary of Laboratory Analytical Results
Enterprise Field Services
Lateral 2C-29 Pipeline Release
Rio Arriba County, New Mexico

Sample Name	Date	Approximate Sample Depth (ft bgs)	Sample Location	Laboratory Analytical Results								
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylben-zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)	Chloride (mg/kg)
Closure Criteria*				**10**	**NE**	**NE**	**NE**	**50**	**1,000 as GRO+DRO / 2,500 Total**			**10,000**
Removed by Excavation												
SC-7	3/20/2019	17 - 18	Base	0.21	12	3.2	33	48	**510**	**850**	**260**	<60
P-2	3/20/2019	0.5 - 2	Release Path - East	0.96	39	15	170	**225**	**2,400**	**2,400**	**710**	<60
Confirmation Samples												
SC-1	3/20/2019	0 - 19	West Wall	<0.018	0.040	<0.036	0.36	0.40	4.7	<9.9	<50	<60
SC-2	3/20/2019	0 - 19	North Wall - West	<0.018	<0.036	<0.036	0.072	0.072	<3.6	<9.9	<50	<60
SC-3	3/20/2019	0 - 19	North Wall - East	<0.018	<0.036	<0.036	<0.073	ND	<3.6	<9.6	<48	<60
SC-4	3/20/2019	0 - 19	East Wall	<0.018	<0.036	<0.036	0.15	0.15	<3.6	<9.8	<49	<60
SC-5	3/20/2019	0 - 19	South Wall - East	<0.017	<0.034	<0.034	<0.068	ND	<3.4	<9.8	<49	<60
SC-6	3/20/2019	0 - 19	South Wall - West	0.042	0.22	<0.036	0.26	0.52	<3.6	<9.4	<47	<60
SC-8	3/25/2019	19	Base - West	<0.090	<0.18	<0.18	<0.36	ND	<18	29	<48	--
SC-9	3/25/2019	19	Base - East	<0.089	<0.18	<0.18	<0.36	ND	<18	40	64	--
P-1	3/20/2019	0.5 - 3	Release Path - West	<0.016	0.32	0.62	11	12	150	740	210	<60
P-3 North Wall	3/27/2019	0 - 4	Release Path - West	<0.018	<0.037	<0.037	<0.037	ND	<3.7	12	<49	--
P-3 Base	3/27/2019	3 - 4	Release Path - West	<0.017	<0.033	<0.033	0.13	0.13	<3.3	<9.5	<48	--
P-3 South Wall	3/27/2019	0 - 4	Release Path - West	<0.018	<0.036	<0.036	<0.071	ND	<3.6	<9.2	<46	--
P-4 North Wall	3/27/2019	0 - 4	Release Path - Mid	<0.018	<0.037	<0.037	<0.073	ND	<3.7	<9.8	<49	--
P-4 Base	3/27/2019	3 - 4	Release Path - Mid	<0.019	<0.039	<0.039	<0.077	ND	<3.9	<9.8	<49	--
P-4 South Wall	3/27/2019	0 - 4	Release Path - Mid	<0.019	<0.038	<0.038	<0.076	ND	<3.8	<9.7	<49	--
P-5 North Wall	3/27/2019	0 - 4	Release Path - East	<0.019	<0.038	<0.038	<0.076	ND	<3.8	<9.2	<46	--
P-5 Base	3/27/2019	3 - 4	Release Path - East	<0.021	<0.041	<0.041	<0.083	ND	<4.1	<9.6	<48	--
P-5 South Wall	3/27/2019	0 - 4	Release Path - East	<0.019	<0.038	<0.038	<0.075	ND	<3.8	<10	<50	--

Notes:
ft bgs - feet below grade surface
mg/kg - milligrams per kilogram
NE - not established
ND - not detected above laboratory reporting limits
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
*Per Table 1 of 19.15.29.12 NMAC, based on category *"51 feet to 100 feet" depth* to groundwater

Figures



Document Path: R:\27 GIS CAD\Enterprise Products\Lateral 2C-29\Enterprise Lateral 2C-29.aprx

Rule Engineering, LLC
Solutions to Regulations for Industry

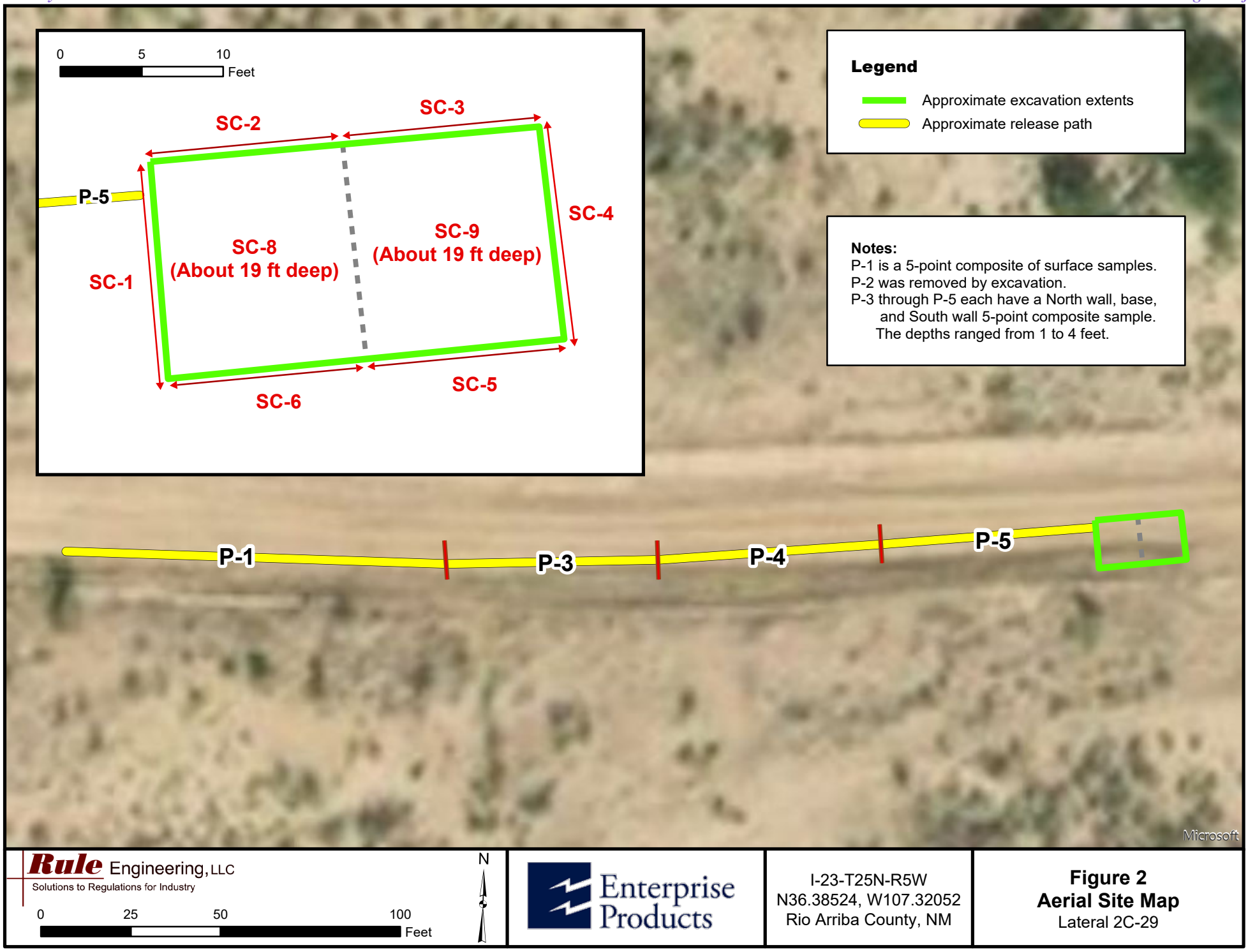
0 1,000 2,000 4,000 Feet

Lapis Point Quadrangle
1:24,000

Enterprise Products

I-23-T25N-R5W
N36.38524, W107.32052
Rio Arriba County, NM

Figure 1
Topographic Site Map
Lateral 2C-29



Rule Engineering, LLC
Solutions to Regulations for Industry

0 25 50 100
Feet

N

Enterprise Products

I-23-T25N-R5W
N36.38524, W107.32052
Rio Arriba County, NM

Figure 2
Aerial Site Map
Lateral 2C-29

Document Path: R:\27 GIS CAD\Enterprise Products\Lateral 2C-29\Enterprise Lateral 2C-29.aprx

Date: 9/24/2019

Appendix A

Closure Criteria Determination Documents

Lateral 2C-29 Pipeline Release Hydrogeologic Information

Depth to groundwater is anticipated to be greater than 50 feet below ground surface. No shallow groundwater indicative vegetation such as tamarisk or cotton wood trees were observed within the broad valley adjacent to the site. There is no developed wash in the valley which shows evidence of sheet flow.

There are no springs indicated on the topographic map and no increased vegetation cover on the aerial photo to suggest the presence of a spring within 0.5 mile of the site.

The nearest significant watercourse is an ephemeral wash which shows evidence of sheet flow rather than concentrated flow. It is located approximately 480 feet southwest of the location and 512 feet southeast of the location.

There are no water wells registered within 0.5 mile of the location.

The site is not within 300 feet of a wetland and is not within a 100-year floodplain.

The site is underlain by the Tertiary San Jose Formation which does not exhibit karst features.


Lateral 2C-29
Sec 24, T25N, R5W
GPS: N36.38552, W107.32018
Legend
Approximate Excavation Extents
Approximate Release Path
Appendix A - Page 2
N
500 ft
Google Earth


Lateral 2C-29
Sec 24, T25N, R5W
GPS: N36.38552, W107.32018
Lateral 2C-29
Google Earth
© 2018 Google
Appendix A - Page 3
N
1000 ft

Appendix B

Executed C-138 Soil Waste Acceptance Form

cDistrict 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 97057-0996

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:**
2. Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401

Invoice Information:
AFE: N41519
PM: Dwayne Dixon
Pay Key: RB21200

3. **Originating Site:**
Lateral 2C-29

4. **Location of Material (Street Address, City, State or ULSTR):**
UL L Section 24 T25N R5W; 36.385225 -107.320180 March 2019

4. **Source and Description of Waste:** Hydrocarbon/Methanol impacted soil from remediation activities associated with a natural gas meter tube release.
5. Estimated Volume 50 (yd³) bbls Known Volume (to be entered by the operator at the end of the haul) 450 (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, (Thomas Long) 3-18-19, representative for Enterprise Field Services, LLC authorize Envirotech, Inc. to
Generator Signature
complete the required testing/sign the Generator Waste Testing Certification.

I, Greg Crabtree, 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:** ~~TBD~~ Stan Haven, OFT, Siesta

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: Greg Crabtree TITLE: Envtl Manager DATE: 3/19/19
SIGNATURE: TELEPHONE NO.: 505-632-0615

Appendix C

Photograph Log

Photograph Log
Lateral 2C-29 Pipeline Release
Enterprise Field Services, LLC

Photograph #1	
Client: Enterprise	
Site Name: Lateral 2C-29 Pipeline Release	
Date Photo Taken: March 25, 2019	
Release Location: N36.38524, W107.32052 I-23-25N-5W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing west, view of the final repair excavation extents.

Photograph #2	
Client: Enterprise	
Site Name: Lateral 2C-29 Pipeline Release	
Date Photo Taken: March 25, 2019	
Release Location: N36.38524, W107.32052 I-23-25N-5W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing northeast, view of the final repair excavation extents.

Photograph Log
Lateral 2C-29 Pipeline Release
Enterprise Field Services, LLC

Photograph #3	
Client: Enterprise	
Site Name: Lateral 2C-29 Pipeline Release	
Date Photo Taken: March 25, 2019	
Release Location: N36.38524, W107.32052 I-23-25N-5W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing west, view of the entire excavated area.

Photograph #4	
Client: Enterprise	
Site Name: Lateral 2C-29 Pipeline Release	
Date Photo Taken: March 25, 2019	
Release Location: N36.38524, W107.32052 I-23-25N-5W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing west, view of the eastern portion of the excavated release path.

Photograph Log
Lateral 2C-29 Pipeline Release
Enterprise Field Services, LLC

Photograph #5	
Client: Enterprise	
Site Name: Lateral 2C-29 Pipeline Release	
Date Photo Taken: March 25, 2019	
Release Location: N36.38524, W107.32052 I-23-25N-5W Rio Arriba County, NM	
Photo Taken by: Heather Woods	Description: Facing west, view of the western portion of the excavated release path.

Appendix D

Analytical Laboratory Report

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

March 26, 2019

Heather Woods

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

RE: Enterprise Lateral 2C-29 OrderNo.: 1903979

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 9 sample(s) on 3/21/2019 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-1
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:30:00 PM
Lab ID: 1903979-001 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 10:01:19 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/21/2019 10:31:43 AM	43811
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/21/2019 10:31:43 AM	43811
Surr: DNOP	95.0	70-130		%Rec	1	3/21/2019 10:31:43 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	4.7	3.6		mg/Kg	1	3/21/2019 8:28:42 AM	43799
Surr: BFB	139	73.8-119	S	%Rec	1	3/21/2019 8:28:42 AM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	3/21/2019 8:28:42 AM	43799
Toluene	0.040	0.036		mg/Kg	1	3/21/2019 8:28:42 AM	43799
Ethylbenzene	ND	0.036		mg/Kg	1	3/21/2019 8:28:42 AM	43799
Xylenes, Total	0.36	0.072		mg/Kg	1	3/21/2019 8:28:42 AM	43799
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	3/21/2019 8:28:42 AM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-2
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:40:00 PM
Lab ID: 1903979-002 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 10:13:44 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/21/2019 10:53:39 AM	43811
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/21/2019 10:53:39 AM	43811
Surr: DNOP	87.9	70-130		%Rec	1	3/21/2019 10:53:39 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	3/21/2019 8:52:06 AM	43799
Surr: BFB	106	73.8-119		%Rec	1	3/21/2019 8:52:06 AM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	3/21/2019 8:52:06 AM	43799
Toluene	ND	0.036		mg/Kg	1	3/21/2019 8:52:06 AM	43799
Ethylbenzene	ND	0.036		mg/Kg	1	3/21/2019 8:52:06 AM	43799
Xylenes, Total	0.072	0.071		mg/Kg	1	3/21/2019 8:52:06 AM	43799
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	3/21/2019 8:52:06 AM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-3
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:20:00 PM
Lab ID: 1903979-003 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 10:26:09 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/21/2019 11:15:44 AM	43811
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/21/2019 11:15:44 AM	43811
Surr: DNOP	81.7	70-130		%Rec	1	3/21/2019 11:15:44 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	3/21/2019 9:15:36 AM	43799
Surr: BFB	101	73.8-119		%Rec	1	3/21/2019 9:15:36 AM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	3/21/2019 9:15:36 AM	43799
Toluene	ND	0.036		mg/Kg	1	3/21/2019 9:15:36 AM	43799
Ethylbenzene	ND	0.036		mg/Kg	1	3/21/2019 9:15:36 AM	43799
Xylenes, Total	ND	0.073		mg/Kg	1	3/21/2019 9:15:36 AM	43799
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	3/21/2019 9:15:36 AM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-4
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:15:00 PM
Lab ID: 1903979-004 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 10:38:34 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/21/2019 11:37:38 AM	43811
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/21/2019 11:37:38 AM	43811
Surr: DNOP	87.8	70-130		%Rec	1	3/21/2019 11:37:38 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	3/21/2019 9:39:00 AM	43799
Surr: BFB	107	73.8-119		%Rec	1	3/21/2019 9:39:00 AM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	3/21/2019 9:39:00 AM	43799
Toluene	ND	0.036		mg/Kg	1	3/21/2019 9:39:00 AM	43799
Ethylbenzene	ND	0.036		mg/Kg	1	3/21/2019 9:39:00 AM	43799
Xylenes, Total	0.15	0.072		mg/Kg	1	3/21/2019 9:39:00 AM	43799
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	3/21/2019 9:39:00 AM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-5
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:25:00 PM
Lab ID: 1903979-005 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 10:50:59 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/21/2019 11:59:40 AM	43811
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/21/2019 11:59:40 AM	43811
Surr: DNOP	88.6	70-130		%Rec	1	3/21/2019 11:59:40 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	3/21/2019 10:02:24 AM	43799
Surr: BFB	103	73.8-119		%Rec	1	3/21/2019 10:02:24 AM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	3/21/2019 10:02:24 AM	43799
Toluene	ND	0.034		mg/Kg	1	3/21/2019 10:02:24 AM	43799
Ethylbenzene	ND	0.034		mg/Kg	1	3/21/2019 10:02:24 AM	43799
Xylenes, Total	ND	0.068		mg/Kg	1	3/21/2019 10:02:24 AM	43799
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	3/21/2019 10:02:24 AM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-6
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:45:00 PM
Lab ID: 1903979-006 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 11:03:23 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/21/2019 12:21:44 PM	43811
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/21/2019 12:21:44 PM	43811
Surr: DNOP	86.9	70-130		%Rec	1	3/21/2019 12:21:44 PM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	3/21/2019 10:26:01 AM	43799
Surr: BFB	99.3	73.8-119		%Rec	1	3/21/2019 10:26:01 AM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.042	0.018		mg/Kg	1	3/21/2019 10:26:01 AM	43799
Toluene	0.22	0.036		mg/Kg	1	3/21/2019 10:26:01 AM	43799
Ethylbenzene	ND	0.036		mg/Kg	1	3/21/2019 10:26:01 AM	43799
Xylenes, Total	0.26	0.071		mg/Kg	1	3/21/2019 10:26:01 AM	43799
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	3/21/2019 10:26:01 AM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-7
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:50:00 PM
Lab ID: 1903979-007 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 11:15:48 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	850	20		mg/Kg	2	3/25/2019 10:59:45 AM	43811
Motor Oil Range Organics (MRO)	260	99		mg/Kg	2	3/25/2019 10:59:45 AM	43811
Surr: DNOP	102	70-130		%Rec	2	3/25/2019 10:59:45 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	510	37		mg/Kg	10	3/21/2019 1:49:04 PM	43799
Surr: BFB	368	73.8-119	S	%Rec	10	3/21/2019 1:49:04 PM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.21	0.18		mg/Kg	10	3/21/2019 1:49:04 PM	43799
Toluene	12	0.37		mg/Kg	10	3/21/2019 1:49:04 PM	43799
Ethylbenzene	3.2	0.37		mg/Kg	10	3/21/2019 1:49:04 PM	43799
Xylenes, Total	33	0.73		mg/Kg	10	3/21/2019 1:49:04 PM	43799
Surr: 4-Bromofluorobenzene	123	80-120	S	%Rec	10	3/21/2019 1:49:04 PM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-1
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 12:55:00 PM
Lab ID: 1903979-008 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 11:28:13 AM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	740	9.6		mg/Kg	1	3/25/2019 10:15:40 AM	43811
Motor Oil Range Organics (MRO)	210	48		mg/Kg	1	3/25/2019 10:15:40 AM	43811
Surr: DNOP	132	70-130	S	%Rec	1	3/25/2019 10:15:40 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	150	3.3		mg/Kg	1	3/21/2019 2:12:39 PM	43799
Surr: BFB	1350	73.8-119	S	%Rec	1	3/21/2019 2:12:39 PM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.016		mg/Kg	1	3/21/2019 2:12:39 PM	43799
Toluene	0.32	0.033		mg/Kg	1	3/21/2019 2:12:39 PM	43799
Ethylbenzene	0.62	0.033		mg/Kg	1	3/21/2019 2:12:39 PM	43799
Xylenes, Total	11	0.65		mg/Kg	10	3/21/2019 8:05:14 PM	43799
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	10	3/21/2019 8:05:14 PM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1903979**
Date Reported: **3/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-2
Project: Enterprise Lateral 2C-29
Collection Date: 3/20/2019 1:00:00 PM
Lab ID: 1903979-009 **Matrix:** SOIL **Received Date:** 3/21/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	3/21/2019 12:05:26 PM	43813
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	2400	96		mg/Kg	10	3/25/2019 8:47:48 AM	43811
Motor Oil Range Organics (MRO)	710	480		mg/Kg	10	3/25/2019 8:47:48 AM	43811
Surr: DNOP	0	70-130	S	%Rec	10	3/25/2019 8:47:48 AM	43811
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	2400	160		mg/Kg	50	3/21/2019 2:36:05 PM	43799
Surr: BFB	365	73.8-119	S	%Rec	50	3/21/2019 2:36:05 PM	43799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.96	0.82		mg/Kg	50	3/21/2019 2:36:05 PM	43799
Toluene	39	1.6		mg/Kg	50	3/21/2019 2:36:05 PM	43799
Ethylbenzene	15	1.6		mg/Kg	50	3/21/2019 2:36:05 PM	43799
Xylenes, Total	170	3.3		mg/Kg	50	3/21/2019 2:36:05 PM	43799
Surr: 4-Bromofluorobenzene	121	80-120	S	%Rec	50	3/21/2019 2:36:05 PM	43799

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903979**

26-Mar-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-29

Sample ID: **MB-43813**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **43813**	RunNo: **58531**							
Prep Date: **3/21/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965974**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-43813**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **43813**	RunNo: **58531**							
Prep Date: **3/21/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965975**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903979**

26-Mar-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-29

Sample ID: **LCS-43811** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **43811** RunNo: **58525**

Prep Date: **3/21/2019** Analysis Date: **3/21/2019** SeqNo: **1964498** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	10	10	50.00	0	20.6	63.9	124			S
Surr: DNOP	4.8		5.000		96.4	70	130			

Sample ID: **MB-43811** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **43811** RunNo: **58525**

Prep Date: **3/21/2019** Analysis Date: **3/21/2019** SeqNo: **1964499** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903979**

26-Mar-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-29

Sample ID: **MB-43799**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **43799**	RunNo: **58540**
Prep Date: **3/20/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965691** 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	970		1000		97.0	73.8	119			

Sample ID: **LCS-43799**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **43799**	RunNo: **58540**
Prep Date: **3/20/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965692** 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	105	80.1	123			
Surr: BFB	1100		1000		112	73.8	119			

Sample ID: **MB-43782**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **43782**	RunNo: **58540**
Prep Date: **3/20/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965705** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		102	73.8	119			

Sample ID: **LCS-43782**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **43782**	RunNo: **58540**
Prep Date: **3/20/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965706** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		116	73.8	119			

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903979**

26-Mar-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-29

Sample ID: **MB-43799**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **43799**	RunNo: **58540**							
Prep Date: **3/20/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965723**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: **LCS-43799**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **43799**	RunNo: **58540**							
Prep Date: **3/20/2019**	Analysis Date: **3/21/2019**	SeqNo: **1965724**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	98.3	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Sample ID: **1903979-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **SC-1**	Batch ID: **43799**	RunNo: **58540**							
Prep Date:	Analysis Date: **3/21/2019**	SeqNo: **1965725**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.65	0.018	0.7215	0.008297	89.0	63.9	127			
Toluene	0.72	0.036	0.7215	0.03997	94.7	69.9	131			
Ethylbenzene	0.71	0.036	0.7215	0.02633	94.5	71	132			
Xylenes, Total	2.4	0.072	2.165	0.3595	96.4	71.8	131			
Surr: 4-Bromofluorobenzene	0.79		0.7215		110	80	120			

Sample ID: **1903979-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **SC-1**	Batch ID: **43799**	RunNo: **58540**							
Prep Date:	Analysis Date: **3/21/2019**	SeqNo: **1965726**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.65	0.018	0.7215	0.008297	88.4	63.9	127	0.712	20	
Toluene	0.71	0.036	0.7215	0.03997	92.8	69.9	131	1.91	20	
Ethylbenzene	0.70	0.036	0.7215	0.02633	92.9	71	132	1.61	20	
Xylenes, Total	2.4	0.072	2.165	0.3595	95.2	71.8	131	0.996	20	
Surr: 4-Bromofluorobenzene	0.78		0.7215		107	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1903979 RcptNo: 1

Received By: **Anne Thorne** 3/21/2019 7:00:00 AM Anne Thorne

Completed By: **Anne Thorne** 3/21/2019 7:29:14 AM Anne Thorne

Reviewed By: VVZ 3/21/19

Labeled by: AT 03/21/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

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

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com
tjlong@eprod.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name: Enterprise Lateral 2C-29

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 1.8 / 1.2 A 03/21/19

HEAL No. 1903979

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 Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4 (300.0)	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
3/20/19	1330	Soil	SC-1	(1) 40z Glass MeOH Kit	Non / MeOH	001	X	X					X			
3/20/19	1340		SC-2			002	X	X					X			
3/20/19	1320		SC-3			003	X	X					X			
3/20/19	1315		SC-4			004	X	X					X			
3/20/19	1325		SC-5			005	X	X					X			
3/20/19	1345		SC-6			006	X	X					X			
3/20/19	1350		SC-7			007	X	X					X			
3/20/19	1255		P-1			008	X	X					X			
3/20/19	1300		P-2			009	X	X					X			
			NFS HM													

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/20/19	1800	Heath M. Woods				
					03/21/19	0700

Remarks:
Direct Bill to Enterprise
Non-AFE: N41519
Supervisor: Dewayne Dixon

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.

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

March 27, 2019

Heather Woods

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

RE: Enterprise Lateral 2C-29 OrderNo.: 1903B82

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/26/2019 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1903B82**
Date Reported: **3/27/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-8
Project: Enterprise Lateral 2C-29
Collection Date: 3/25/2019 3:15:00 PM
Lab ID: 1903B82-001 **Matrix:** SOIL **Received Date:** 3/26/2019 8:11:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	29	9.7		mg/Kg	1	3/26/2019 1:42:00 PM	43877
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/26/2019 1:42:00 PM	43877
Surr: DNOP	96.0	70-130		%Rec	1	3/26/2019 1:42:00 PM	43877
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	3/26/2019 8:53:43 AM	43866
Surr: BFB	98.1	73.8-119		%Rec	5	3/26/2019 8:53:43 AM	43866
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.090		mg/Kg	5	3/26/2019 8:53:43 AM	43866
Toluene	ND	0.18		mg/Kg	5	3/26/2019 8:53:43 AM	43866
Ethylbenzene	ND	0.18		mg/Kg	5	3/26/2019 8:53:43 AM	43866
Xylenes, Total	ND	0.36		mg/Kg	5	3/26/2019 8:53:43 AM	43866
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	5	3/26/2019 8:53:43 AM	43866

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903B82**
Date Reported: **3/27/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-9
Project: Enterprise Lateral 2C-29
Collection Date: 3/25/2019 3:10:00 PM
Lab ID: 1903B82-002 **Matrix:** SOIL **Received Date:** 3/26/2019 8:11:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	40	9.4		mg/Kg	1	3/26/2019 11:15:18 AM	43877
Motor Oil Range Organics (MRO)	64	47		mg/Kg	1	3/26/2019 11:15:18 AM	43877
Surr: DNOP	92.4	70-130		%Rec	1	3/26/2019 11:15:18 AM	43877
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	3/26/2019 9:17:11 AM	43866
Surr: BFB	98.5	73.8-119		%Rec	5	3/26/2019 9:17:11 AM	43866
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.089		mg/Kg	5	3/26/2019 9:17:11 AM	43866
Toluene	ND	0.18		mg/Kg	5	3/26/2019 9:17:11 AM	43866
Ethylbenzene	ND	0.18		mg/Kg	5	3/26/2019 9:17:11 AM	43866
Xylenes, Total	ND	0.36		mg/Kg	5	3/26/2019 9:17:11 AM	43866
Surr: 4-Bromofluorobenzene	97.6	80-120		%Rec	5	3/26/2019 9:17:11 AM	43866

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903B82**

27-Mar-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-29

Sample ID: **MB-43877**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **43877**	RunNo: **58623**
Prep Date: **3/26/2019**	Analysis Date: **3/26/2019**	SeqNo: **1968723** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.9		10.00		78.6	70	130			

Sample ID: **LCS-43877**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **43877**	RunNo: **58623**
Prep Date: **3/26/2019**	Analysis Date: **3/26/2019**	SeqNo: **1968724** 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	86.1	63.9	124			
Surr: DNOP	3.8		5.000		75.1	70	130			

Sample ID: **1903B82-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-9**	Batch ID: **43877**	RunNo: **58633**
Prep Date: **3/26/2019**	Analysis Date: **3/26/2019**	SeqNo: **1969430** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	92	9.9	49.26	39.93	106	53.5	126			
Surr: DNOP	4.8		4.926		97.8	70	130			

Sample ID: **1903B82-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-9**	Batch ID: **43877**	RunNo: **58633**
Prep Date: **3/26/2019**	Analysis Date: **3/26/2019**	SeqNo: **1969431** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	86	9.8	49.07	39.93	94.5	53.5	126	6.40	21.7	
Surr: DNOP	4.7		4.907		96.4	70	130	0	0	

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903B82**

27-Mar-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-29

Sample ID: **MB-43866**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **43866**	RunNo: **58635**
Prep Date: **3/25/2019**	Analysis Date: **3/26/2019**	SeqNo: **1969302** 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	950		1000		94.5	73.8	119			

Sample ID: **LCS-43866**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **43866**	RunNo: **58635**
Prep Date: **3/25/2019**	Analysis Date: **3/26/2019**	SeqNo: **1969303** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	80.1	123			
Surr: BFB	1100		1000		110	73.8	119			

Sample ID: **MB-43840**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **43840**	RunNo: **58635**
Prep Date: **3/22/2019**	Analysis Date: **3/26/2019**	SeqNo: **1969308** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		93.1	73.8	119			

Sample ID: **LCS-43840**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **43840**	RunNo: **58635**
Prep Date: **3/22/2019**	Analysis Date: **3/26/2019**	SeqNo: **1969309** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		108	73.8	119			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903B82**

27-Mar-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C-29

Sample ID: **MB-43866** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **43866** RunNo: **58635**

Prep Date: **3/25/2019** Analysis Date: **3/26/2019** SeqNo: **1969327** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		98.6	80	120			

Sample ID: **LCS-43866** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **43866** RunNo: **58635**

Prep Date: **3/25/2019** Analysis Date: **3/26/2019** SeqNo: **1969328** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	99.3	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.1	80	120			

Sample ID: **MB-43840** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **43840** RunNo: **58635**

Prep Date: **3/22/2019** Analysis Date: **3/26/2019** SeqNo: **1969335** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.97		1.000		97.5	80	120			

Sample ID: **LCS-43840** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **43840** RunNo: **58635**

Prep Date: **3/22/2019** Analysis Date: **3/26/2019** SeqNo: **1969336** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		99.7	80	120			

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

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

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1903B82** RcptNo: **1**

Received By: **Yazmine Garduno** **3/26/2019 8:11:00 AM** Yazmine Garduno

Completed By: **Leah Baca** **3/26/2019 8:33:26 AM** Leah Baca

Reviewed By: ENM 3/26/19

Labeled by YG 3/24/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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: YG 3/24/19

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com
tjlong@eptod.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name: Enterprise Lateral 2C-29

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.4°C

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 Name	Container Type and #	Preservative Type	HEAL No. 1903B82	BTEX / ~~MTBE~~ / ~~TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
3/25/19	1515	Soil	SC-8	(1) 4oz Glass MeOH Kit	Non/MeOH	-001	X	X								
3/25/19	1510	Soil	SC-9	1	1	-002	X	X								

NPS HC

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/25/19	1943	Heath M. Woods	Yazmine Ybarra	Courier	3/26/19	8:15
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:
Direct Bill to Enterprise
Non-AFE: N41519
Supervisor: Dewayne Dixon

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.

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

April 01, 2019

Heather Woods

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

RE: Enterprise Lateral 2C 29 OrderNo.: 1903D33

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 9 sample(s) on 3/28/2019 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-3 North Wall
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:30:00 PM
Lab ID: 1903D33-001 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	12	9.9		mg/Kg	1	3/28/2019 10:07:43 AM	43929
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/28/2019 10:07:43 AM	43929
Surr: DNOP	99.4	70-130		%Rec	1	3/28/2019 10:07:43 AM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	3/28/2019 8:28:24 AM	43899
Surr: BFB	104	73.8-119		%Rec	1	3/28/2019 8:28:24 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	3/28/2019 8:28:24 AM	43899
Toluene	ND	0.037		mg/Kg	1	3/28/2019 8:28:24 AM	43899
Ethylbenzene	ND	0.037		mg/Kg	1	3/28/2019 8:28:24 AM	43899
Xylenes, Total	ND	0.073		mg/Kg	1	3/28/2019 8:28:24 AM	43899
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	3/28/2019 8:28:24 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-3 Base
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:34:00 PM
Lab ID: 1903D33-002 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/28/2019 10:32:06 AM	43929
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/28/2019 10:32:06 AM	43929
Surr: DNOP	101	70-130		%Rec	1	3/28/2019 10:32:06 AM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	3/28/2019 8:51:48 AM	43899
Surr: BFB	105	73.8-119		%Rec	1	3/28/2019 8:51:48 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	3/28/2019 8:51:48 AM	43899
Toluene	ND	0.033		mg/Kg	1	3/28/2019 8:51:48 AM	43899
Ethylbenzene	ND	0.033		mg/Kg	1	3/28/2019 8:51:48 AM	43899
Xylenes, Total	0.13	0.066		mg/Kg	1	3/28/2019 8:51:48 AM	43899
Surr: 4-Bromofluorobenzene	98.4	80-120		%Rec	1	3/28/2019 8:51:48 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-3 South Wall
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:37:00 PM
Lab ID: 1903D33-003 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/28/2019 10:56:42 AM	43929
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/28/2019 10:56:42 AM	43929
Surr: DNOP	95.6	70-130		%Rec	1	3/28/2019 10:56:42 AM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	3/28/2019 9:15:09 AM	43899
Surr: BFB	98.7	73.8-119		%Rec	1	3/28/2019 9:15:09 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	3/28/2019 9:15:09 AM	43899
Toluene	ND	0.036		mg/Kg	1	3/28/2019 9:15:09 AM	43899
Ethylbenzene	ND	0.036		mg/Kg	1	3/28/2019 9:15:09 AM	43899
Xylenes, Total	ND	0.071		mg/Kg	1	3/28/2019 9:15:09 AM	43899
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	3/28/2019 9:15:09 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-4 North Wall
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:40:00 PM
Lab ID: 1903D33-004 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/28/2019 11:21:14 AM	43929
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/28/2019 11:21:14 AM	43929
Surr: DNOP	94.1	70-130		%Rec	1	3/28/2019 11:21:14 AM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	3/28/2019 9:38:39 AM	43899
Surr: BFB	98.6	73.8-119		%Rec	1	3/28/2019 9:38:39 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	3/28/2019 9:38:39 AM	43899
Toluene	ND	0.037		mg/Kg	1	3/28/2019 9:38:39 AM	43899
Ethylbenzene	ND	0.037		mg/Kg	1	3/28/2019 9:38:39 AM	43899
Xylenes, Total	ND	0.073		mg/Kg	1	3/28/2019 9:38:39 AM	43899
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	3/28/2019 9:38:39 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-4 Base
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:43:00 PM
Lab ID: 1903D33-005 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/28/2019 11:45:46 AM	43929
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/28/2019 11:45:46 AM	43929
Surr: DNOP	96.7	70-130		%Rec	1	3/28/2019 11:45:46 AM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	3/28/2019 10:02:17 AM	43899
Surr: BFB	97.5	73.8-119		%Rec	1	3/28/2019 10:02:17 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	3/28/2019 10:02:17 AM	43899
Toluene	ND	0.039		mg/Kg	1	3/28/2019 10:02:17 AM	43899
Ethylbenzene	ND	0.039		mg/Kg	1	3/28/2019 10:02:17 AM	43899
Xylenes, Total	ND	0.077		mg/Kg	1	3/28/2019 10:02:17 AM	43899
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	3/28/2019 10:02:17 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-4 South Wall
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:47:00 PM
Lab ID: 1903D33-006 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/28/2019 12:10:02 PM	43929
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/28/2019 12:10:02 PM	43929
Surr: DNOP	96.2	70-130		%Rec	1	3/28/2019 12:10:02 PM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	3/28/2019 10:25:47 AM	43899
Surr: BFB	94.6	73.8-119		%Rec	1	3/28/2019 10:25:47 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	3/28/2019 10:25:47 AM	43899
Toluene	ND	0.038		mg/Kg	1	3/28/2019 10:25:47 AM	43899
Ethylbenzene	ND	0.038		mg/Kg	1	3/28/2019 10:25:47 AM	43899
Xylenes, Total	ND	0.076		mg/Kg	1	3/28/2019 10:25:47 AM	43899
Surr: 4-Bromofluorobenzene	98.3	80-120		%Rec	1	3/28/2019 10:25:47 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-5 North Wall
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:50:00 PM
Lab ID: 1903D33-007 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/28/2019 12:34:28 PM	43929
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/28/2019 12:34:28 PM	43929
Surr: DNOP	99.1	70-130		%Rec	1	3/28/2019 12:34:28 PM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	3/28/2019 10:49:17 AM	43899
Surr: BFB	93.6	73.8-119		%Rec	1	3/28/2019 10:49:17 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	3/28/2019 10:49:17 AM	43899
Toluene	ND	0.038		mg/Kg	1	3/28/2019 10:49:17 AM	43899
Ethylbenzene	ND	0.038		mg/Kg	1	3/28/2019 10:49:17 AM	43899
Xylenes, Total	ND	0.076		mg/Kg	1	3/28/2019 10:49:17 AM	43899
Surr: 4-Bromofluorobenzene	96.3	80-120		%Rec	1	3/28/2019 10:49:17 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-5 Base
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 1:54:00 PM
Lab ID: 1903D33-008 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/28/2019 12:58:50 PM	43929
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/28/2019 12:58:50 PM	43929
Surr: DNOP	96.2	70-130		%Rec	1	3/28/2019 12:58:50 PM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	3/28/2019 11:12:54 AM	43899
Surr: BFB	97.6	73.8-119		%Rec	1	3/28/2019 11:12:54 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	3/28/2019 11:12:54 AM	43899
Toluene	ND	0.041		mg/Kg	1	3/28/2019 11:12:54 AM	43899
Ethylbenzene	ND	0.041		mg/Kg	1	3/28/2019 11:12:54 AM	43899
Xylenes, Total	ND	0.083		mg/Kg	1	3/28/2019 11:12:54 AM	43899
Surr: 4-Bromofluorobenzene	97.3	80-120		%Rec	1	3/28/2019 11:12:54 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Analytical Report
Lab Order **1903D33**
Date Reported: **4/1/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: P-5 South Wall
Project: Enterprise Lateral 2C 29
Collection Date: 3/27/2019 2:00:00 PM
Lab ID: 1903D33-009 **Matrix:** SOIL **Received Date:** 3/28/2019 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/28/2019 1:23:21 PM	43929
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/28/2019 1:23:21 PM	43929
Surr: DNOP	97.8	70-130		%Rec	1	3/28/2019 1:23:21 PM	43929
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	3/28/2019 11:36:37 AM	43899
Surr: BFB	95.3	73.8-119		%Rec	1	3/28/2019 11:36:37 AM	43899
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	3/28/2019 11:36:37 AM	43899
Toluene	ND	0.038		mg/Kg	1	3/28/2019 11:36:37 AM	43899
Ethylbenzene	ND	0.038		mg/Kg	1	3/28/2019 11:36:37 AM	43899
Xylenes, Total	ND	0.075		mg/Kg	1	3/28/2019 11:36:37 AM	43899
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	3/28/2019 11:36:37 AM	43899

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D33**

01-Apr-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C 29

Sample ID: **LCS-43929** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **43929** RunNo: **58701**

Prep Date: **3/28/2019** Analysis Date: **3/28/2019** SeqNo: **1971593** 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	83.4	63.9	124			
Surr: DNOP	4.3		5.000		85.7	70	130			

Sample ID: **MB-43929** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **43929** RunNo: **58701**

Prep Date: **3/28/2019** Analysis Date: **3/28/2019** SeqNo: **1971594** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.3	70	130			

Sample ID: **1903D33-009AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **P-5 South Wall** Batch ID: **43929** RunNo: **58701**

Prep Date: **3/28/2019** Analysis Date: **3/28/2019** SeqNo: **1972045** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.7	48.26	0	93.0	53.5	126			
Surr: DNOP	4.7		4.826		97.7	70	130			

Sample ID: **1903D33-009AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **P-5 South Wall** Batch ID: **43929** RunNo: **58701**

Prep Date: **3/28/2019** Analysis Date: **3/28/2019** SeqNo: **1972603** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.9	49.26	0	91.3	53.5	126	0.247	21.7	
Surr: DNOP	4.8		4.926		97.4	70	130	0	0	

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D33**

01-Apr-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C 29

Sample ID: **MB-43899**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **43899**	RunNo: **58709**
Prep Date: **3/27/2019**	Analysis Date: **3/28/2019**	SeqNo: **1972511** 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	1000		1000		101	73.8	119			

Sample ID: **LCS-43899**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **43899**	RunNo: **58709**
Prep Date: **3/27/2019**	Analysis Date: **3/28/2019**	SeqNo: **1972512** 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	98.2	80.1	123			
Surr: BFB	1100		1000		110	73.8	119			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D33**

01-Apr-19

Client: Rule Engineering LLC

Project: Enterprise Lateral 2C 29

Sample ID: **MB-43899**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **43899**	RunNo: **58709**
Prep Date: **3/27/2019**	Analysis Date: **3/28/2019**	SeqNo: **1972560** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID: **LCS-43899**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **43899**	RunNo: **58709**
Prep Date: **3/27/2019**	Analysis Date: **3/28/2019**	SeqNo: **1972561** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.0	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.1	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1903D33 RcptNo: 1

Received By: Anne Thorne 3/28/2019 7:00:00 AM Anne Thorne

Completed By: Anne Thorne 3/28/2019 7:25:07 AM Anne Thorne

Reviewed By: IO 3/28/19

Labeled by: AT 03/28/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

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

15. 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: _____

16. Additional remarks:

17. Cooler Information

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

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package: tjlong@eprod.com
☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name: Enterprise Lateral 2C-29

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 1.0 °C

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 Name	Container Type and #	Preservative Type	HEAL No. 1903D33	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
3/27/19	1330	Soil	P-3 North Wall	1) 4oz Glass	Non	201	X	X								
3/27/19	1334	Soil	P-3 Base			202	X	X								
3/27/19	1337	Soil	P-3 South Wall			203	X	X								
3/27/19	1340	Soil	P-4 North Wall			204	X	X								
3/27/19	1343	Soil	P-4 Base			205	X	X								
3/27/19	1347	Soil	P-4 South Wall			206	X	X								
3/27/19	1350	Soil	P-5 North Wall			207	X	X								
3/29/19	1354	Soil	P-5 Base			208	X	X								
3/27/19	1400	Soil	P-5 South Wall			209	X	X								
			~~NTS HW~~													

Date	Time	Relinquished by	Received by	Via	Date	Time
3/27/19	1738	Heather M. Woods				
3/27/19	1812				03/28/19	0700

Remarks:
Direct Bill to Enterprise
Non-AFE: N41519
Supervisor: Dewayne Dixon

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.