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)*: **NCS1915551167**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Updated GPS Coordinates

Latitude **36.784705** Longitude **-107.914212** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Lateral H-35 Pipeline**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **5/16/2019**	Serial Number *(if applicable)*: **N/A**

Unit Letter	Section	Township	Range	County
E	**29**	**30N**	**10W**	**San Juan**

Surface Owner: ☐ State ☐ Federal ☒ Tribal ☐ Private (*Name*: **BLM**)

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): **15-20 BBLs**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **22.5 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release: On May 16, 2019, Enterprise responded to a possible release of natural gas on the Lateral H-35 pipeline. Enterprise dispatched a technician and confirmed the release. The pipeline was isolated, depressurized, locked out and tagged out. No fluids were observed on the ground surface. Enterprise begin the repairs and remediation on May 24, 2019, at which time the release was determined reportable per NMOCD regulation, due to the volume of impacted subsurface soil. Remediation was completed on July 11, 2019. The final excavation measured approximately 50 feet long by 20 feet wide ranging from 18 to 45 feet deep. Approximately 1,908 cubic yards of hydrocarbon impacted soil was 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.

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, Environmental

Signature: Jon E. Fields Date: 8/25/2020

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

OCD Only

Received by: _____ Date: _____

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: Nelson Velez Date: 05/19/2022

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

Lateral H-35 Pipeline
Release Closure Report

Unit Letter E, Section 29, Township 30 North, Range 10 West
San Juan County, New Mexico

July 17, 2020

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 H-35 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

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

July 17, 2020

Table of Contents

Tables

Figures

Appendices

1.0 Introduction

This closure report summarizes the remedial activities undertaken at the Lateral H-35 Pipeline release site to remediate potential hydrocarbon impact below applicable closure criteria as outlined in 19.15.29 of the New Mexico Authority Code (NMAC).

1.1 Release Summary

Operator	Enterprise Field Services, LLC (Enterprise)		
Site Name	Lateral H-35 Pipeline Release		
Site Location Description	Unit Letter E, Section 29, Township 30 North, Range 10 West (N36.784705, W107.914212)		
Land Jurisdiction	United States Department of the Interior Bureau of Land Management (BLM)		
Discovery Date	May 16, 2019		
Release Source	Corrosion hole in pipeline		
Substance(s) Released	Pipeline liquids and natural gas		
Volume of Soil Transported for Disposal/Remediation	Approximately 1,908 cubic yards	**Remedial Excavation Dimensions**	Approximately 50 feet by 20 feet and 18 feet, to 45 feet deep
Disposal Facility	Envirotech Landfarm (Permit NM-01-0011)		

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 Closure Criteria Determination

The remediation standards for the release location are determined per 19.15.29 NMAC and are selected by depth to groundwater with a concentration of less than 10,000 milligrams per kilogram (mg/kg) total dissolved solids (TDS) and several additional factors outlined in Paragraph (4) of Subsection (C) 19.15.29.12 NMAC. A summary of the determination and supporting documents are included in Appendix A.

Closure criteria for the soils impacted at the release location are determined by the *"less than or equal to 50 feet"* category of Table 1, 19.15.29.12 NMAC. These remedial standards are as follows:

- 600 milligrams per kilogram (mg/kg) chloride per United States Environmental Protection Agency (USEPA) Methods 300.0 or SM 4500-Cl B;
- 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO), diesel range organics (DRO), and mineral range organics (MRO) per USEPA Method 8015M;

Rule

- 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX) per USEPA Method 8021B or 8260B; and 10 mg/kg benzene per USEPA Methods 8021B or 8260B.

3.0 Field Activities

On June 7, 2019, Enterprise initiated remediation activities at the location. O.F.T. Construction, Inc. provided heavy equipment operation and repair support. Rule Engineering, LLC (Rule) personnel provided excavation guidance and collected confirmation samples from the resultant excavation. Due to the size of the excavation, the excavation was completed in stages. The shape of the final remedial excavation was irregular, measuring approximately 50 feet by 20 feet by 18 feet to 45 feet in depth. Approximately 1,908 cubic yards of soil were transported to the Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation. The excavation was backfilled with clean, imported material.

A depiction of the remedial and access areas of the excavation is included as Figure 2. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix B. A photograph log is included in Appendix C. A copy of regulatory correspondence is included in Appendix D.

4.0 Confirmation Soil Sampling

Rule collected confirmation excavation soil samples (SC-1 through SC-24) from the sidewalls and bases/slopes of the excavation during several sampling events throughout the completion of the excavation as access would allow. Each confirmation soil sample is a representative composite comprised of five equivalent portions of soil collected from the sampled area. Figure 3 shows each composite sample location.

Samples were field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photoionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. 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 and TPH (GRO/DRO/MRO) per USEPA Method 8015D and chlorides per USEPA Method 300.0.

Laboratory analytical results are summarized in Table 1. Analytical laboratory reports are included in Appendix E.

5.0 Laboratory Analytical Results

The laboratory analytical results were compared to the remediation standards for the site. A summary of constituent detections above the laboratory reporting limits is provided below:

- A benzene detection was reported in SC-11 at 0.020 mg/kg, which is below the remediation standard of 10 mg/kg.
- Total BTEX detections ranged from 0.12 mg/kg to 7.8 mg/kg, which are below the remediation standard of 50 mg/kg.
- Total TPH detections were reported in three confirmation samples. Total TPH concentrations for SC-1 were reported at 70 mg/kg and for SC-11 at 5.7 mg/kg, which are below the remediation standard of 100 mg/kg. Total TPH concentrations for SC-21 exceeded the remediation standard with a concentration of 220 mg/kg. This sample area was removed from the excavation and transported to the landfarm for disposal/remediation.
- Chloride detections ranged from 64 mg/kg to 250 mg/kg, which are below the remediation standard of 600 mg/kg.

The concentrations of the remaining constituents were reported below the laboratory reporting limits, which are below each respective remediation standard. Laboratory analytical results are summarized in Table 1. Analytical laboratory reports are included in Appendix E.

6.0 Reclamation and Revegetation

The excavation was backfilled with clean, imported material. The area was contoured as near as possible to original grade and will be re-seeded with a BLM approved seed mixture.

7.0 Recommendation

Hydrocarbon impacted soils associated with the Lateral H-35 pipeline release have been excavated and transported to an approved landfarm for disposal/remediation. Laboratory analytical results for the confirmation samples collected from the remedial excavation report benzene, total BTEX, total TPH, and chloride concentrations below the remediation standards 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

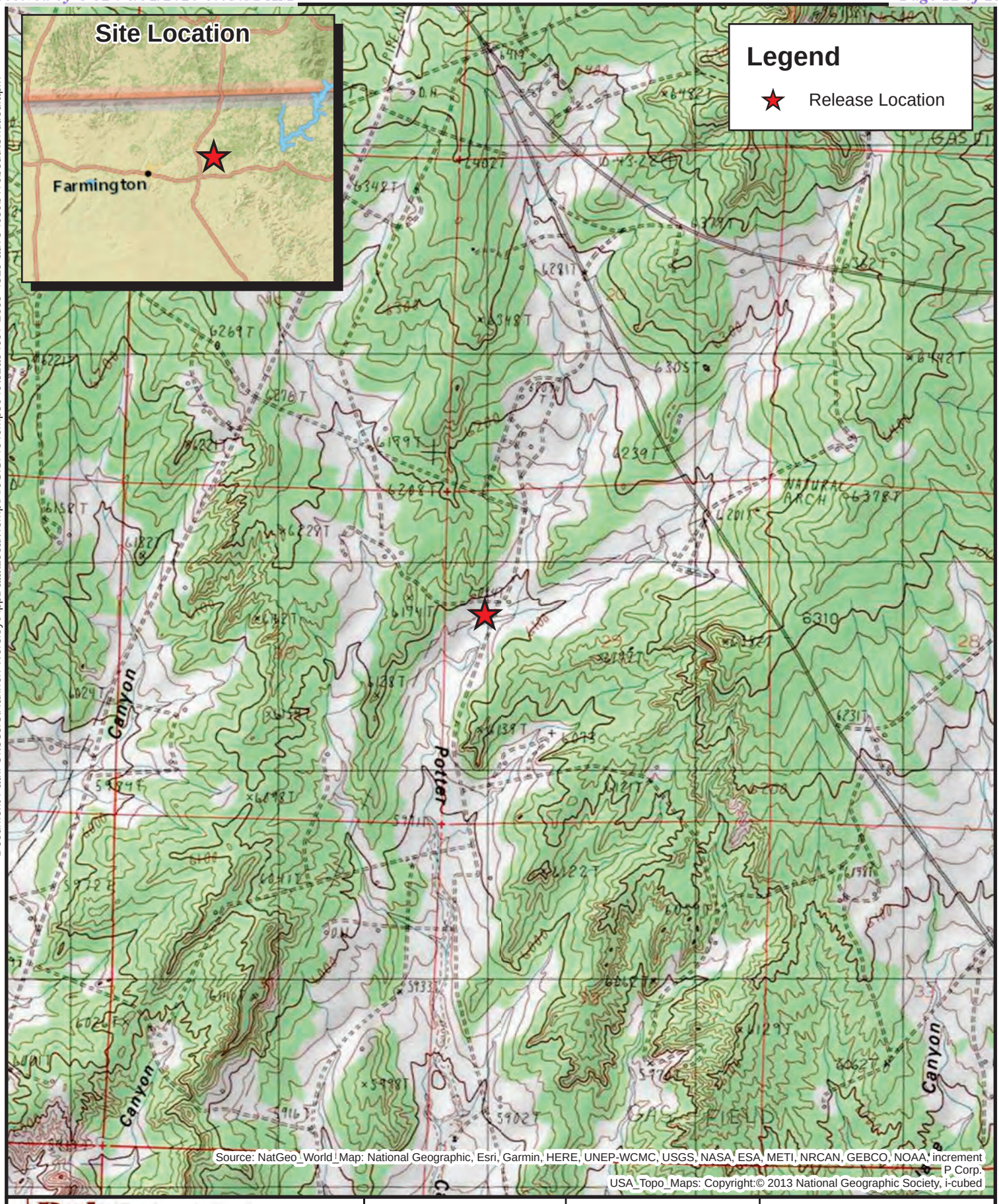
Table 1. Summary of Laboratory Analytical Results
Enterprise Field Services
Lateral H-35 Pipeline Release
San Juan County, New Mexico

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)	Total TPH (mg/kg)	Chloride (mg/kg)
Remediation Standard*				**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**NE**	**100**	**600**
Removed by Excavation													
SC-21	7/3/2019	4 - 20	Wall	<0.023	<0.045	<0.045	<0.090	ND	<4.5	110	110	**220**	210
Excavation Confirmation Samples													
SC-1	6/10/2019	35	Base	<0.10	0.60	0.40	6.8	7.8	51	19	<47	70	<60
SC-2	6/10/2019	16 - 35	Wall - Lower	<0.11	0.23	<0.23	0.50	0.50	<23	<9.6	<48	ND	<60
SC-3	6/11/2019	0 - 16	Wall - Lower	<0.11	<0.21	<0.21	<0.42	ND	<21	<9.3	<47	ND	82
SC-4	6/13/2019	15 - 25	Wall - Lower	<0.019	<0.038	<0.038	<0.077	ND	<3.8	<9.5	<47	ND	<60
SC-5	6/13/2019	25 - 35	Wall - Upper	<0.21	0.15	0.045	0.63	0.83	<4.2	<9.7	<49	ND	<60
SC-6	6/14/2019	25 - 35	Wall - Lower	<0.11	<0.22	<0.22	0.81	0.81	<22	<10	<50	ND	<60
SC-7	6/14/2019	15 - 25	Wall - Lower	<0.10	<0.20	<0.20	<0.40	ND	<20	<9.4	<47	ND	64
SC-8	6/24/2019	5 - 25	Wall - Upper	<0.017	0.036	<0.035	0.17	0.21	<3.5	<10	<50	ND	67
SC-9	6/24/2019	25 - 35	Wall - Lower	<0.022	0.049	<0.044	0.36	0.41	<4.4	<9.9	<50	ND	<60
SC-10	6/24/2019	35 - 40	Base	<0.023	<0.046	<0.046	0.12	0.12	<4.6	<9.2	<46	ND	<60
SC-11	6/24/2019	5 - 25	Wall - Upper	0.020	0.39	0.099	1.1	1.6	5.7	<9.2	<46	5.7	<60
SC-12	6/26/2019	25 - 35	Wall - Lower	<0.017	0.075	<0.034	0.38	0.46	<3.4	<9.3	<47	ND	<60
SC-13	7/1/2019	20 - 35	Wall	<0.092	<0.18	<0.18	0.51	0.51	<18	<9.0	<45	ND	<60
SC-14	7/1/2019	20 - 35	Wall	<0.096	<0.19	<0.19	<0.38	ND	<19	<9.3	<47	ND	<60
SC-15	7/1/2019	20 - 35	Wall	<0.096	<0.19	<0.19	<0.39	ND	<19	<9.8	<49	ND	<60
SC-16	7/1/2019	35	Base	<0.10	<0.20	<0.20	<0.40	ND	<20	<9.9	<49	ND	<60
SC-17	7/3/2019	0 -10	Wall - Upper	<0.022	<0.044	<0.044	0.17	0.17	<4.4	<9.9	<50	ND	180
SC-18	7/3/2019	10 - 20	Wall - Lower	<0.021	<0.042	<0.042	<0.084	ND	<4.2	<9.0	<45	ND	<60
SC-19	7/3/2019	18 - 20	Base	<0.022	0.10	<0.044	0.35	0.45	<4.4	<10	<50	ND	210
SC-20	7/3/2019	18 - 20	Base/Slope	<0.024	0.055	<0.047	0.32	0.38	<4.7	<9.8	<49	ND	140
SC-22	7/11/2019	4 - 20	Wall	<0.021	<0.042	<0.042	<0.083	ND	<4.2	<9.9	<49	ND	150
SC-23	7/11/2019	4 - 20	Wall	<0.017	<0.034	<0.034	<0.068	ND	<3.4	<9.9	<49	ND	110
SC-24	7/11/2019	18 - 20	Base	<0.020	<0.041	<0.041	0.12	0.12	<4.1	<9.6	<48	ND	250

Notes:
ft bgs - feet below grade surface
mg/kg - milligrams per kilogram
NE - not established
ND - not detected above laboratory reporting limits
BTEX - total benzene, toluene, ethylbenzene, and xylenes
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
1.0 Concentration exceeds the remediation standard
*Per Table 1 of 19.15.29.12 NMAC, based on category *"less than or equal to 50 feet" depth* to groundwater

Rule Engineering, LLC
Solutions to Regulations for Industry

Figures



Rule Engineering, LLC
Solutions to Regulations for Industry

0 1,000 2,000 4,000 Feet

Aztec Quadrangle
1:24,000

Enterprise Products

E-S29-T30N-R10W
N36.784705, W107.914212
San Juan County, NM

Figure 1
Topographic Site Map
Lateral H-35

Rule Engineering, LLC
Solutions to Regulations for Industry

0 10 20 40 Feet
1:165

N

Enterprise Products

E-S29-T30N-R10W
N36.784705, W107.914212
San Juan County, NM

Figure 2
Aerial Site Map
Lateral H-35

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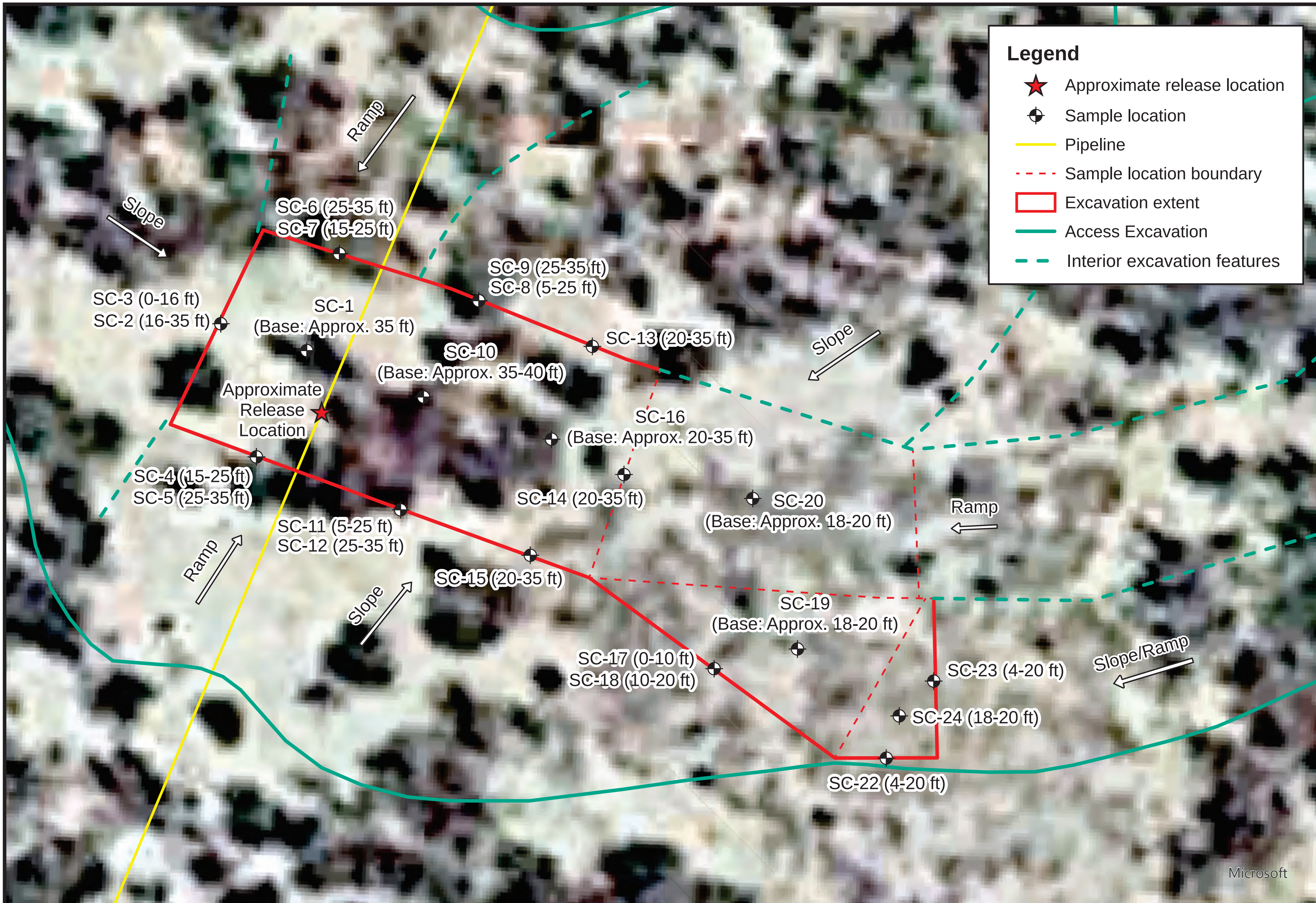
Date: 7/16/2020



Rule Engineering, LLC
Solutions to Regulations for Industry

0 3 6 12 18 24 Feet
1:100
N

Enterprise Products

E-S29-T30N-R10W
N36.784705, W107.914212
Farmington, NM

Figure 3
Sample Location Map
Lateral H-35

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Date: 7/16/2020

Appendix A

Closure Criteria Determination and Documentation

Closure Criteria Determination
Lateral H-35 Pipeline Release

Per 19.15.29 NMAC, the release site characteristics are as follows:

- Depth to groundwater at the site is anticipated to be **less than 50 feet** below ground surface based on the area's geology and geomorphology.
    - A search of the New Mexico Office of the State Engineer (NMOSE) Water Rights Reporting System reported five points of diversion (POD) within Sections 19, 20, 21, 28, 29, 30, 31, 32 and 33 of Township 30 North and Range 10 West. Only two of the five records provided depths to groundwater which are 45 feet and 190 feet below ground surface.
    - A search of the New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) online imaging database provided 12 cathodic well records for those same Sections. Depth to groundwater reported in these records ranges from 50 to 180 feet below ground surface.

The location **is** within:

- 300 feet of any continuously flowing watercourse or any other significant water course. *The ephemeral wash of Potter Canyon is located approximately 135 feet south of the release site.*
- 300 feet of a wetland. *The ephemeral wash of Potter Canyon is listed as a riverine wetland on the United States Fish & Wildlife Service's National Wetlands Inventory Wetlands Mapper.*

The location is **not** within:

- ½ mile of known water sources, including private and domestic water sources.
- 200 feet of any lakebed, sinkhole or playa lake.
- 300 feet of an occupied permanent residence, school, hospital, institution or church.
- 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
- incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
- 1,000 feet of any fresh water well or spring.
- the area overlying a subsurface mine.
- an unstable area.
- 100-year floodplain.

Lateral H-35 1-Mile Buffer NMOSE Well Map

7/15/2020, 3:30:47 PM

1:36,112

0 0.25 0.5 1 mi

0 0.38 0.75 1.5 km

OSE District Boundary

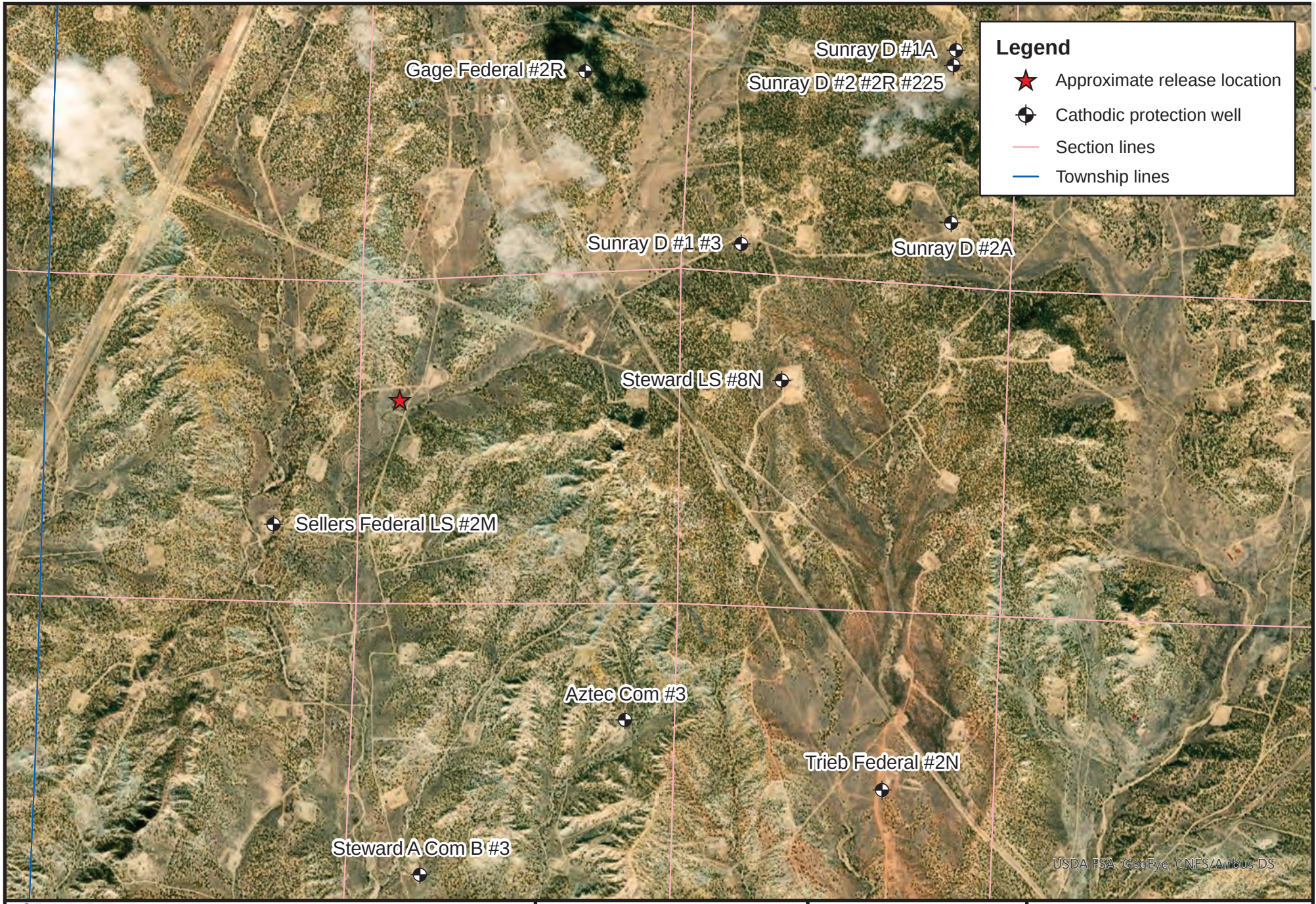
GIS WATERS PODs

- Active
- Pending

Conveyances

- Acequia
- Acequia Tunnel
- Canal
- Channel
- Closed Drain
- Community Ditch
- Connector
- Culvert
- Ditch
- Diversion Weir
- Drain
- Feeder
- Interior Drain

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, OSE GIS



Rule Engineering, LLC
Solutions to Regulations for Industry

0 1,500 3,000 6,000 Feet

1:24,500

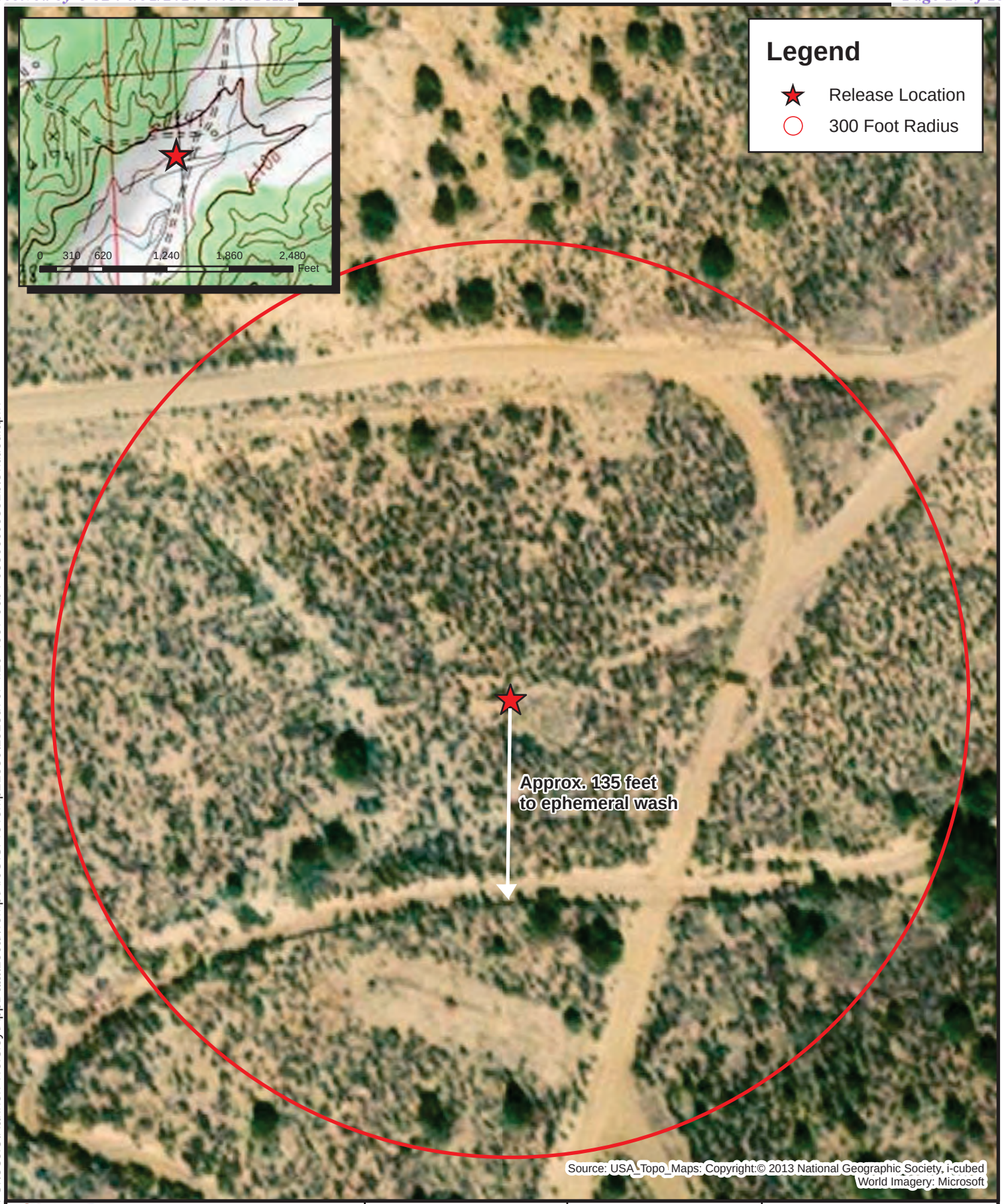
N

Enterprise Products

E-S29-T30N-R10W
N36.784705, W107.914212
San Juan County, NM

Cathodic Protection Well Location Map
Lateral H-35

Date: 7/16/2020



Rule Engineering, LLC
Solutions to Regulations for Industry

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Feet
1:1,000

Enterprise Products

E-S29-T30N-R10W
N36.784705, W107.914212
San Juan County, NM

Watercourse and Occupied Structure Map
Lateral H-35

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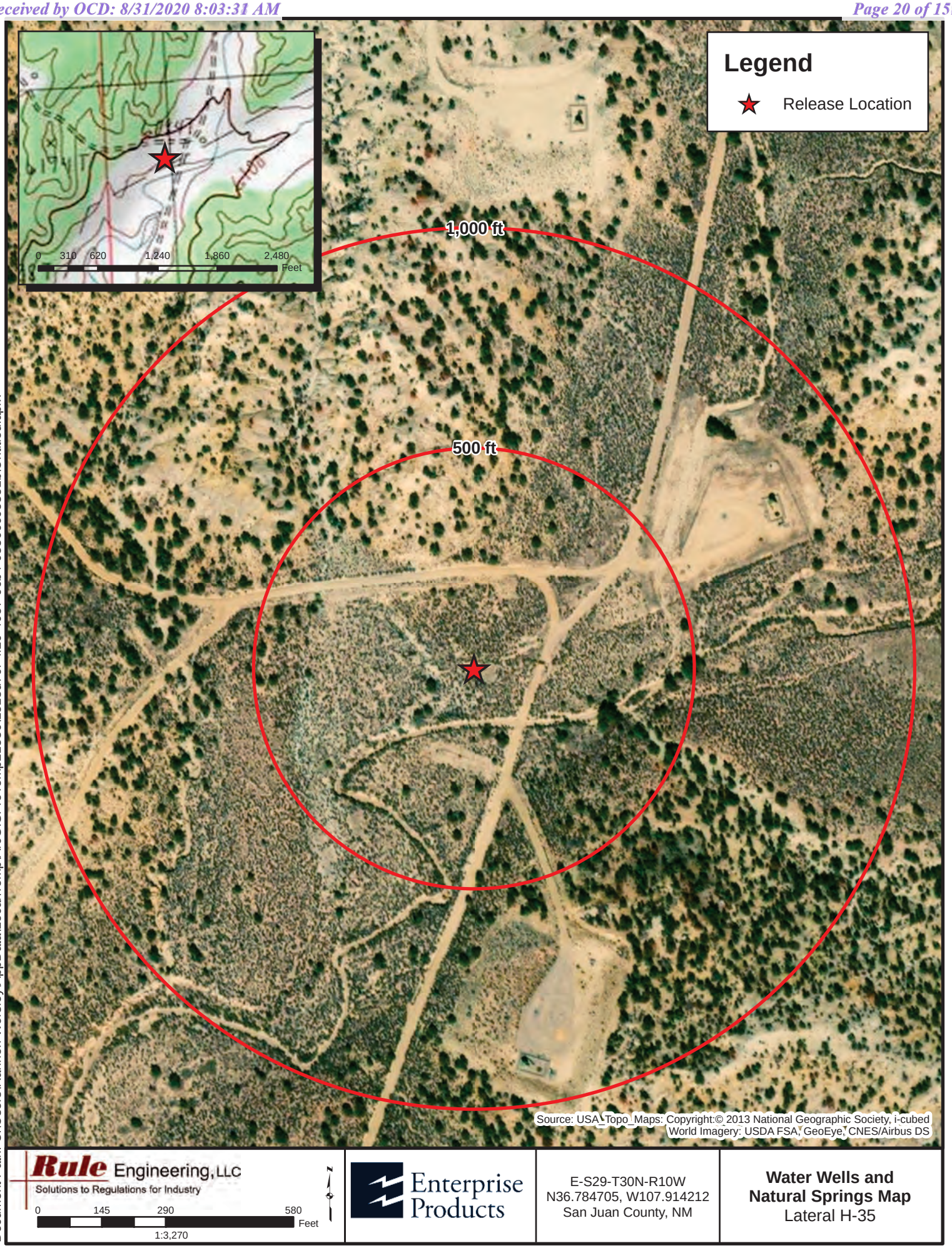
7/16/20



Rule Engineering, LLC
Solutions to Regulations for Industry

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Feet
1:3,270

Enterprise Products

E-S29-T30N-R10W
N36.784705, W107.914212
San Juan County, NM

Water Wells and Natural Springs Map
Lateral H-35

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7/16/20

U.S. Fish and Wildlife Service
National Wetlands Inventory

Lateral H-35 Wetland Location Map

July 16, 2020

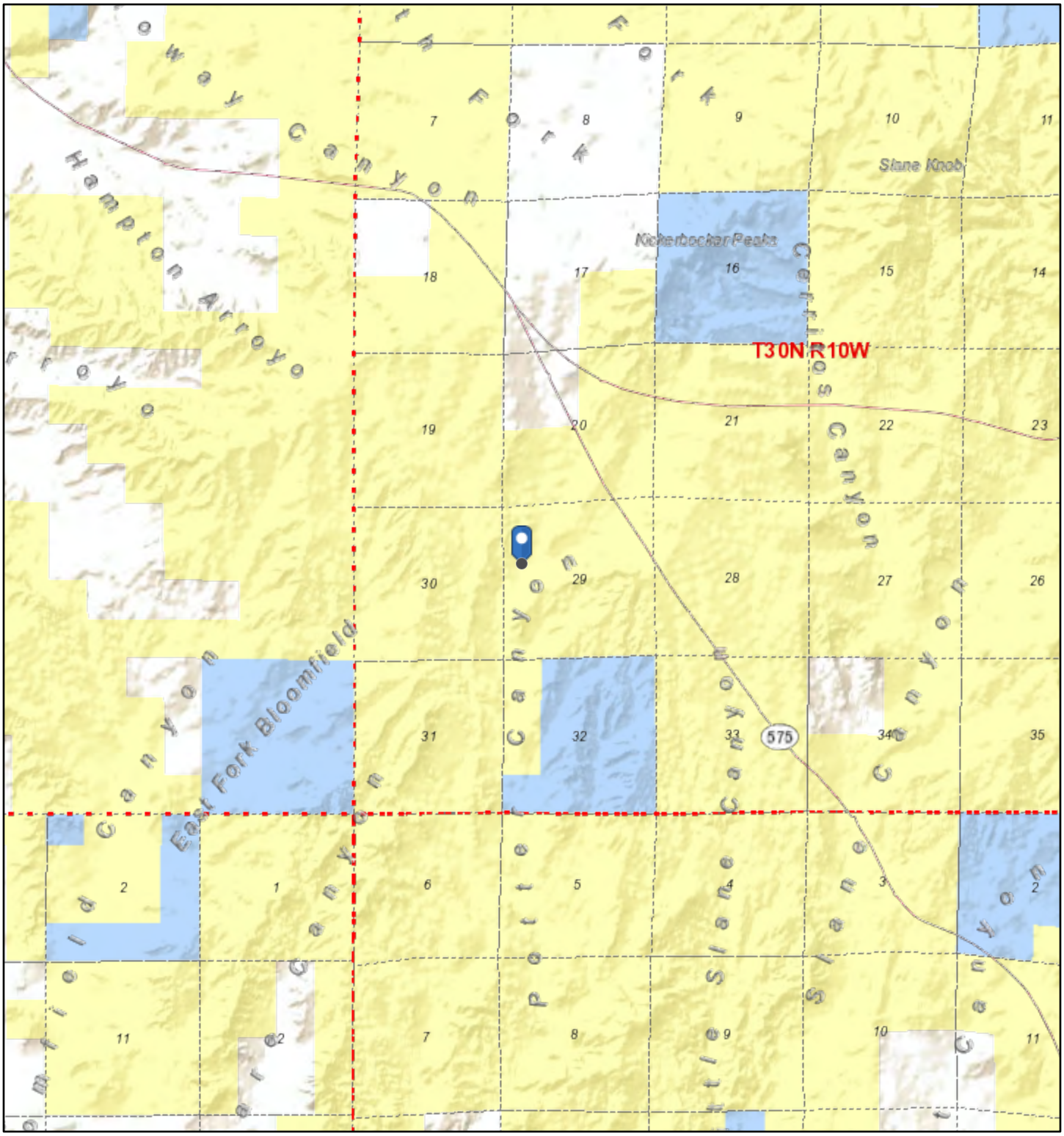
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Lateral H-35 Mines, Mills, and Quarries Map



7/16/2020, 12:11:44 PM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

EMNRD MMD GIS Coordinator

New Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

National Flood Hazard Layer FIRMette

FEMA

107°55'10" W 36°47'19" N

107°54'32" W 36°46'51" N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/16/2020 at 2:09 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

DATA SHEET FOR DEEP BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(SUBMIT 2 COPIES TO OCD AZTEC OFFICE)

3-30-045-09021

PPCO DESIGNATION: FM-494
OPERATOR: PHILLIPS PETROLEUM COMPANY
FARMINGTON, N.M. 87401
(505) 599-3400
LOCATION: H 32 30 10
LEASE NUMBER: 650121
NAME OF WELL/S OR PIPELINE SERVED: (1) AZTEC COM #3 PC
(2) N/A

ELEVATION:NA
COMPLETION DATE: 08/22/86
TOTAL DEPTH: 500 FT.
LAND: STATE

CASING INFO.: SIZE: NA IN. TYPE: NA
DEPTH: NA FT. CEMENT USED: NA

IF CEMENT OR BENTONITE PLUGS HAVE BEEN PLACED, SHOW DEPTHS & AMOUNTS:
PLUG DEPTH: NONE
PLUG AMOUNT: NONE

WATER INFORMATION:
WATER DEPTH (FT): (1) 180 (2) -0-
WATER INFORMATION: NA

DEPTHS GAS ENCOUNTERED (FT): NA

TYPE AND AMOUNT OF COKE BREEZE USED:
COKE TYPE: METALLURGICAL COKE BREEZE
COKE AMOUNT: 3067 LBS.

DEPTHS ANODES PLACED (FT):
380,390,400,410,420,430,440,450,460,470

DEPTH VENT PIPE PLACED (FT): 500

VENT PIPE PERFORATIONS (FT): TOP 370 BOTTOM 500

REMARKS: -0-

IF ANY OF THE ABOVE DATA IS UNAVAILABLE, PLEASE INDICATE SO. COPIES OF ALL LOGS, INCLUDING DRILLERS LOG, WATER ANALYSIS & WELL BORE SCHEMATICS SHOULD BE SUBMITTED WHEN AVAILABLE. UNPLUGGED ABANDONED WELLS ARE TO BE INCLUDED.

* - LAND TYPE MAY BE SHOWN: F-FEDERAL; I-INDIAN; S-STATE; P-FEE
IF FEDERAL OR INDIAN, ADD LEASE NUMBER.

NA-INFORMATION NOT AVAILABLE

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CC: CP FILE--FARMINGTON
HOUSTON

REPRODUCTION OF "OCD" FORM

OCD CATHODIC PROTECTION DEEPWELL GROUNDBED REPORT
DATA SHEET: NORTHWESTERN NEW MEXICO

OPERATOR: COP
FARMINGTON, NM 87401
PHONE: 599-3400

SUBMIT 2 COPIES TO O.C.D. AZTEC OFFICE

LOCATION INFORMATION

API NUMBER: 3004527501

WELL NAME OR PIPLINE SERVED: GAGE FEDERAL 2R | LEGAL LOCATION: 20 30N 10W | INSTALLATION DATE: 7/30/2013

PPCO. RECTIFIER NO.: 10632W | ADDITIONAL WELLS: #3 & 2R

TYPE OF LEASE: | LEASE NUMBER: NONE PROVIDED

GROUND BED INFORMATION

TOTAL DEPTH: 300' | CASING DIAMETER: 8" | TYPE OF CASING: PVC | CASING DEPTH: 20' | CASING CEMENTED ■

TOP ANODE DEPTH: 157' | BOTTOM ANODE DEPTH: 265'

ANODE DEPTHS: 157, 169, 181, 193, 205, 217, 229, 241, 253, 265

AMOUNT OF COKE: 50 BAGS

WATER INFORMATION

WATER DEPTH (1): | WATER DEPTH (2):

GAS DEPTH: — | CEMENT PLUGS: —

RCVD AUG 21 '13
OIL CONS. DIV.
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OTHER INFORMATION

TOP OF VENT PERFORATIONS: 160' | VENT PIPE DEPTH: 300'

REMARKS:

COKE DEPTH 140"

IF ANY OF THE ABOVE INFORMATION IS UNAVAILABLE, PLEASE INDICATE SO. COPIES OF ALL LOGS, INCLUDING DRILLERS LOGS, WATER ANALYSIS, AND WELL BORE SCHEMATICS SHOULD BE SUBMITTED WHEN AVAILABLE. UNPLUGGED UNABANDONED WELLS ARE TO BE INCLUDED.

*- LAND TYPE MAY BE SHOWN: F-FEDERAL; I-INDIAN; S-STATE; P-FEE
IF FEDERAL OR INDIAN, ADD LEASE NUMBER.

ca

COMPANY:	CONOCO PHILLIPS	DATE:	7/30/2013	CASING:	SCH40 PVC	RECTIFIER MFG:	
COMPANY REP.:	JOHN TAFOYA	DIA. HOLE:	7 7/8	DIAMETER:	8"	MODEL:	
LOCATION:	GAGE 3/GAGE FDERAL 2R	DEPTH:	300'	CASING DEPTH:	20'	SERIAL #:	
JOB NO.:	340140453	COKE TYPE:	SW	# OF ANODES:	10	V-DC:	A -DC:
FOREMAN:	RON LUNA	# OF COKE:	50 BAGS	ANODE TYPE:	2284Z		
DRILLER:	DARREL FERRIER	# OF BENTONITE:	0	ANODE LEAD:	HWMPE #8		

corrpro

WELL LOG

DEPTH FT.	DRILLERS LOG - SOIL TYPE	VOLTS	AMPS	COMMENTS / ANODE #	DEPTH FT.	DRILLERS LOG - SOIL TYPE	VOLTS	AMPS	COMMENTS / ANODE #
0	TAN SANDSTONE	13.90		CASING	250	GRAY SANDSTONE		1.50	
5	TAN SANDSTONE			CASING	255	GRAY SANDSTONE		1.20	#2-253
10	TAN SANDSTONE			CASING	260	GRAY SANDSTONE		1.40	
15	TAN SANDSTONE			CASING	265	GRAY SANDSTONE		1.70	#1-265
20	TAN SANDSTONE			CASING	270	GRAY SANDSTONE		1.60	
25	TAN SANDSTONE				275	GRAY SANDSTONE		1.70	
30	TAN SANDSTONE				280	GRAY SANDSTONE			
35	TAN SANDSTONE				285	GRAY SHALE			
40	TAN SANDSTONE				290	GRAY SHALE			
45	TAN SANDSTONE				295	GRAY SHALE			
50	TAN SANDSTONE				300	GRAY SHALE			
55	TAN SANDSTONE				305				
60	TAN SANDSTONE				310		TD: 282'		
65	TAN SANDSTONE				315		VENT PIPE DEPTH: 300'		
70	TAN SANDSTONE				320				
75	TAN SANDSTONE				325				
80	TAN SANDSTONE		0.20		330				
85	TAN SANDSTONE		0.30		335				
90	TAN SANDSTONE		0.30		340				
95	TAN SANDSTONE		0.30		345				
100	TAN SANDSTONE		0.40		350				
105	TAN SANDSTONE		0.50		355				
110	TAN SANDSTONE		0.30		360				
115	TAN SANDSTONE		0.60		365				
120	TAN SANDSTONE		0.60		370				
125	TAN SANDSTONE		0.80		375				
130	TAN SANDSTONE		0.60		380				
135	TAN SANDSTONE		0.50		385				
140	TAN SANDSTONE		0.60		390				
145	TAN SANDSTONE		0.70		395				
150	TAN SANDSTONE		0.70		400				
155	TAN SANDSTONE		0.60	#10-157	405				
160	TAN SANDSTONE		0.40		410				
165	GRAY SANDY SANDSTONE		0.40		415				
170	GRAY SANDY SANDSTONE		0.70	#9-169	420				
175	GRAY SANDY SANDSTONE		0.80		425				
180	GRAY SANDY SANDSTONE		0.60	#8-181	430				
185	GRAY SANDY SANDSTONE		0.40		435				
190	GRAY SANDY SANDSTONE		0.40		440				
195	GRAY SANDY SANDSTONE		0.40	#7-193	445				
200	GRAY SANDY SANDSTONE		0.50		450				
205	GRAY SANDY SANDSTONE		0.60	#6-205	455				
210	GRAY SANDY SANDSTONE		0.90		460				
215	GRAY SANDY SANDSTONE		1.50	#5-217	465				
220	GRAY SANDY SANDSTONE		1.30		470				
225	GRAY SANDY SANDSTONE		1.40		475				
230	GRAY SANDY SANDSTONE		1.40	#4-229	480				
235	GRAY SANDY SANDSTONE		1.00		485				
240	GRAY SANDY SANDSTONE		1.30	#3-241	490				
245	GRAY SANDY SANDSTONE		1.60		495				

ANODE PLACEMENT

ANODE NO.	ANODE DEPTH	AMPS W/O COKE	AMPS W/ COKE
1	265	1.70	3.20
2	253	1.30	2.70
3	241	1.30	3.70
4	229	1.10	3.70
5	217	1.40	3.00
6	205	0.70	2.90
7	193	0.40	2.40
8	181	0.40	2.10
9	169	0.80	2.80
10	157	0.50	2.60
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

GROUNDBED RESISTANCE

TOTAL VOLTS:	13.90
TOTAL AMPS:	10.00
	1.39 OHMS

SITE ELEVATION: 6385'
WATER LEVEL #1:
WATER LEVEL #2:
COKE LEVEL: 140'
EXTRA CASING USED:
ADDITIONAL COMMENTS:
0-220 DRY
220-300 INJECT WATER
NO WATER

PP 7.5.1.24 Effective 11/13/12

3244

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

30-045-25080

Operator EPFS Location: Unit O Sec. 30 Twp 30 Rng 10

Name of Well/Wells or Pipeline Serviced Sellers Fed LS 2M #97693

Elevation _____ Completion Date 6-16-97 Total Depth 400 Land Type * SF 078195

Casing, Sizes, Types & Depths 8 5/8 - PVC - 24'

If Casing is cemented, show amounts & types used 6 BAGS Zim Type I & 2

If Cement or Bentonite Plugs have been placed, show depths & amounts used —

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. Damp @ 60' - Wet at. 130-140 -

Depths gas encountered: —

Type & amount of coke breeze used: Loresco SW.

Depths anodes placed: 165 - 305

Depths vent pipes placed: 305

Vent pipe perforations: 140'

Remarks: _____

D H Jarvis

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DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

* Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

DEEP WELL GROUNDBED DATA DATE June 16, 1997

COMPANY EPFS/Amoco COUNTY San Juan STATE NM

CONTRACT NO. FC-96-1000 UNIT NO. 97693

LOCATION Sellers Fed LS 2M

GROUNDBED: DEPTH 400 FT., DIA. 7 7/8 IN., ANODES (15)2 x 60 SHA-2

CASING: SIZE 8 IN., DEPTH 24 FT.

DEPTH FT.	DRILLER'S LOG	RESISTIVITY OHMS	RESISTIVITY AMPS	ANODE NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
5	Casing						
10	"						
15	"						
20	" (Casing to 24')						
25	Brown Sandstone						
30	"						
35	"						
40	"		1.7				
45	Blue Sandstone		1.2				
50	"		0.8				
55	"		0.7				
60	"		1.0				
65	"		0.8				
70	"		1.0				
75	"		2.1				
80	"		2.7				
85	Shale		3.1				
90	"		3.0				
95	"		2.7				
100	"		3.0				
105	"		3.3				
110	"		2.8				
115	"		2.5				
120	"		2.4				
125	"		1.7				
130	"		1.0				
135	Sandstone		0.6				
140	"		0.5				
145	"		0.7				
150	"		1.9				
155	"		3.1				
160	"		2.9				
165	Shale		3.3	15	165	3.1	7.3
170	"		3.2				
175	"		2.8	14	175	2.7	7.0
180	"		2.6				
185	"		3.1	13	185	2.9	7.1
190	"		2.8				
195	"		2.7	12	195	2.6	7.3
200	"		2.7				
205	"		2.6	11	205	2.6	6.9
210	"		2.5				
215	"		2.9	10	215	2.8	7.5
220	"		2.7				
225	"		2.8	9	225	2.7	7.0
230	"		2.6				
235	"		2.7	8	235	2.5	7.3
240	Shale		2.7				

COMPANY EPFS/AMOCO DATE June 16, 1997

LOCATION Sellers Fed LS 2M UNIT NO. 97693

DEPTH FT	DRILLER'S LOG	RESISTIVITY OHMS	AMPS	ANODE NUMBER	DEPTH TO ANODE TOP	BEFORE COKE	AFTER COKE
245	Shale		2.8	7	245	2.8	7.4
250	"		2.2				
255	"		2.7	6	255	2.7	7.1
260	"		2.5				
265	"		2.6	5	265	2.6	7.1
270	"		2.6				
275	"		2.6	4	275	2.5	6.8
280	"		2.5				
285	"		2.6	3	285	2.6	7.2
290	"		2.8				
295	"		2.5	2	295	2.5	6.4
300	"		2.5				
305	"		2.0	1	305	2.0	5.7
310	"		1.7				
315	"		1.7				
320	"		1.8				
325	"		1.6				
330	"		1.6				
335	"		1.9				
340	"		2.2				
345	"						
350	"						
355	"						
360	"						
365	"						
370	"						
375	"						
380	"						
385	"						
390	"						
395	"						
400	Shale						
405							
410							
415							
420							
425							
430							
435							
440							
445							
450							
455							
460							
465							
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475							
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495							
500							
505							
510							

TDM1350

DATA SHEET FOR DEEP BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(SUBMIT 2 COPIES TO OCD AZTEC OFFICE)

3-30-045-20858

PPCO DESIGNATION: FM-505
OPERATOR: PHILLIPS PETROLEUM COMPANY LOCATION: M 32 30 10
FARMINGTON, N.M. 87401 LEASE NUMBER: NA
(505) 599-3400
NAME OF WELL/S OR PIPELINE SERVED: (1) STEWARD A COM B #3 PC
(2) N/A

ELEVATION:NA COMPLETION DATE: 11/03/88
TOTAL DEPTH: 500 FT. LAND: STATE

CASING INFO.; SIZE: NA IN. TYPE: NA
DEPTH: NA FT. CEMENT USED: NA

IF CEMENT OR BENTONITE PLUGS HAVE BEEN PLACED, SHOW DEPTHS & AMOUNTS:
PLUG DEPTH: NONE
PLUG AMOUNT: NONE

WATER INFORMATION:
WATER DEPTH (FT): (1) 90 (2) -0-
WATER INFORMATION: NA

DEPTHS GAS ENCOUNTERED (FT): NA

TYPE AND AMOUNT OF COKE BREEZE USED:
COKE TYPE: METALLURGICAL COKE BREEZE
COKE AMOUNT: 5368 LBS.

DEPTHS ANODES PLACED (FT):
275,285,295,310,320,330,340,350,360,370

DEPTH VENT PIPE PLACED (FT): 500

VENT PIPE PERFORATIONS (FT): TOP 265 BOTTOM 500

REMARKS: -0-

IF ANY OF THE ABOVE DATA IS UNAVAILABLE, PLEASE INDICATE SO. COPIES OF ALL LOGS, INCLUDING DRILLERS LOG, WATER ANALYSIS & WELL BORE SCHEMATICS SHOULD BE SUBMITTED WHEN AVAILABLE. UNPLUGGED ABANDONED WELLS ARE TO BE INCLUDED.

* - LAND TYPE MAY BE SHOWN: F-FEDERAL; I-INDIAN; S-STATE; P-FEE
IF FEDERAL OR INDIAN, ADD LEASE NUMBER.

NA-INFORMATION NOT AVAILABLE

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CC: CP FILE--FARMINGTON
HOUSTON

OCD CATHODIC PROTECTION DEEPWELL GROUNDBED REPORT
DATA SHEET: NORTHWESTERN NEW MEXICO

SUBMIT 2 COPIES TO O.C.D. AZTEC OFFICE

OPERATOR: ConocoPhillips CO.
FARMINGTON, NM 87401
PHONE: 599-3400

LOCATION INFORMATION

API NUMBER: 3004535330

WELL NAME OR PIPLINE SERVED: STEWART LS 8N | LEGAL LOCATION: 28 30N 10W | INSTALLATION DATE: 12/13/2012

PPCO. RECTIFIER NO.: 10597W | ADDITIONAL WELLS:

TYPE OF LEASE: | LEASE NUMBER: NM-03566

0

GROUND BED INFORMATION

TOTAL DEPTH: 300' | CASING DIAMETER: 8" | TYPE OF CASING: PVC | CASING DEPTH: 40' | CASING CEMENTED ■

TOP ANODE DEPTH: 167' | BOTTOM ANODE DEPTH: 275'

ANODE DEPTHS: 167, 179, 191, 203, 215, 215, 227, 239, 251, 263, 275,

AMOUNT OF COKE: 50 BAGS

WATER INFORMATION

WATER DEPTH (1): 130' TO 300' | WATER DEPTH (2):

GAS DEPTH: — | CEMENT PLUGS: —

RCVD JAN 9 '13
OIL CONS. DIV.
DIST. 3

OTHER INFORMATION

1 VENT PERFORATIONS: 160' | VENT PIPE DEPTH: 300'

REMARKS:

COKE DEPTH:150'

IF ANY OF THE ABOVE INFORMATION IS UNAVAILABLE, PLEASE INDICATE SO. COPIES OF ALL LOGS, INCLUDING DRILLERS LOGS, WATER ANALYSIS, AND WELL BORE SCHEMATICS SHOULD BE SUBMITTED WHEN AVAILABLE. UNPLUGGED UNABANDONED WELLS ARE TO BE INCLUDED.

*- LAND TYPE MAY BE SHOWN: F-FEDERAL; I-INDIAN; S-STATE; P-FEE
IF FEDERAL OR INDIAN, ADD LEASE NUMBER.

Wednesday, Nove

ca

COMPANY:	CONOCO PHILLIPS	DATE:	12/13/2012	CASING:	SCH40 PVC	RECTIFIER MFG:	
COMPANY REP.:	JOHN TAFOYA	DIA. HOLE:	7 7/8	DIAMETER:	7 7/8	MODEL:	
LOCATION:	STEWART LS / 8N	DEPTH:	300'	CASING DEPTH:	40'	SERIAL #:	
JOB NO.:	340140362	COKE TYPE:	SW	# OF ANODES:	10		
FOREMAN:	RON LUNA	# OF COKE:	50 BAGS	ANODE TYPE:	2284Z		
DRILLER:	DARREL FERRIER	# OF BENTONITE:	0	ANODE LEAD:	HWMPE #8	V-DC:	A -DC:

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WELL LOG

DEPTH FT.	DRILLERS LOG - SOIL TYPE	VOLTS	AMPS	COMMENTS / ANODE #	DEPTH FT.	DRILLERS LOG - SOIL TYPE	VOLTS	AMPS	COMMENTS / ANODE #
0	SAND	14.40		CASING	250	SANDSTONE		2.60	#3-251
5	SAND			CASING	255	SANDSTONE		2.70	
10	SAND			CASING	260	SANDSTONE		2.10	
15	SAND			CASING	265	SANDSTONE		1.70	#2-263
20	SAND			CASING	270	SANDSTONE		1.20	
25	SAND			CASING	275	SANDSTONE		1.10	#1-275
30	SAND			CASING	280	SANDSTONE		1.50	
35	SANDSTONE			CASING	285	SANDSTONE		1.80	
40	SANDSTONE			CASING	290	SANDSTONE			
45	SANDSTONE				295	SANDSTONE			
50	SANDSTONE				300	SANDSTONE			
55	SHALE				305				
60	SHALE				310		TD: 292'		
65	SANDSTONE				315		VENT PIPE DEPTH: 303'		
70	SANDSTONE				320				
75	SANDSTONE				325				
80	SANDSTONE				330				
85	SHALE				335				
90	SHALE		2.20		340				
95	SHALE		0.50		345				
100	SHALE		0.70		350				
105	SANDSTONE		1.00		355				
110	SANDSTONE		0.80		360				
115	SANDSTONE		1.00		365				
120	SANDSTONE		1.40		370				
125	SANDSTONE		2.30		375				
130	SANDSTONE		2.50		380				
135	SANDY SHALE		2.40		385				
140	SANDY SHALE		1.60		390				
145	SANDY SHALE		0.90		395				
150	SANDY SHALE		1.00		400				
155	SANDSTONE		1.00		405				
160	SANDSTONE		0.50		410				
165	SANDSTONE		1.30	#10-167	415				
170	SANDSTONE		2.50		420				
175	SHALE		3.10		425				
180	SHALE		3.30	#9-179	430				
185	SHALE		3.20		435				
190	SHALE		3.00	#8-191	440				
195	SANDY SHALE		3.00		445				
200	SANDY SHALE		3.70		450				
205	SHALE		5.70	#7-203	455				
210	SHALE		5.60		460				
215	SHALE		2.40	#6-215	465				
220	SHALE		4.30		470				
225	SHALE		3.90	#5-227	475				
230	SHALE		3.40		480				
235	SHALE		2.80		485				
240	SHALE		2.60	#4-239	490				
245	SANDSTONE		2.50		495				

ANODE PLACEMENT

ANODE NO.	ANODE DEPTH	AMPS W/O COKE	AMPS W/ COKE
1	275	1.30	4.60
2	263	1.80	5.20
3	251	2.40	6.80
4	239	2.50	7.60
5	227	4.00	11.40
6	215	5.10	12.60
7	203	4.00	11.90
8	191	3.10	10.50
9	179	3.40	10.50
10	167	1.60	7.80
11			
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GROUNDBED RESISTANCE

TOTAL VOLTS: 14.40

TOTAL AMPS: 27.70

0.52 OHMS

SITE ELEVATION: 6317'

WATER CONDUCTIVITY:

COKE LEVEL: 150'

EXTRA CASING USED:

ADDITIONAL COMMENTS: INJECT WATER 130'-300'

PP 7.5.1.24 Effective 11/13/12

1-30-045-09295
3-30-045-09288

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 21 Twp 30 Rng 10

Name of Well/Wells or Pipeline Serviced ~~SUNRAY D #1, #3~~

~~cps 795w~~

Elevation 6351' Completion Date 8/23/67 Total Depth 480' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 140'

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DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 3400 lbs.

Depths anodes placed: 465', 459', 453', 447', 441', 435', 429', 423', 382', 376', 237'

23

Depths vent pipes placed: 459' OF 3/4" HOSE

Vent pipe perforations: 400'

Remarks: ~~gb #1~~ HOLE CAVED OR SQUEEZED-COULD NOT GET GOKE AROUND ALL ANODES.

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (7-63)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Posted

Date 8-23-67

$4\frac{3}{4}$ #55 = 160

Well Name: Sunray D						CPS No. 795 W 794 W	
Location: 24 21-20-10						Work Order No. 184-52457-50-20	
Anode Hole Depth: 480	Total Drilling Rig Time: 39 Hrs	Type & Size Bit Used: 8876=106 7¾-717468=320-87976=30				No. Sacks Mud Used: 0	
No. Sacks Lost Circulation Mat'l Used: 1	Anode Depth #1: 465	#2: 459	#3: 453	#4: 447	#5: 441	#6: 435	
Total Lbs. Coke Used: 3400	Anode Output (Volts) #1: 6.2	#2: 8.7	#3: 9.5	#4: 7.2	#5: 7.1	#6: 4.6	
Total Circuit Resistance: Volts 11.7	Amps 6.5	Ohms 2-1	No. Ft. Surface Cable Conduit: 5018 Anode=466 Surface=5484				

Drilling Log (Attach Hereto). ☐ 7 429 8 423 9 382 10 376 11 237 12 231

Remarks: 7 3.2 8 3.7 9 3.5 10 3.1 11 2.3 12 3.0

R°/s 600' N = 0.82

3/4" Hose to No 2 Anode Perforated 400'

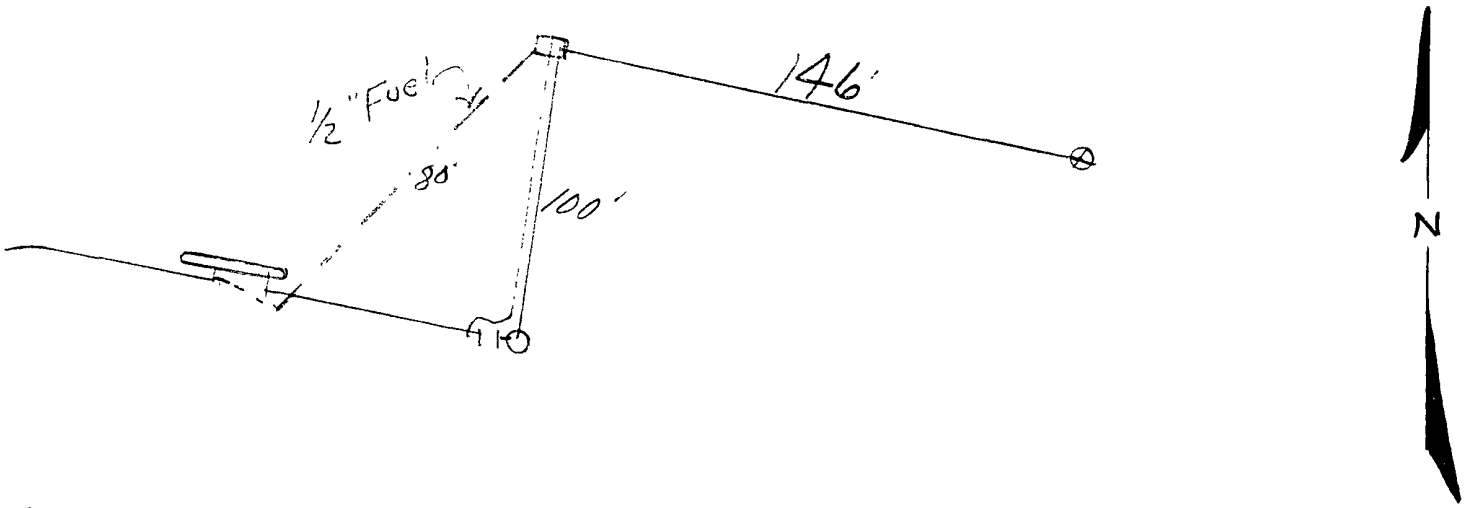
5 lbs Borafos Circ. Thru Hole

NOTE - Hole Caved or Squeezed - Could Not Get Coke around All Anodes

All Construction Completed

Lowrels
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

Form 22 (Rev. 1961)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

[illegible] 160'

LEASE ______ WELL NO. 79-1 W CONTRACTOR [illegible] RIG NO. ______ REPORT NO. ______ DATE ______ 19__

MORNING FROM	TO	FORMATION	WT. BIT	R.P.M.	DAYLIGHT FROM	TO	FORMATION	WT. BIT	R.P.M.	EVENING FROM	TO	FORMATION	WT. BIT	R.P.M.
0	235	SS			275	300	SS			345	359	SS		
235	240	SH			300	310	SH			355	370	SSH		
240	260	SS			310	325	SS			390	385	SH		
260	275	SSH			325	345	SH			385	410	SS		

MORNING	DAYLIGHT	EVENING
BIT NO. 717462 — NO. DC 1 SIZE ___ LENG. ___ — 320	BIT NO. 83176 — 140'	BIT NO. 87976 — 70'
SERIAL NO. ___ STANDS ___	SERIAL NO. ___ STANDS ___	SERIAL NO. ___ STANDS ___
SIZE 7 7/8 SINGLES ___	SIZE ___ SINGLES ___	SIZE ___ SINGLES ___
TYPE ___ DOWN ON KELLY ___	TYPE ___ DOWN ON KELLY ___	TYPE ___ DOWN ON KELLY ___
MAKE ___ TOTAL DEPTH ___	MAKE ___ TOTAL DEPTH ___	MAKE ___ TOTAL DEPTH ___

MUD RECORD — MUD ADDITIVES USED AND RECEIVED (Morning): 100 salt, 100 Hull

TIME BREAKDOWN

FROM	TO	TIME BREAKDOWN
8-16-67		2 1/2 hrs
8-17-67		10 hrs
8-18-67		10 hrs
8-21-67		10 hrs
8-22-67		6 1/2 hrs
		39 hrs [illegible]

FROM	TO	
410	460	SH
460	480	SS

[illegible] at 190

[illegible] location 230 PM

REMARKS:

8-16-67 [illegible] + 160 with 4 [illegible] at 500

8-17-67 [illegible] 270 with 7 1/2 [illegible] at 500

8-18-67 [illegible] 120' 7 1/2 [illegible] at 500

8-21-67 [illegible] at 500

8-22-67 [illegible] drilled 30 [illegible] moved to new location 230 PM

SIGNED: Toolpusher ______ Company Supervisor Sorrels

1- 30-045-09295

3- 30-045-09288

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SW Sec. 21 Twp 30 Rng 10

Name of Well/Wells or Pipeline Serviced SUNRAY D #1, #3

cps 795w

Elevation 6351' Completion Date 8/28/67 Total Depth 460' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 120' & 220'

Depths gas encountered: N/A

Type & amount of coke breeze used: 6800 lbs.

Depths anodes placed: 448', 442', 436', 430', 424', 418', 412', 406', 400', 394', 343', 291'

Depths vent pipes placed: 430' OF 3/4 " HOSE

Vent pipe perforations: 340'

Remarks: gb #2

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Natural Gas Company
238 (7-63)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Tested

Date 8-28-67

4 3/4 #54 = 220

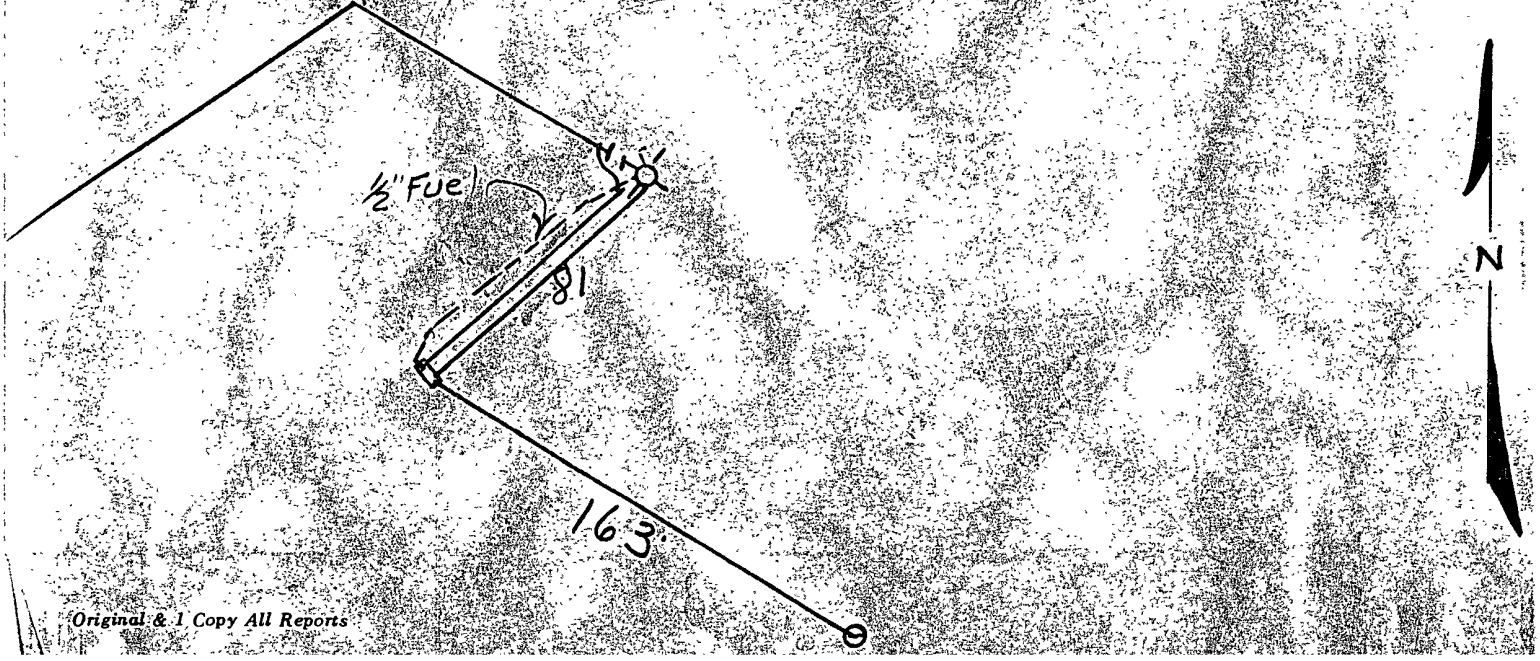
Well Name: Sunray 3D						CPS No.: 795W
Location: SW 21-30-10						Work Order No.: 184-53646-50-20
Anode Hole Depth: 460	Total Drilling Rig Time: 41 Hrs	Type & Size Bit Used: 39174 = 80; 7 7/8 - 87976 = 200 - 36264 = 180				No. Sacks Mud Used: 0
No. Sacks Lost Circulation Mat'l Used: 0	Anode Depth #1: 448	#2: 442	#3: 436	#4: 430	#5: 424	#6: 418
Total Lbs. Coke Used: 6800	Anode Output (Volts) #1: 3.2	#2: 3.0	#3: 3.3	#4: 4.3	#5: 4.5	#6: 5.8
Total Circuit Resistance: Volts 12.0	Amps 15.7	Ohms 0.76	No. Ft. Surface Cable Conduit: 445 - Surface 5084 Anodes = 5529			
Drilling Log (Attach Hereto). ☐	7: 412	8: 406	9: 400	10: 394	11: 343	12: 291
Remarks:	7: 6.1	8: 6.0	9: 6.0	10: 5.2	11: 4.3	12: 3.9

Rc/s 600' E = 0.77
3/4" Hose to No. 4 Anode Perforated 340
15 lbs Borafos Circ. thru. Hole

All Construction Completed

Daniels
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

[illegible] 57 231

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE: | WELL NO. 795W | CONTRACTOR: [illegible] | RIG NO. | REPORT NO. | DATE 19

MORNING

Driller: | Total Men In Crew:

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	160	SS		
160	195	SH		
195	265	SS		
265	275	SH		

BIT NO. 87926 200' | NO. DC SIZE LENG. | NO. DC SIZE LENG.
SERIAL NO. | STANDS
SIZE 7 7/8 | SINGLES
TYPE | DOWN ON KELLY
MAKE | TOTAL DEPTH

MUD RECORD: Time | Wt. | Vis. — MUD ADDITIVES USED AND RECEIVED: 100 [illegible]

FROM	TO	TIME BREAKDOWN
		Left last location 130
		Water at 130' + 220'

REMARKS

8-17-67 Drilled 5 [illegible] hole + 220 with 4 3/4 lifting at 500
8-19-67 [illegible] 600 [illegible] at 100 Drilled 200 lifting at 500
8-21-67 Lifting [illegible] 600 [illegible] 700 Drilled 110 lifting at 600
8-25-67 Lifting [illegible] 600 [illegible] 700 Drilled 100 lifting at 500
8-28-67 Lifting [illegible] 600 [illegible] 700 Drilled 50 [illegible] hole left location, 230

DAYLIGHT

Driller: | Total Men In Crew:

FROM	TO	FORMATION	WT-BIT	R.P.M.
275	285	SS		
285	300	SH		
300	335	SS		
335	350	SH		

BIT NO. 36264 180' | NO. DC SIZE LENG. | NO. DC SIZE LENG.
SERIAL NO. | STANDS
SIZE 7 7/8 | SINGLES
TYPE | DOWN ON KELLY
MAKE | TOTAL DEPTH

MUD RECORD: Time | Wt. | Vis. — MUD ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
8-17	67	3 1/2 hrs
8-19	67	10 hrs
8-21	67	10 hrs
8-25	67	10 hrs
8-28	67	7 1/2 hrs
		41 hrs total

REMARKS

EVENING

Driller: | Total Men In Crew:

FROM	TO	FORMATION	WT-BIT	R.P.M.
350	390	SS		
390	420	SH		
420	430	SS		
430	445	SH		

BIT NO. 39174 80' | NO. DC SIZE LENG. | NO. DC SIZE LENG.
SERIAL NO. | STANDS
SIZE 7 7/8 | SINGLES
TYPE | DOWN ON KELLY
MAKE | TOTAL DEPTH

MUD RECORD: Time | Wt. | Vis. — MUD ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
445	460	SS

REMARKS

SIGNED: Toolpusher ____ Company Supervisor: Sorrels

1265

30-045- 24139

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit NW Sec. 21 Twp 30 Rng 10

Name of Well/Wells or Pipeline Serviced SUNRAY D #1A

cps 1572w

Elevation 6426' Completion Date 9/2/81 Total Depth 500' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 50' - 70' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 470', 445', 405', 380', 330', 310', 295', 280', 170', 150'

Depths vent pipes placed: 500'

Vent pipe perforations: 460'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ Completion Date 9-2-81

Well Name: SUNRAY "D" 1A			Location: NW 21-30-10					GPS No.: 1572 W	
Type & Size Bit Used: UNION OTC			STATIC = .89					Work Order No.: 57782-21-50-20	
Anode Hole Depth: 500' LOG 495'		Total Drilling Rig Time		Total Lbs. Coke Used		Lost Circulation Matl Used		No. Sacks Mud Used	
Anode Depth									
# 1: 470	# 2: 445	# 3: 405	# 4: 380	# 5: 330	# 6: 310	# 7: 295	# 8: 280	# 9: 170	# 10: 150
Anode Output (Amps)									
# 1: 463	# 2: 532	# 3: 355	# 4: 442	# 5: 281	# 6: 466	# 7: 403	# 8: 330	# 9: 216	# 10: 308
Anode Depth									
# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Output (Amps)									
# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Total Circuit Resistance					No. 8 C.P. Cable Used			No. 2 C.P. Cable Used	
Volts: 11.8	Amps: 22.5	Ohms: .52							

Remarks: WET 50' TO 70' AFTER 30 MIN BLOW SAMPLE MAY BE TO MUDDY.
40' 1" PLAIN VENT PIPE BALANCE PERFORATED

All Construction Completed

BT
(Signature)

GND BED
45'
150'
40-16 ✓
STUB ✓
POLE

GROUND BED LAYOUT SKETCH

DITCH #1 CABLE = 195'
XTRA CABLE = 170' ✓
HOLE = ●-5' ✓

N

TIME	REG	OT
9-2-81	8	2 ✓

DISTRIBUTION:
WHITE – Division Corrosion Office
YELLOW – Area Corrosion Office
PINK – Originator File

le426

Form 22-2 (Rev 5-79)

EL PASO NATURAL GAS COMPANY
DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE Sunray "D" #1A WELL NO. CONTRACTOR Stacy Drilling CPS 1572 W RIG NO. REPORT NO. DATE Oct 2 1981

MORNING | DAYLIGHT | EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO.
SERIAL NO.
SIZE
TYPE
MAKE

NO. DC ___ SIZE ___ LENG. ___
NO. DC ___ SIZE ___ LENG. ___
STANDS
SINGLES
DOWN ON KELLY
TOTAL DEPTH

MUD RECORD — MUD, ADDITIVES USED AND RECEIVED

Time	Wt.	Vis.

Morning – Time Breakdown

FROM	TO	TIME BREAKDOWN
0	80	Sand
80	120	Shale
120	160	Sand
1[illegible]	180	Shale
180	230	Sandy Shale
230	280	Sand

Daylight – Time Breakdown

FROM	TO	TIME BREAKDOWN
280	380	Sandy Shale
380	480	Shale
480	500	Sand

Evening – Time Breakdown

FROM	TO	TIME BREAKDOWN

REMARKS –
Water 80
Drilled 500 TD 495

REMARKS –

REMARKS –

SIGNED: Toolpusher ______ Company Supervisor ______

EL PASO NATURAL GAS COMPANY

Form 7-354 (Rev 11-77)

Date: 4-6-81

By: BT

1572 W S7782-21-50-20

SUNRAY "D" #1A NW 21-30-10

WET FROM 50' TO 70' BLOW SAMPLE
AFTER 30 MIN SAMPLE TO MUDDY
40' 1" PLAIN VENT PIPE BALANCE PERFORATED

DRILLED 500
LOGED 495

MW		gals/mol
16 04	C_1	6 4
30 07	C_2	10 12
44 10	C_3	10 42
58 12	iC_4	12 38
58 12	nC_4	11 93
72 15	iC_5	13 85
72 15	nC_5	13 71
86 18	iC_6	15 50
86 18	C_6	15 57
100 21	iC_7	17 2
100 21	C_7	17 46
114 23	C_8	19 39
28 05	$C_2^=$	9 64
42 08	$C_3^=$	9 67

MISC MW		gals/mol
32 00	O_2	3 37
28 01	CO	4 19
44 01	CO_2	6 38
64 06	SO_2	5 50
34 08	H_2S	5 17
28 01	N_2	4 16
2 02	H_2	3 38

80	1.60	55	1.49	30	1.00	5	3.19		
85	124	60	2.35	35	.77	10	2.72	- 6	
90	219	65	2.20	40	.80	15	2.46		
95	2.41	70	1.55	45	1.01	20	2.00		
100	1.58	75	1.23	50	1.03	25	1.98		
5	.78	80	1.06	55	.89	30	1.80		
10	.62	85	.98	60	.79	35	1.55	- 5	
15	.54	90	.83	65	.77	40	1.42		
20	.50	95	.86	70	.98	45	1.35		
25	.60	200	.53	75	1.22	50	1.03		
30	.63	5	.70	80	1.26	- 8	55	1.15	
35	.57	10	.98	85	2.13		60	.94	
40	.82	15	.95	90	2.52		65	.74	
45	.70	20	.71	95	2.42	- 7	70	.83	
50	.68	25	.73	300	2.60		75	.87	
	- 10						80	1.85	- 4
			11.8 VOLTS				85	3.13	
			22.5 AMPS				90	3.05	
			.52			- 2	95	1.72	
1	470'	2.94	463	450	3.33		400	1.04	
2	445'	3.34	532	65	3.24		5	.92	
3	405'	2.38	355	60	3.20		10	2.32	
4	380'	3.03	442	65	2.94	- 1	15	2.43	
5	330'	1.88	281	70	2.89		20	2.06	
6	310'	2.89	466	75	2.67		25	1.10	
7	295'	2.57	403	80	2.26		30	1.22	
8	280'	1.95	330	85	1.64		35	2.42	
9	170'	1.36	216	90	1.51		40	2.94	
10	150'	1.72	308	95			45	3.19	
				500					

PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10328 Date 9-21-81

Operator El Paso Natural Gas Well Name Sun Ray "D"-1A CPS 1572 W

Location NW 21-30-10 County San Juan State New Mexico

Field Kutz Formation

Sampled From 50 - 70'

Date Sampled 9-2-81 By B.T.

Tbg. Press. Csg. Surface Csg. Press.

	ppm	epm		ppm	epm
Sodium	1555	67.6	Chloride	72	2.0
Calcium	508	25.4	Bicarbonate	127	2.1
Magnesium	108	8.9	Sulfate	4,700	97.8
Iron			Carbonate	0	0
H_2S			Hydroxide	0	0

Total Solids Dissolved 6,614

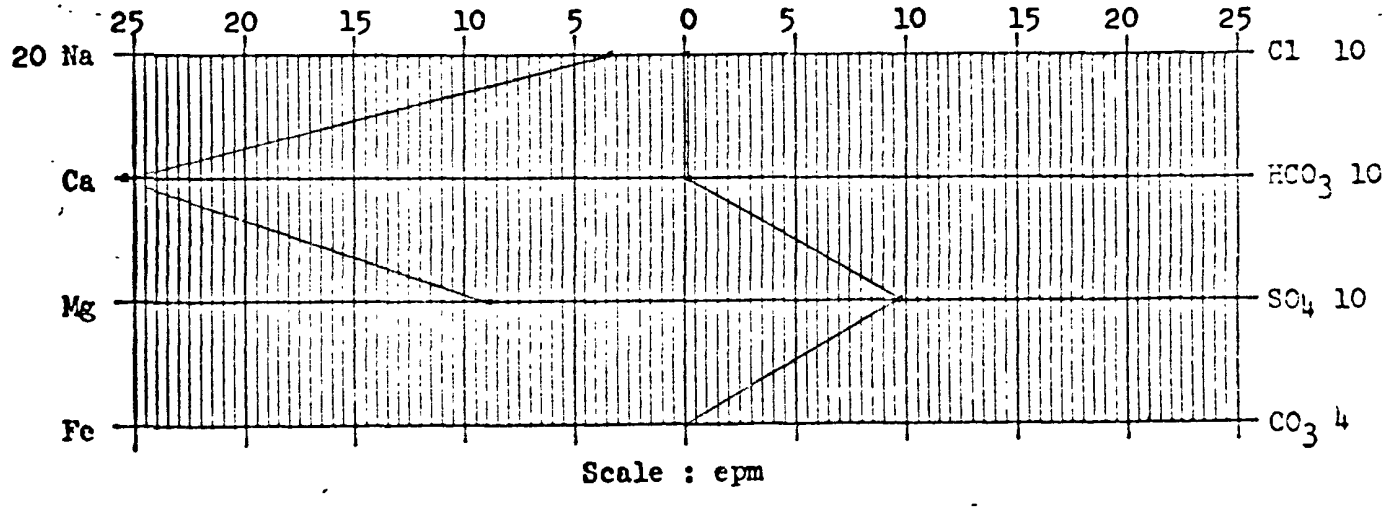
pH 7.2

Sp. Gr. 1.0215 At 60°F

Resistivity 138 ohm-cm at 75 °F

cc: R. A. Ullrich
E. R. Paulek
J. W. McCarthy
J. D. Evans
W. B. Shropshire
D. C. Adams
File

Joe P. Barnett & Dennis P. Bird
Chemist



#2 30-045-09357

#2-R 30-045-23862

#225 30-045-27067

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit H Sec. 21 Twp 30 Rng 10

Name of Well/Wells or Pipeline Serviced SUNRAY D #2, #2R, #225

cps 2066w

Elevation 6302' Completion Date 1/6/89 Total Depth 420' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 160' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 395', 385', 375', 335', 325', 280', 270', 240', 230', 220'

Depths vent pipes placed: 420'

Vent pipe perforations: 300'

Remarks: gb #2

RECEIVED
MAY 31 1991
CON. DIV.

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

FM-07-023R (Rev 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

COMP 1-11-89

Drilling Log (Attach Hereto) ☒ Completion Date 1-6-89

CPS #	Well Name, Line or Plant	Work Order #	Static	Ins Union Check
2066-W	SUNRAY "D" #225 #2 #2R	3327A	600' S=.75	☒ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
H 21-30-10	2" x 60"	DURIRON	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs Coke Used	Lost Circulation Mat'l Used	No Sacks Mud Used
420'	420'				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	395'	385'	375'	335'	325'	280'	270'	240'	230'	220
Anode Output (Amps)	4.1	4.8	5.0	3.4	3.3	3.2	3.7	3.9	4.8	5.0
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.3	Amps 19.5	Ohms .631		

Remarks: DRILLED 420'; LOGGED 420'; DRILLER SAID WATER AT 160', NO SAMPLE. INSTALLED 420' of 1" PVC VENT PIPE; PERFORATED BOTTOM 300'

* CAN TIE RECTIFIER INTO EXISTING AC

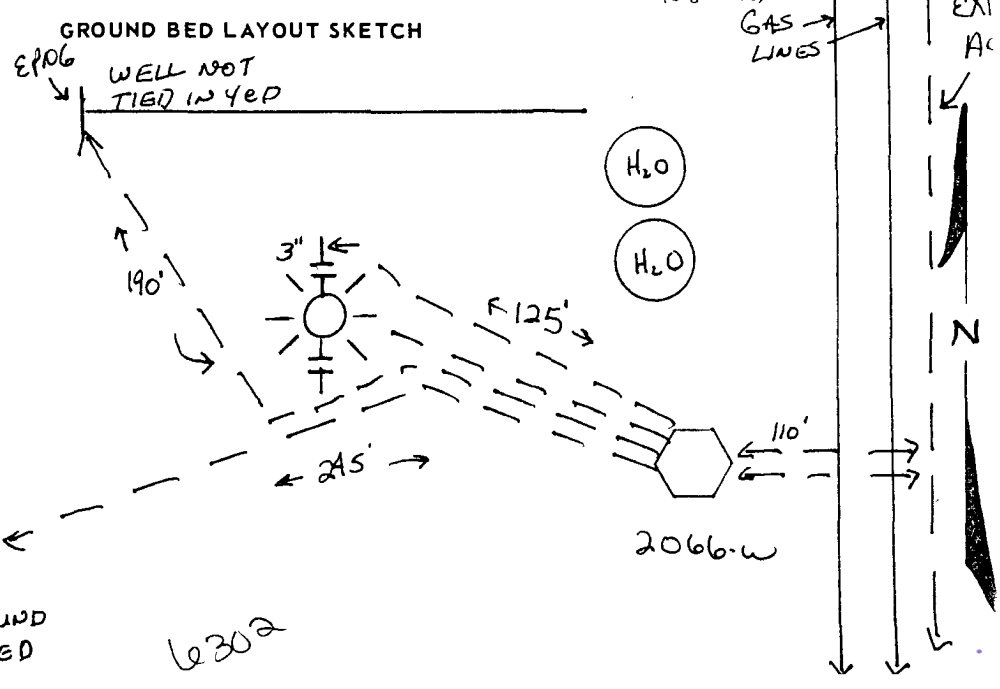
Rectifier Size: 40 V 16 A
Addn'l Depth
Depth Credit: 80' 3.50
Extra Cable: 545' .34
Ditch & 1 Cable: 420' .70
25' Meter Pole:
20' Meter Pole:
10' Stub Pole: 1

4074.00
- 280.00 CREDIT
669.00 RECT.
130.80 EX. CABLE
294.00 DITCH + 1
158.50 STUB POLE
225.00 J. BOX
5271.30
263.57 TAX
5534.87

All Construction Completed

(Signature)

GROUND BED LAYOUT SKETCH



Darrell Crass DRILLING CO.

Drill No. 3

DRILLER'S WELL LOG

S. P. No. Sunray D #225 Date 1-6-89

Client Meridian Oil Co. Prospect

County San Juan State New Mex.

If hole is a redrill or if moved from original staked position show distance and direction moved:

FROM	TO	FORMATION — COLOR — HARDNESS
0	160	Sand
160	175	Shale
175	265	Sandy Shale
265	280	Shale
28	370	Sandy Shale
370	420	Shale

Mud Bran Lime

Rock Bit Number Make

Remarks: Water @ 160'

Driller Ronnie Brown

30-045- 23831

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL Location: Unit SE Sec. 21 Twp 30 Rng 10

Name of Well/Wells or Pipeline Serviced SUNRAY D #2A

cps 1574w

Elevation 6271' Completion Date 8/31/81 Total Depth 485' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 185' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 5820 lbs.

Depths anodes placed: 460', 450', 440', 430', 420', 410', 400', 390', 380', 350'

Depths vent pipes placed: 485',

Vent pipe perforations: 320'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto). ☐ 2 X 60 ANODES Completion Date 8-31-81

Well Name	Location	CPS No.
SUNRAY D #2A	SE21-30-10	1574-W

Type & Size Bit Used	Work Order No.
6 3/4"	57678-21

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
485' logged 485'		5820		

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	460	450	440	430	420	410	400	390	380	350
Anode Output (Amps)	4.8	3.1	5.5	6.2	6.6	6.3	4.8	6.3	4.5	3.0
Anode Depth	#11	#12	#13	#14	#15	#16	#17	18	19	20
Anode Output (Amps)	11	12	13	14	15	16	17	18	19	20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 4 C.P. Cable Used
Volts 11.9	Amps 22.2	Ohms .53		

Remarks: STATIC 600' SW .80 UNIONS OK

DRILLER SAID HIT WATER AT 185' GOT WATER SAMPLE.

INSTALLED 485' OF 1" VENT PIPE, PERFORATED 320' OF VENT PIPE

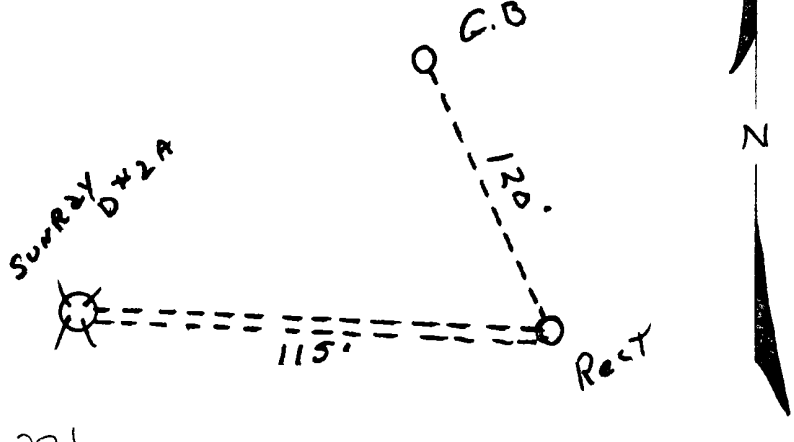
SLURRYED 5820 lbs OF COKE BREEZE

1 40V 16A RECT. ✓
1 STUB POLE ✓
DITCH + 1 CABLE - 235' ✓
EXTRA CABLE - 135' ✓
HOLE DEPTH - 15' ✓
SET 20' CASING - 1 HR. ✓

All Construction Completed

Willis Knight Jr.
(Signature)

GROUND BED LAYOUT SKETCH



Time	Reg	O.T.
8-31-81	8	1 ✓
9-2-81	8	1 ✓

DISTRIBUTION:
WHITE – Division Corrosion Office
YELLOW – Area Corrosion Office
PINK – Originator File

L6271

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE CPS 1574-W WELL NO. Sunray D #2A CONTRACTOR Stanf Drilling RIG NO. 1 REPORT NO. DATE 8-31-81 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	20	QB-Gravel		
20	185	SS w/Sh		
185	375	SS w/Sh streaks		

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

Water at 185'

logged 485

T.D. 485

1 hr rig time setting 20' 8" Casing

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
375	485	Sh		

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

BIT NO. NO. DC SIZE LENG.

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Al Stanf Company Supervisor

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet ___ of ___
Date 8-31-8
By WK
File ___

SUNRAY D #2A
SE 21-30-10
CPS 1574 W

STATIC 600' SW, 180
W/O 57678-21

1 40V 16A Rect.
1 STUB Pole
DITCH + 1 cable - 235'
EXTRA cable - 135'
Hole Depth - 15'
Set 20' of casing - 1 hr.

DRILLER Said hit WATER at 185'. Got WATER Sample
INSTALLED 485' of 1" VENT PIP
PERFORATED 320' OF VENT PIPE
SLURRIED 5820 ld of COKE

MW		gals/mol
16 04	C_1	6 4
30 07	C_2	10 12
44 10	C_3	10 42
58 12	iC_4	12 38
58 12	nC_4	11 93
72 15	iC_5	13 85
72 15	nC_5	13 71
86 18	iC_6	15 50
86 18	C_6	15 57
100 21	iC_7	17 2
100 21	C_7	17 46
114 23	C_8	19 39
28 05	$C_2^=$	9 64
42 08	$C_3^=$	9 67

MISC MW		gals/mol
32 00	O_2	3 37
28 01	CO	4 19
44 01	CO_2	6 38
64 06	SO_2	5 50
34 08	H_2S	5 17
28.01	N_2	4 16
2 02	H_2	3 38

185	.30	35	.30
90	1.10	40	1.00
95	1.20	45	1.30
200	1.00	50	1.20 (10)
05	1.00	55	1.00
10	.90	60	.80
15	.80	65	.50
20	.90	70	.80
25	.70	75	.70
30	.50	80	1.10 (9)
35	.30	85	1.60
40	.30	90	1.40 (8)
45	.40	95	1.60
50	.60	400	1.60 (7)
55	1.00	05	1.60
60	1.20	10	1.60 (6)
65	.90	15	1.60
70	.80	20	1.50 (5)
75	.70	25	1.60
80	.60	30	1.70 (4)
85	.60	35	1.60
90	.60	40	1.70 (3)
95	.60	45	1.50
300	.80	50	1.20 (2)
05	.80	55	1.40
10	.70	60	1.70 (1)
15	.70	65	1.60
20	.80	70	1.60
25	.50	75	1.90
30	.30	80	1.90
		85	1.5 TD

(1)	460	3.6	4.80
(2)	450	2.0	3.10
(3)	440	3.5	5.50
(4)	430	3.9	6.20
(5)	420	3.5	6.60
(6)	410	3.60	6.30
(7)	400	3.20	4.80
(8)	390	3.50	6.30
(9)	380	2.80	4.50
(10)	350	2.10	3.00

11.9 V
22.2 A
.53 Ω

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10322 Date 9-18-81

Operator El Paso Natural Gas Well Name Sun Ray D #2A CPS 1574 W

Location SE 21-30-10 County San Juan State New Mexico

Field Kutz Formation

Sampled From 185'

Date Sampled 8-31-81 By Willie Knight

Tbg. Press. Csg. Surface Csg. Press.

	ppm	epm		ppm	epm
Sodium	378	16.4	Chloride	20	0.6
Calcium	564	28.2	Bicarbonate	356	5.8
Magnesium	39	3.2	Sulfate	2,000	41.6
Iron	No test		Carbonate	0	0
H_2S	No test		Hydroxide	0	0

Total Solids Dissolved 2,852

pH 7.5

Sp. Gr. 1.0055 At 60°F

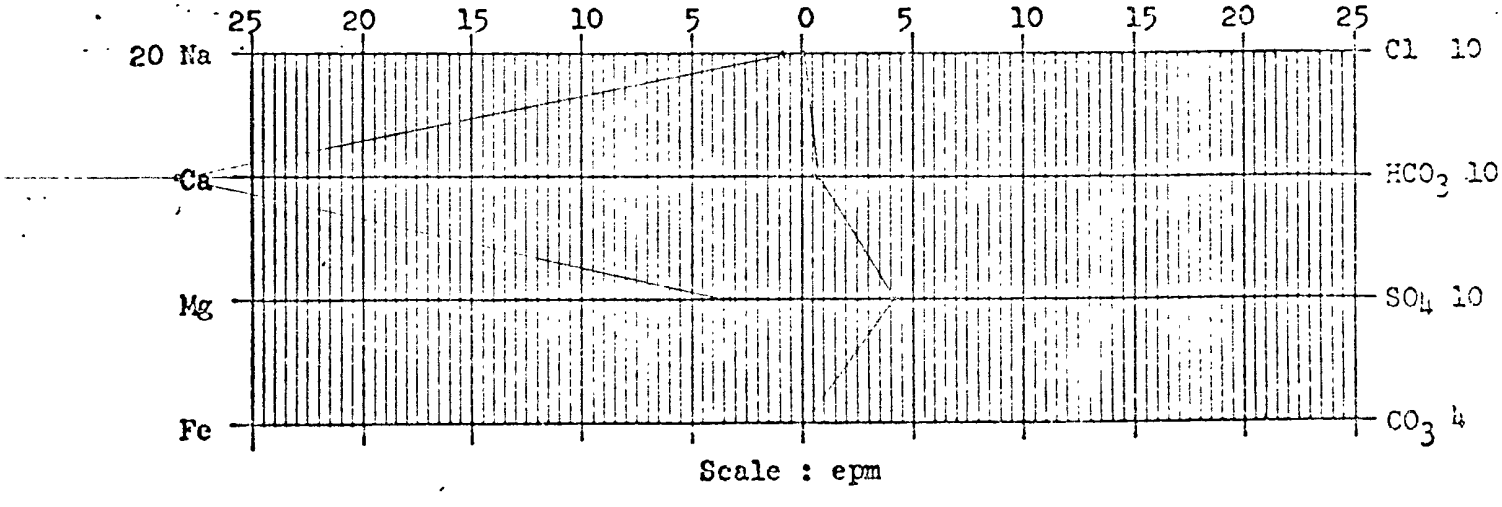
Resistivity 333 ohm-cm at 75 °F

cc: R. A. Ullrich
E. R. Paulek
J. W. McCarthy
J. D. Evans
W. B. Shropshire
D. C. Adams
File

HCO_3 taken to pH 4.0

Joe P. Barnett & Dennis P. Bird
Chemist

JWS



#2 30-045-09359
#2-R 30-045-23862
#225 30-045-27067

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit NE Sec. 21 Twp 30 Rng 10

Name of Well/Wells or Pipeline Serviced SUNRAY D #2, #2R, #225

cps 2066w

Elevation 6302' Completion Date 8/28/81 Total Depth 485' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 185' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 6300 lbs.

Depths anodes placed: 455', 445', 435', 425', 415', 385', 375', 280', 265', 240'

Depths vent pipes placed: 480'

Vent pipe perforations: 320'

Remarks: (gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST.

If any of the above data is unavailable, please indicate. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☑ Completion Date 8-28-81

Well Name	Location	CPS No.
Sunray D #2R #3 #225	NE 21-30-10	~~1575-W~~ 2066
Type & Size Pit Used		**Work Order No.**
6 3/4" 2" X 60" Duriron anodes		57731-21-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs Coke Used	Last Circulation Mat'l Used	No. Sacks Mud Used
Drilled 485' logged 485'		Approx. 6,300 lbs Bulk		

	1	2	3	4	5	6	7	8	9	10
Anode Depth	455	445	435	425	415	385	375	280	265	240
Anode Output (Amps)	3.70	4.07	4.07	4.47	4.50	2.86	3.50	3.31	4.70	2.16
Anode Depth	11	12	13	14	15	16	17	18	19	20
Anode Output (Amps)	11	12	13	14	15	16	17	18	19	20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 19.6	Ohms .60Ω		

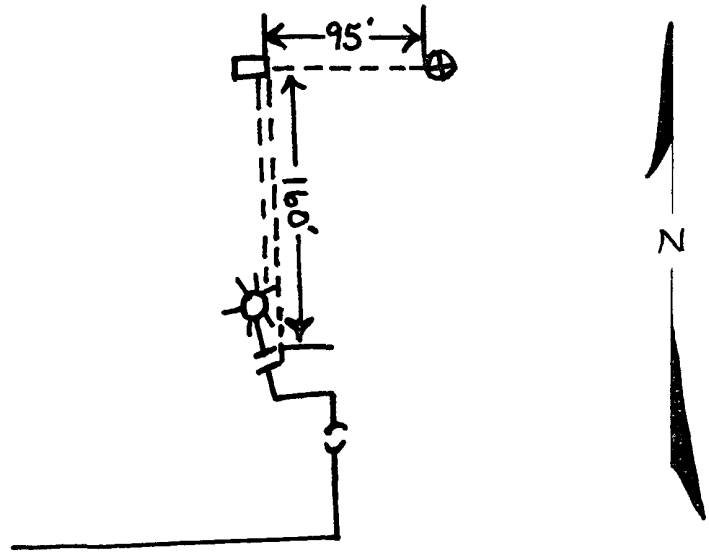
Remarks: Static P/S = -.79 600'E 718 mat union ok Drillers said water @ 185'. Blew water from hole next a.m on 2nd Day of Drilling. Drilled to 485', Logged 485'. Installed 480' of 1" PVC vent pipe with 320' perforated. Slurried 6,300 lbs Bulk Coke Down hole.

Hole Depth = 15' ✓
Extra Cable = 180' ✓
Ditch Cable = 255' ✓
20' meter pole ✓
40-16 ✓
8 hrs Reg. ✓
2 hrs O.T. ✓

All Construction Completed

C. W. Donahue
(Signature)

GROUND BED LAYOUT SKETCH



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PINK — Originator File

Form 22 (Rev. 5-73)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

CPS 1675-A | Sun Ray D #2-R | Story Drilling | RIG NO. 1 | REPORT NO. | DATE 8-28-81 19

LEASE | WELL NO. | CONTRACTOR | RIG NO. | REPORT NO. | DATE

MORNING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	10	OB		
10	185	SS		
185	200	SS w/sh		
200	300	sh		

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO.

STANDS

SIZE

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

Water at 185

logged 485

T.D. 485

DAYLIGHT

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
300	350	SS		
350	390	sh		
390	405	SS		
405	485	sh		

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO.

STANDS

SIZE

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

EVENING

Driller | Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO.

STANDS

SIZE

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher Al Stout Company Supervisor Bill Donohue

EL PASO NATURAL GAS COMPANY

Form 7-354 (Rev 11-77)

Sheet
Date:
By:

Sunray D #2R — NE 21-30-10

WO# 57731-21-50-20

Stat. c/c = .79 — 600'E — 718mo+ — union OK

CPS 1575

Driller sa. cl water @ 185'. Blew water from hole next A.M. on 2nd Day of Drilling. Drilled to 485'. Logged 485'.

MW		gals/mol
16 04	C_1	6 4
30 07	C_2	10 12
44 10	C_3	10 42
58 12	iC_4	12 38
58 12	nC_4	11 93
72 15	iC_5	13 85
72 15	nC_5	13 71
86 18	iC_6	15 50
86 18	C_6	15 57
100 21	iC_7	17 2
100 21	C_7	17 46
114 23	C_8	19 39
28 05	$C_2^=$	9 64
42 08	$C_3^=$	9 67

mP
40-16

MISC MW		gals/mol
32 00	O_2	3 37
28 01	CO	4 19
44 01	CO_2	6 38
64 06	SO_2	5 50
34 08	H_2S	5 17
28 01	N_2	4 16
2 02	H_2	3 38

100		200 .92	300 .90	400 .48	
		.80	.60	.53	
10		10 1.09	10 .90	10 1.59	
		1.46	.99	2.17 ⑤	
20		20 1.08	20 .72	20 2.14	
		1.06	.69	2.25 ④	
30		30 1.05	30 .72	30 2.13	
		1.15	.68	2.20 ③	
40		40 1.25 ⑩	40 .50	40 2.17	
		1.12	.60	2.19 ②	
50		50 .74	50 .70	50 2.38	
		.97	1.02	1.95 ①	
60		60 1.92	60 .99	60 1.66	
		2.21 ⑨	1.13	1.68	
70		70 1.93	70 1.51	70 1.60	
		1.55	1.70 ⑥	1.36	485 TD
80	.71	80 1.27 ⑧	80 1.65	80	
Stat. c water	.70	1.12	1.39 ⑦		
90	.71	90 1.07	90 1.00	90	
	.85	1.08	.84		

volts = 11.8
amps = 19.6
ohms = .60Ω

①	455	3.01	3.70
②	445	3.35	4.07
③	435	3.40	4.07
④	425	3.39	4.47
⑤	415	3.05	4.50
⑥	385	2.03	2.86
⑦	375	2.50	3.50
⑧	280	2.05	3.31
⑨	265	3.54	4.70
⑩	240	1.56	2.16

PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10330 Date 9-21-81

Operator El Paso Natural Gas Well Name Sun Ray #2R CPS 1575 W

Location NE 21-30-10 County San Juan State New Mexico

Field Blanco Formation

Sampled From 185'

Date Sampled 8-28-81 By Bill Donohue

Tbg. Press. Csg. Surface Csg. Press.

	ppm	epm		ppm	epm
Sodium	161	7.0	Chloride	20	0.6
Calcium	568	28.4	Bicarbonate	200	3.3
Magnesium	59	4.9	Sulfate	1,750	36.4
Iron			Carbonate	0	0
H_2S			Hydroxide	0	0

Total Solids Dissolved 2,660

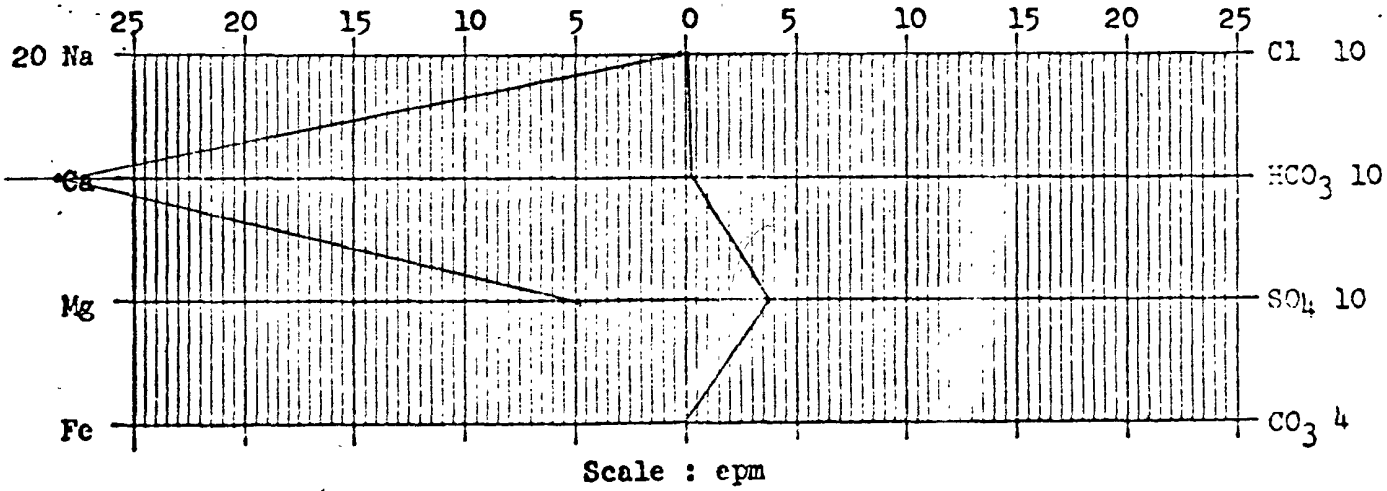
pH 7.4

Sp. Gr. 1.0215 At 60°F

Resistivity 385 ohm-cm at 75 °F

cc: R. A. Ullrich
E. R. Paulek
J. W. McCarthy
J. D. Evans
W. B. Shropshire
D. C. Adams
File

Joe P. Barnett & Dennis P. Bird
Chemist



OCD CATHODIC PROTECTION DEEPWELL GROUNDBED REPORT
DATA SHEET: NORTHWESTERN NEW MEXICO

OPERATOR: COP
FARMINGTON, NM 87401
PHONE: 599-3400

SUBMIT 2 COPIES TO O.C.D. AZTEC OFFICE

LOCATION INFORMATION

API NUMBER: 3004535309

WELL NAME OR PIPLINE SERVED: TRIEB FEDERAL 2N | LEGAL LOCATION: 33 30N 10W | INSTALLATION DATE: 8/1/2013

PPCO. RECTIFIER NO.: FM-366A | ADDITIONAL WELLS:

TYPE OF LEASE: | LEASE NUMBER: NM-03998

GROUND BED INFORMATION

TOTAL DEPTH: 300' | CASING DIAMETER: 8" | TYPE OF CASING: PVC | CASING DEPTH: 120' | CASING CEMENTED ■

TOP ANODE DEPTH: 165' | BOTTOM ANODE DEPTH: 273'

ANODE DEPTHS: 165, 177, 189, 201, 213, 225, 237, 249, 261, 273

AMOUNT OF COKE: 50 BAGS

WATER INFORMATION

WATER DEPTH (1): | WATER DEPTH (2):

GAS DEPTH: — | CEMENT PLUGS: —

RCVD AUG 21 '13
OIL CONS. DIV.
DIST. 3

OTHER INFORMATION

1 VENT PERFORATIONS: 160' | VENT PIPE DEPTH: 300'

REMARKS:

COKE DEPTH 150'

IF ANY OF THE ABOVE INFORMATION IS UNAVAILABLE, PLEASE INDICATE SO. COPIES OF ALL LOGS, INCLUDING DRILLERS LOGS, WATER ANALYSIS, AND WELL BORE SCHEMATICS SHOULD BE SUBMITTED WHEN AVAILABLE. UNPLUGGED UNABANDONED WELLS ARE TO BE INCLUDED.

*- LAND TYPE MAY BE SHOWN: F-FEDERAL; I-INDIAN; S-STATE; P-FEE
IF FEDERAL OR INDIAN, ADD LEASE NUMBER.

Wednesday, Nove

ca

COMPANY:	CONOCO PHILLIPS	DATE:	8/1/2013	CASING:	SCH40 PVC		
COMPANY REP.:	JOHN TAFOYA	DIA. HOLE:	7 7/8	DIAMETER:	8"	RECTIFIER MFG:	
LOCATION:	TRIEB FEDERAL 2N	DEPTH:	300'	CASING DEPTH:	120'	MODEL:	
JOB NO.:	340140497	COKE TYPE:	SW	# OF ANODES:	10	SERIAL #:	
FOREMAN:	RON LUNA	# OF COKE:	50 BAGS	ANODE TYPE:	2284Z		
DRILLER:	DARREL FERRIER	# OF BENTONITE:	0	ANODE LEAD:	HWMPE #8	V-DC:	A -DC:

WELL LOG

DEPTH FT.	DRILLERS LOG - SOIL TYPE	VOLTS	AMPS	COMMENTS / ANODE #	DEPTH FT.	DRILLERS LOG - SOIL TYPE	VOLTS	AMPS	COMMENTS / ANODE #
0	SAND	13.30		CASING	250	SHALE		4.30	#3-249
5	SAND			CASING	255	SHALE		4.20	
10	SAND			CASING	260	SHALE		4.10	#2-261
15	SAND			CASING	265	SHALE		4.40	
20	SAND			CASING	270	SHALE		4.60	
25	SAND			CASING	275	SHALE		4.90	#1-273
30	SAND			CASING	280	SHALE		4.80	
35	SAND			CASING	285	SHALE			
40	SAND			CASING	290	SHALE			
45	SAND			CASING	295	SHALE			
50	SAND			CASING	300	SHALE			
55	SAND			CASING	305				
60	SAND			CASING	310		TD: 290'		
65	SAND			CASING	315		VENT PIPE DEPTH: 300'		
70	SAND			CASING	320				
75	SAND			CASING	325				
80	SAND			CASING	330				
85	SAND			CASING	335				
90	SAND			CASING	340				
95	SAND			CASING	345				
100	SAND			CASING	350				
105	GRAY SANDY SHALE			CASING	355				
110	GRAY SANDY SHALE		2.50	CASING	360				
115	GRAY SANDY SHALE		2.60	CASING	365				
120	GRAY SANDY SHALE		3.10	CASING	370				
125	SHALE		3.40		375				
130	SHALE		3.00		380				
135	SANDSTONE GRAY		2.60		385				
140	SANDSTONE GRAY		2.70		390				
145	SANDSTONE GRAY		2.70		395				
150	SANDSTONE GRAY		2.70		400				
155	SANDSTONE GRAY		3.20		405				
160	SANDSTONE GRAY		2.20		410				
165	SANDSTONE GRAY		2.10	#10-165	415				
170	SANDSTONE GRAY		2.60		420				
175	SANDSTONE GRAY		3.40	#9-177	425				
180	SANDSTONE GRAY		3.80		430				
185	GRAY SANDY SHALE		3.90		435				
190	GRAY SANDY SHALE		3.80	#8-189	440				
195	GRAY SANDY SHALE		4.10		445				
200	GRAY SANDY SHALE		4.00	#7-201	450				
205	GRAY SANDY SHALE		3.60		455				
210	GRAY SANDY SHALE		3.40		460				
215	GRAY SANDY SHALE		3.40	#6-213	465				
220	GRAY SANDY SHALE		3.30		470				
225	GRAY SANDY SHALE		3.90	#5-225	475				
230	GRAY SANDY SHALE		4.00		480				
235	SHALE		4.10	#4-237	485				
240	SHALE		4.00		490				
245	SHALE		3.60		495				

ANODE PLACEMENT

ANODE NO.	ANODE DEPTH	AMPS W/O COKE	AMPS W/ COKE
1	273	4.30	10.90
2	261	4.10	11.00
3	249	4.10	10.90
4	237	4.10	10.50
5	225	3.50	10.20
6	213	3.50	9.40
7	201	4.00	10.80
8	189	3.30	9.00
9	177	3.70	10.30
10	165	2.10	8.00
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

GROUNDBED RESISTANCE

TOTAL VOLTS:	13.30
TOTAL AMPS:	32.70
	0.41 OHMS

SITE ELEVATION: 6055'
WATER LEVEL #1:
WATER LEVEL #2:
COKE LEVEL: 150'
EXTRA CASING USED: 100'
ADDITIONAL COMMENTS:
INJECT 0-300'

PP 7.5.1.24 Effective 11/13/12

Appendix B

Executed C-138 Solid Waste Acceptance Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources 97057-1008
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised 08/01/11

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

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

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

2. Originating Site:
Lateral H-35

3. Location of Material (Street Address, City, State or ULSTR):
Section 29 T30N R1W; 36.784758, -107.9140259 June/July 2019

4. Source and Description of Waste: Hydrocarbon impacted soil/sludge.
Source: Remediation activities associated with a natural gas pipeline leak.
Description: Hydrocarbon/Condensate impacted soil/sludge associated natural gas pipeline release.
Estimated Volume (50) yd^3 / bbls Known Volume (to be entered by the operator at the end of the haul) 1908 (yd^3) / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

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

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

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

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

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long (Thomas Long) 6-22-19, representative for Enterprise Products Operating authorizes Envirotech, Inc. to complete
Generator Signature
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.

5. Transporter: ~~TBD~~ 3D Services, Yucca, IMI, Envirotech, Sawcazea, La Plata
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

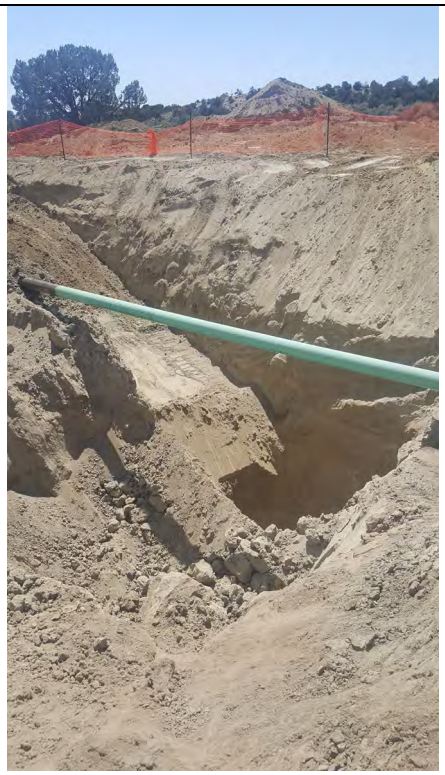
Waste Acceptance Status: ☒ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Greg Crabtree TITLE: Enviro Manager DATE: 6/24/19
SIGNATURE: TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

Appendix C

Photograph Log

Photograph Log
Lateral H-35 Pipeline Release
Enterprise Field Services, LLC

Photograph #1	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 10, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing west-southwest, view of excavation extents in the area of samples SC-1 through SC-3.

Photograph #2	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 11, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing west, view of excavation extents in the area of samples SC-1 through SC-3.

Photograph Log
Lateral H-35 Pipeline Release
Enterprise Field Services, LLC

Photograph #3	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 13, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing south-southwest, view of the excavation extents in the area of samples SC-4 and SC-5

Photograph #4	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 14, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing east, view of the excavation extents in the area of samples SC-6 and SC-7.

Photograph Log
Lateral H-35 Pipeline Release
Enterprise Field Services, LLC

Photograph #5	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 24, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing north, view of the excavation extents in the area of samples SC-8 and SC-9.

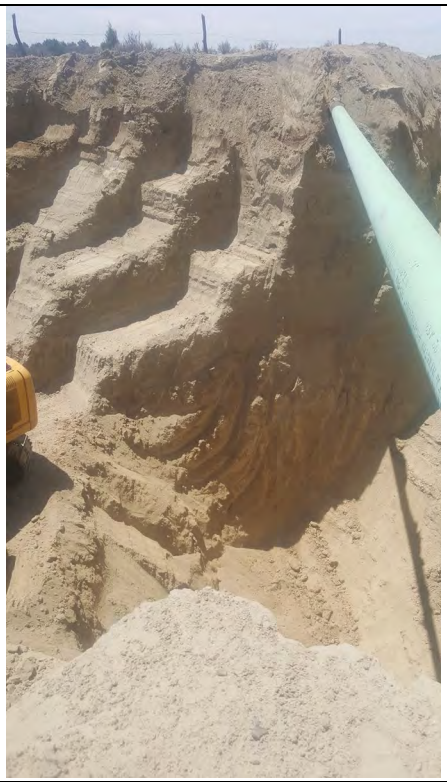
Photograph #6	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 24, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing north-northeast, view of the excavation extents in the area of samples SC-8, SC-9, and SC-10.

Photograph Log
Lateral H-35 Pipeline Release
Enterprise Field Services, LLC

Photograph #7	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 24, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing south-southwest, view of the excavation extents in the area of sample SC-10.

Photograph #8	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 24, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing south-southwest, view of the excavation extents in the area of sample SC-11.

Photograph Log
Lateral H-35 Pipeline Release
Enterprise Field Services, LLC

Photograph #9	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: June 26, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing south-southwest, view of the excavation extents in the area of samples SC-11 and SC-12.

Photograph #10	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: July 1, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing north, view of the excavation extents in the area of samples SC-13, SC-14, and SC-16.

Photograph Log
Lateral H-35 Pipeline Release
Enterprise Field Services, LLC

Photograph #11	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: July 1, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing south, view of the excavation extents in the area of samples SC-14, SC-15, and SC-16.

Photograph #12	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: July 3, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing south, view of the excavation extents in the area of samples SC-17 though SC-21.

Photograph Log
Lateral H-35 Pipeline Release
Enterprise Field Services, LLC

Photograph #13	
Client: Enterprise	
Site Name: Lateral H-35 Pipeline Release	
Date Photo Taken: July 11, 2019	
Release Location: N36.784705, W107.914212 E-29-30N-10W San Juan County, NM	
Photo Taken by: Heather Woods	Description: Facing south, view of the excavation extents in the area of samples SC-22 though SC-24.

Appendix D

Correspondence

From: Smith, Cory, EMNRD
To: Stone, Brian; Long, Thomas; "aadeloye@blm.gov"
Subject: RE: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212
Date: Tuesday, July 9, 2019 1:44:09 PM

Brian,

I don't see SC-21 on the site sketch. Either way I am ok with Enterprise Sampling on Wednesday but please keep in mind the rule requirement going forward, the OCD tries our best to meet operator sampling schedules working together is the best option.

Thanks,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Stone, Brian <bmstone@eprod.com>
Sent: Tuesday, July 9, 2019 10:25 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Long, Thomas <tjlong@eprod.com>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Subject: RE: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

The southeast wall of the pit excavation did not pass.

I've rescheduled the next sample to Thursday 7/11/2019 at 9:00 am, unless you would like a different time.

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Tuesday, July 9, 2019 9:43 AM
To: Stone, Brian <bmstone@eprod.com>; Long, Thomas <tjlong@eprod.com>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Subject: RE: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Brian,

Please keep in mind per 19.15.29.12 NMAC the Operator is supposed to provide the OCD at least 2 Business days' notice prior to the collection of confirmation sampling.

Did the last sampling event fail? I was under the impression while onsite that there were no more expected samples to be collected.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Stone, Brian <bmstone@eprod.com>
Sent: Tuesday, July 9, 2019 8:51 AM
To: Long, Thomas <tjlong@eprod.com>; Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Subject: RE: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Emmanuel,

This email is to notify you that Enterprise will be collecting soil samples for laboratory analysis at the H-35 excavation on Wednesday, July 10, 2019 at 9:00 a.m. If you have any questions, please call or email. We expect to collect 2 samples.

Brian Stone
970 210 2170

From: Stone, Brian <bmstone@eprod.com>
Sent: Tuesday, July 2, 2019 2:11 PM
To: Long, Thomas <tjlong@eprod.com>; 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Emmanuel,

This email is to notify you that Enterprise will be collecting soil samples for laboratory analysis at the H-35 excavation on Wednesday, July 2, 2019 at 9:00 a.m. If you have any questions, please call or email. We expect to collect 3 samples.

Brian Stone

970 210 2170

From: Long, Thomas <tjlong@eprod.com>
Sent: Friday, June 28, 2019 1:10 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: FW: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Emmanuel,

This email is to notify you that Enterprise will be collecting soil samples for laboratory analysis at the H-35 excavation on Monday, July 1, 2019 at 11:00 a.m. If you have any questions, please call or email.

Sincerely,

Tom Long
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Tuesday, June 25, 2019 12:11 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'aadeloye@blm.gov' <aadeloye@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: FW: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Emmanuel,

This email is to notify you that Enterprise will be collecting soil samples for laboratory analysis at the H-35 excavation tomorrow, June 26, 2019 at 11:00 a.m. If you have any questions, please call or email.

Sincerely,

Tom Long
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Friday, June 21, 2019 3:51 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'l1thomas@blm.gov' <l1thomas@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: FW: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Whitney,

This email is to notify you that Enterprise will be collecting soil samples for laboratory analysis at the H-35 excavation Monday, June 24, 2019 at 10:00 a.m. If you have any questions, please call or email.

Sincerely,

Tom Long
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas <tjlong@eprod.com>
Sent: Thursday, June 13, 2019 3:43 PM
To: Cory.Smith@state.nm.us; l1thomas@blm.gov
Cc: Stone, Brian <bmstone@eprod.com>
Subject: Fwd: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Whitney,

This email is to notify you that Enterprise will be collecting soil samples for laboratory analysis at the H-35 excavation tomorrow, June 14, 2019 at 2:00 p.m. If you have any questions, please call or email.

Sincerely,

Tom Long

Begin forwarded message:

> **From:** "Smith, Cory, EMNRD" <Cory.Smith@state.nm.us>
> **Date:** June 4, 2019 at 2:17:51 PM MDT
> **To:** "Long, Thomas" <tjlong@eprod.com>
> **Cc:** "Stone, Brian" <bmstone@eprod.com>, "'l1thomas@blm.gov'" <l1thomas@blm.gov>
> **Subject: RE: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705,**

-107.914212

Tom,

OCD has processed the initial C-141 please see below for the incident# the signed copy will be placed into 3RP-1011 file asap.

Thank,

NCS1915551167 LATERAL H-35 @ FJK1424831933

General Incident Information

Site Name: LATERAL H-35

Well:

Facility: [fJK1424831933] ENTERPRISE SAN JUAN PIPELINE 3R-1011

Operator: [151618] ENTERPRISE FIELD SERVICES L.L.C.

Status: Closure Not Approved

Type: Oil Release

District: Aztec

Severity:

Surface Owner: Federal

County: San Juan (45)

Incident Location: E-29-30N-10W Lot: 0 FNL 0 FEL

Lat/Long: 36.754705,-107.914212 NAD83

Directions:

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Long, Thomas <tjlong@eprod.com>
Sent: Friday, May 24, 2019 6:04 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; 'l1thomas@blm.gov' <l1thomas@blm.gov>

Cc: Stone, Brian <bmstone@eprod.com>
Subject: [EXT] FW: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Whitney,

This email is to notify you that Enterprise has determined this release reportable per NMOCD regulation today due to the volume of impacted subsurface soil. I will keep you informed as to when we will collect soil samples for laboratory analysis. If you have any questions, please call or email.

Sincerely,

Tom Long
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Monday, May 20, 2019 8:41 AM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'l1thomas@blm.gov' <l1thomas@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: Lateral H-35 - UL E Section 29 T30N 10W; 36.784705, -107.914212

Cory/Whitney,

This email is a courtesy notification that Enterprise has a release of natural gas on the Later H-35 pipeline. No fluids were observed on the ground surface. No washes were affected. The pipeline was isolated, depressurized, locked out and tagged out. Enterprise has not yet determined this release reportable per NMOCD regulation. The release is located at UL E Section 29 T30N 10W; 36.784705, -107.914212. I will keep you informed as the reporting status. If you have any questions, please call or email.

Sincerely,

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Enterprise Products

Appendix E

Analytical Laboratory Reports

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

June 13, 2019

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

RE: Enterprise Lateral H 35 OrderNo.: 1906580

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 6/12/2019 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 **1906580**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-1
Project: Enterprise Lateral H 35
Collection Date: 6/10/2019 2:20:00 PM
Lab ID: 1906580-001 **Matrix:** SOIL **Received Date:** 6/12/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/12/2019 1:46:02 PM	45527
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	19	9.5		mg/Kg	1	6/12/2019 10:33:25 AM	45525
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/12/2019 10:33:25 AM	45525
Surr: DNOP	74.5	70-130		%Rec	1	6/12/2019 10:33:25 AM	45525
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	51	21		mg/Kg	5	6/12/2019 10:20:55 AM	G60589
Surr: BFB	160	73.8-119	S	%Rec	5	6/12/2019 10:20:55 AM	G60589
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.10		mg/Kg	5	6/12/2019 10:20:55 AM	B60589
Toluene	0.60	0.21		mg/Kg	5	6/12/2019 10:20:55 AM	B60589
Ethylbenzene	0.40	0.21		mg/Kg	5	6/12/2019 10:20:55 AM	B60589
Xylenes, Total	6.8	0.41		mg/Kg	5	6/12/2019 10:20:55 AM	B60589
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	5	6/12/2019 10:20:55 AM	B60589

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

Qualifiers:

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

Analytical Report
Lab Order **1906580**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-2
Project: Enterprise Lateral H 35
Collection Date: 6/10/2019 2:25:00 PM
Lab ID: 1906580-002 **Matrix:** SOIL **Received Date:** 6/12/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/12/2019 1:58:27 PM	45527
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/12/2019 10:55:25 AM	45525
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/12/2019 10:55:25 AM	45525
Surr: DNOP	85.2	70-130		%Rec	1	6/12/2019 10:55:25 AM	45525
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	6/12/2019 10:44:24 AM	G60589
Surr: BFB	95.4	73.8-119		%Rec	5	6/12/2019 10:44:24 AM	G60589
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.11		mg/Kg	5	6/12/2019 10:44:24 AM	B60589
Toluene	ND	0.23		mg/Kg	5	6/12/2019 10:44:24 AM	B60589
Ethylbenzene	ND	0.23		mg/Kg	5	6/12/2019 10:44:24 AM	B60589
Xylenes, Total	0.50	0.45		mg/Kg	5	6/12/2019 10:44:24 AM	B60589
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	5	6/12/2019 10:44:24 AM	B60589

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

Qualifiers:

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

Analytical Report
Lab Order **1906580**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-3
Project: Enterprise Lateral H 35
Collection Date: 6/11/2019 12:10:00 PM
Lab ID: 1906580-003 **Matrix:** SOIL **Received Date:** 6/12/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	82	60		mg/Kg	20	6/12/2019 2:10:50 PM	45527
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/12/2019 11:17:30 AM	45525
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/12/2019 11:17:30 AM	45525
Surr: DNOP	96.0	70-130		%Rec	1	6/12/2019 11:17:30 AM	45525
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	6/12/2019 11:07:53 AM	G60589
Surr: BFB	95.9	73.8-119		%Rec	5	6/12/2019 11:07:53 AM	G60589
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.11		mg/Kg	5	6/12/2019 11:07:53 AM	B60589
Toluene	ND	0.21		mg/Kg	5	6/12/2019 11:07:53 AM	B60589
Ethylbenzene	ND	0.21		mg/Kg	5	6/12/2019 11:07:53 AM	B60589
Xylenes, Total	ND	0.42		mg/Kg	5	6/12/2019 11:07:53 AM	B60589
Surr: 4-Bromofluorobenzene	99.2	80-120		%Rec	5	6/12/2019 11:07:53 AM	B60589

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906580**

13-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **MB-45527**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45527**	RunNo: **60594**							
Prep Date: **6/12/2019**	Analysis Date: **6/12/2019**	SeqNo: **2051124**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45527**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45527**	RunNo: **60594**							
Prep Date: **6/12/2019**	Analysis Date: **6/12/2019**	SeqNo: **2051125**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906580**

13-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **MB-45525** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **45525** RunNo: **60571**

Prep Date: **6/12/2019** Analysis Date: **6/12/2019** SeqNo: **2049384** 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	8.0		10.00		80.0	70	130			

Sample ID: **LCS-45525** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **45525** RunNo: **60571**

Prep Date: **6/12/2019** Analysis Date: **6/12/2019** SeqNo: **2049809** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.4	63.9	124			
Surr: DNOP	3.6		5.000		72.1	70	130			

Sample ID: **MB-45534** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **45534** RunNo: **60580**

Prep Date: **6/12/2019** Analysis Date: **6/12/2019** SeqNo: **2049863** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		96.8	70	130			

Sample ID: **LCS-45534** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **45534** RunNo: **60580**

Prep Date: **6/12/2019** Analysis Date: **6/12/2019** SeqNo: **2049866** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.9	70	130			

Sample ID: **LCS-45479** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **45479** RunNo: **60580**

Prep Date: **6/10/2019** Analysis Date: **6/12/2019** SeqNo: **2050992** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		98.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906580**

13-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G60589**	RunNo: **60589**
Prep Date:	Analysis Date: **6/12/2019**	SeqNo: **2050516** 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		97.5	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G60589**	RunNo: **60589**
Prep Date:	Analysis Date: **6/12/2019**	SeqNo: **2050519** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.9	80.1	123			
Surr: BFB	1200		1000		115	73.8	119			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906580**

13-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **B60589** RunNo: **60589**

Prep Date: Analysis Date: **6/12/2019** SeqNo: **2050552** 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: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **B60589** RunNo: **60589**

Prep Date: Analysis Date: **6/12/2019** SeqNo: **2050553** 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	98.5	80	120			
Toluene	1.0	0.050	1.000	0	103	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	1.0		1.000		102	80	120			

Qualifiers:

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

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: 1906580 RcptNo: 1

Received By: **Desiree Dominguez** 6/12/2019 8:00:00 AM

Completed By: **Anne Thorne** 6/12/2019 8:47:31 AM

Reviewed By: DAD 6/12/19

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: 10 (6/12/19)
(<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	1.6	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 H-35

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 1 2.1 -0.5= 1.6°C

Cooler Temp (including CF): ~~6.7-0.5=6.2~~ 6/17/19

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. 1906580	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, NO3, NO2, PO4, SO4~~ 300.0 Cl	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)						
6/10/19	1420	Soil	SC-1	(1) 4oz Glass	Non	001	X	X					X									
6/10/19	1425	Soil	SC-2	(1) 4oz Glass	Non	002	X	X					X									
6/11/19	1210	Soil	SC-3	(1) 4oz Glass	Non	003	X	X					X									

Container Type and #: MeOH

Date	Time	Relinquished by	Received by	Via	Date	Time
6/11/19	1804	Heather M. Woods	[signature]		6/11/19	1804
6/11/19	1904	[signature]	[signature]	Courier	6/12/19	8:00

Remarks:
Direct Bill to Enterprise
Supervisor: ME Eddleman
Non-AFE: N42789

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

June 19, 2019

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

RE: Enterprise Lateral H 35 OrderNo.: 1906752

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/14/2019 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 **1906752**
Date Reported: **6/19/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-4
Project: Enterprise Lateral H 35
Collection Date: 6/13/2019 2:50:00 PM
Lab ID: 1906752-001
Matrix: MEOH (SOIL)
Received Date: 6/14/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	6/17/2019 11:24:00 PM	45633
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/18/2019 12:26:44 AM	45594
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/18/2019 12:26:44 AM	45594
Surr: DNOP	86.1	70-130		%Rec	1	6/18/2019 12:26:44 AM	45594
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	6/18/2019 12:44:50 PM	G60728
Surr: BFB	96.0	73.8-119		%Rec	1	6/18/2019 12:44:50 PM	G60728
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	6/18/2019 12:44:50 PM	B60728
Toluene	ND	0.038		mg/Kg	1	6/18/2019 12:44:50 PM	B60728
Ethylbenzene	ND	0.038		mg/Kg	1	6/18/2019 12:44:50 PM	B60728
Xylenes, Total	ND	0.077		mg/Kg	1	6/18/2019 12:44:50 PM	B60728
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	6/18/2019 12:44:50 PM	B60728

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

Qualifiers:

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

Analytical Report
Lab Order **1906752**
Date Reported: **6/19/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-5
Project: Enterprise Lateral H 35
Collection Date: 6/13/2019 2:55:00 PM
Lab ID: 1906752-002 **Matrix:** SOIL **Received Date:** 6/14/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	6/18/2019 12:01:14 AM	45633
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/18/2019 4:24:55 PM	45594
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/18/2019 4:24:55 PM	45594
Surr: DNOP	88.9	70-130		%Rec	1	6/18/2019 4:24:55 PM	45594
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	6/18/2019 1:08:14 PM	G60728
Surr: BFB	108	73.8-119		%Rec	1	6/18/2019 1:08:14 PM	G60728
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	6/18/2019 1:08:14 PM	B60728
Toluene	0.15	0.042		mg/Kg	1	6/18/2019 1:08:14 PM	B60728
Ethylbenzene	0.045	0.042		mg/Kg	1	6/18/2019 1:08:14 PM	B60728
Xylenes, Total	0.63	0.085		mg/Kg	1	6/18/2019 1:08:14 PM	B60728
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	6/18/2019 1:08:14 PM	B60728

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906752**

19-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **MB-45633**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45633**	RunNo: **60701**							
Prep Date: **6/17/2019**	Analysis Date: **6/17/2019**	SeqNo: **2054652**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45633**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45633**	RunNo: **60701**							
Prep Date: **6/17/2019**	Analysis Date: **6/17/2019**	SeqNo: **2054653**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906752**

19-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **LCS-45594** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **45594** RunNo: **60697**

Prep Date: **6/14/2019** Analysis Date: **6/17/2019** SeqNo: **2054871** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.4	63.9	124			
Surr: DNOP	3.8		5.000		75.9	70	130			

Sample ID: **MB-45594** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **45594** RunNo: **60697**

Prep Date: **6/14/2019** Analysis Date: **6/17/2019** SeqNo: **2054872** 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	8.2		10.00		81.9	70	130			

Sample ID: **1906752-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **SC-4** Batch ID: **45594** RunNo: **60697**

Prep Date: **6/14/2019** Analysis Date: **6/18/2019** SeqNo: **2054926** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.5	47.48	0	92.1	57	142			
Surr: DNOP	3.8		4.748		79.1	70	130			

Sample ID: **1906752-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **SC-4** Batch ID: **45594** RunNo: **60697**

Prep Date: **6/14/2019** Analysis Date: **6/18/2019** SeqNo: **2054927** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.3	46.30	0	93.8	57	142	0.676	20	
Surr: DNOP	3.7		4.630		81.0	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906752**

19-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G60728**	RunNo: **60728**
Prep Date:	Analysis Date: **6/18/2019**	SeqNo: **2055379** 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	940		1000		93.7	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G60728**	RunNo: **60728**
Prep Date:	Analysis Date: **6/18/2019**	SeqNo: **2055380** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.6	80.1	123			
Surr: BFB	1100		1000		108	73.8	119			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906752**

19-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B60728**	RunNo: **60728**
Prep Date:	Analysis Date: **6/18/2019**	SeqNo: **2055390** 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: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B60728**	RunNo: **60728**
Prep Date:	Analysis Date: **6/18/2019**	SeqNo: **2055391** 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	97.6	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	103	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Qualifiers:

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

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: **1906752** RcptNo: 1

Received By: **Desiree Dominguez** **6/14/2019 7:55:00 AM** DD

Completed By: **Leah Baca** **6/14/2019 8:19:10 AM** Leah S Baca

Reviewed By: LB 6/14/19

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: DAD 6/14/19

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	5.0	Good	Yes			
2	1.9	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Suite 205
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 2 -Day

Project Name: Enterprise Lateral H-35

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 2 - 5.2 - 0.2 = 5.0°C

Cooler Temp(including CF): 2.1 - 0.2 = 1.9°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. 1906752	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)
6/13/19	1450	Soil	SC-4	(1) 4oz Glass	Non	-001	X	X					X			
6/13/19	1455	Soil	SC-5	(1) 4oz Glass	Non	-002	X	X					X			

NES Hw

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/13/19	1722	Heather M. Woods	Christa Waeta		6/13/19	1722
6/13/19	1826	Christa Waeta		Courier	6/14/19	7:55

Remarks:
Direct Bill to Enterprise
Supervisor: ME Eddleman
Non-AFE: N42789

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

June 18, 2019

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

RE: Enterprise Lateral H 35 OrderNo.: 1906847

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/15/2019 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1906847**
Date Reported: **6/18/2019**

CLIENT: Rule Engineering LLC
Client Sample ID: SC-6
Project: Enterprise Lateral H 35
Collection Date: 6/14/2019 3:00:00 PM
Lab ID: 1906847-001 **Matrix:** MEOH (SOIL) **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	6/17/2019 11:36:43 AM	45618
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/17/2019 12:38:14 PM	45616
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/17/2019 12:38:14 PM	45616
Surr: DNOP	105	70-130		%Rec	1	6/17/2019 12:38:14 PM	45616
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	22		mg/Kg	5	6/17/2019 10:50:10 AM	G60694
Surr: BFB	95.5	73.8-119		%Rec	5	6/17/2019 10:50:10 AM	G60694
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.11		mg/Kg	5	6/17/2019 10:50:10 AM	B60694
Toluene	ND	0.22		mg/Kg	5	6/17/2019 10:50:10 AM	B60694
Ethylbenzene	ND	0.22		mg/Kg	5	6/17/2019 10:50:10 AM	B60694
Xylenes, Total	0.81	0.45		mg/Kg	5	6/17/2019 10:50:10 AM	B60694
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	5	6/17/2019 10:50:10 AM	B60694

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1906847**
Date Reported: **6/18/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-7
Project: Enterprise Lateral H 35
Collection Date: 6/14/2019 3:10:00 PM
Lab ID: 1906847-002 **Matrix:** MEOH (SOIL) **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	64	60		mg/Kg	20	6/17/2019 11:49:07 AM	45618
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/17/2019 1:02:45 PM	45616
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/17/2019 1:02:45 PM	45616
Surr: DNOP	109	70-130		%Rec	1	6/17/2019 1:02:45 PM	45616
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	6/17/2019 11:13:41 AM	G60694
Surr: BFB	93.2	73.8-119		%Rec	5	6/17/2019 11:13:41 AM	G60694
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.10		mg/Kg	5	6/17/2019 11:13:41 AM	B60694
Toluene	ND	0.20		mg/Kg	5	6/17/2019 11:13:41 AM	B60694
Ethylbenzene	ND	0.20		mg/Kg	5	6/17/2019 11:13:41 AM	B60694
Xylenes, Total	ND	0.40		mg/Kg	5	6/17/2019 11:13:41 AM	B60694
Surr: 4-Bromofluorobenzene	98.9	80-120		%Rec	5	6/17/2019 11:13:41 AM	B60694

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906847**
18-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **MB-45618**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45618**	RunNo: **60701**							
Prep Date: **6/17/2019**	Analysis Date: **6/17/2019**	SeqNo: **2054613**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45618**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45618**	RunNo: **60701**							
Prep Date: **6/17/2019**	Analysis Date: **6/17/2019**	SeqNo: **2054614**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906847**
18-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **LCS-45616** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **45616** RunNo: **60687**
Prep Date: **6/17/2019** Analysis Date: **6/17/2019** SeqNo: **2053634** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	108	63.9	124			
Surr: DNOP	5.5		5.000		109	70	130			

Sample ID: **MB-45616** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **45616** RunNo: **60687**
Prep Date: **6/17/2019** Analysis Date: **6/17/2019** SeqNo: **2053635** 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		104	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906847**
18-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G60694**	RunNo: **60694**
Prep Date:	Analysis Date: **6/17/2019**	SeqNo: **2053941** 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		94.6	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G60694**	RunNo: **60694**
Prep Date:	Analysis Date: **6/17/2019**	SeqNo: **2053942** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.6	80.1	123			
Surr: BFB	1100		1000		106	73.8	119			

Sample ID: **MB-45609**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **45609**	RunNo: **60694**
Prep Date: **6/14/2019**	Analysis Date: **6/18/2019**	SeqNo: **2053970** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		95.4	73.8	119			

Sample ID: **LCS-45609**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **45609**	RunNo: **60694**
Prep Date: **6/14/2019**	Analysis Date: **6/18/2019**	SeqNo: **2053971** 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:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906847**

18-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **B60694** RunNo: **60694**

Prep Date: Analysis Date: **6/17/2019** SeqNo: **2053990** 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		99.4	80	120			

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **B60694** RunNo: **60694**

Prep Date: Analysis Date: **6/17/2019** SeqNo: **2053991** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.8	80	120			
Toluene	0.98	0.050	1.000	0	98.4	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.0	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID: **MB-45609** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **45609** RunNo: **60694**

Prep Date: **6/14/2019** Analysis Date: **6/18/2019** SeqNo: **2054019** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: **LCS-45609** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **45609** RunNo: **60694**

Prep Date: **6/14/2019** Analysis Date: **6/18/2019** SeqNo: **2054020** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Qualifiers:

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

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: **1906847** RcptNo: **1**

Received By: **Thom Maybee** **6/15/2019 10:15:00 AM**

Completed By: **Yazmine Garduno** **6/17/2019 7:49:52 AM** Yazmine Garduno

Reviewed By: DAD 6/17/19

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 ☐	

0

# of preserved bottles checked for pH: 6/17/19

(<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	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@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 H-35

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 4.1 + 0.3 = 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. 1906047	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 ch	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6/14/19	1500	Soil	SC-6			-001	X	X					X			
6/14/19	1510	Soil	SC-7			-002	X	X					X			

NFS HW

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/14/19	1729	Heather M. Woods	Mast Wade		6/14/19	1729
6/14/19	1819	Mast Wade			6-15-19	10.15

Remarks:
Direct Bill to Enterprise
Supervisor: ME Eddleman
Non-AFE: N42789

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

June 26, 2019

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

RE: Enterprise Lateral H 35 OrderNo.: 1906D08

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/25/2019 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 **1906D08**
Date Reported: **6/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-8
Project: Enterprise Lateral H 35
Collection Date: 6/24/2019 10:30:00 AM
Lab ID: 1906D08-001
Matrix: MEOH (SOIL)
Received Date: 6/25/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	67	60		mg/Kg	20	6/25/2019 12:05:04 PM	45798
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/25/2019 10:37:09 AM	45791
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/25/2019 10:37:09 AM	45791
Surr: DNOP	83.3	70-130		%Rec	1	6/25/2019 10:37:09 AM	45791
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	6/25/2019 10:15:39 AM	G60920
Surr: BFB	94.4	73.8-119		%Rec	1	6/25/2019 10:15:39 AM	G60920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	6/25/2019 10:15:39 AM	B60920
Toluene	0.036	0.035		mg/Kg	1	6/25/2019 10:15:39 AM	B60920
Ethylbenzene	ND	0.035		mg/Kg	1	6/25/2019 10:15:39 AM	B60920
Xylenes, Total	0.17	0.070		mg/Kg	1	6/25/2019 10:15:39 AM	B60920
Surr: 4-Bromofluorobenzene	93.0	80-120		%Rec	1	6/25/2019 10:15:39 AM	B60920

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

Qualifiers:

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

Analytical Report
Lab Order **1906D08**
Date Reported: **6/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-9
Project: Enterprise Lateral H 35
Collection Date: 6/24/2019 10:33:00 AM
Lab ID: 1906D08-002 **Matrix:** MEOH (SOIL) **Received Date:** 6/25/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/25/2019 12:17:28 PM	45798
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/25/2019 10:59:08 AM	45791
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/25/2019 10:59:08 AM	45791
Surr: DNOP	81.3	70-130		%Rec	1	6/25/2019 10:59:08 AM	45791
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	6/25/2019 10:39:23 AM	G60920
Surr: BFB	96.5	73.8-119		%Rec	1	6/25/2019 10:39:23 AM	G60920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.022		mg/Kg	1	6/25/2019 10:39:23 AM	B60920
Toluene	0.049	0.044		mg/Kg	1	6/25/2019 10:39:23 AM	B60920
Ethylbenzene	ND	0.044		mg/Kg	1	6/25/2019 10:39:23 AM	B60920
Xylenes, Total	0.36	0.087		mg/Kg	1	6/25/2019 10:39:23 AM	B60920
Surr: 4-Bromofluorobenzene	93.2	80-120		%Rec	1	6/25/2019 10:39:23 AM	B60920

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

Qualifiers:

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

Analytical Report
Lab Order **1906D08**
Date Reported: **6/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-10
Project: Enterprise Lateral H 35
Collection Date: 6/24/2019 10:37:00 AM
Lab ID: 1906D08-003
Matrix: MEOH (SOIL)
Received Date: 6/25/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/25/2019 12:29:53 PM	45798
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/25/2019 11:21:07 AM	45791
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/25/2019 11:21:07 AM	45791
Surr: DNOP	73.6	70-130		%Rec	1	6/25/2019 11:21:07 AM	45791
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/25/2019 11:03:05 AM	G60920
Surr: BFB	91.9	73.8-119		%Rec	1	6/25/2019 11:03:05 AM	G60920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	6/25/2019 11:03:05 AM	B60920
Toluene	ND	0.046		mg/Kg	1	6/25/2019 11:03:05 AM	B60920
Ethylbenzene	ND	0.046		mg/Kg	1	6/25/2019 11:03:05 AM	B60920
Xylenes, Total	0.12	0.093		mg/Kg	1	6/25/2019 11:03:05 AM	B60920
Surr: 4-Bromofluorobenzene	92.4	80-120		%Rec	1	6/25/2019 11:03:05 AM	B60920

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

Qualifiers:

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

Analytical Report
Lab Order **1906D08**
Date Reported: **6/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-11
Project: Enterprise Lateral H 35
Collection Date: 6/24/2019 10:41:00 AM
Lab ID: 1906D08-004
Matrix: MEOH (SOIL)
Received Date: 6/25/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	6/25/2019 12:42:17 PM	45798
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/25/2019 11:43:11 AM	45791
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/25/2019 11:43:11 AM	45791
Surr: DNOP	78.2	70-130		%Rec	1	6/25/2019 11:43:11 AM	45791
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	5.7	3.5		mg/Kg	1	6/25/2019 11:26:29 AM	G60920
Surr: BFB	114	73.8-119		%Rec	1	6/25/2019 11:26:29 AM	G60920
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	0.020	0.018		mg/Kg	1	6/25/2019 11:26:29 AM	B60920
Toluene	0.39	0.035		mg/Kg	1	6/25/2019 11:26:29 AM	B60920
Ethylbenzene	0.099	0.035		mg/Kg	1	6/25/2019 11:26:29 AM	B60920
Xylenes, Total	1.1	0.070		mg/Kg	1	6/25/2019 11:26:29 AM	B60920
Surr: 4-Bromofluorobenzene	99.9	80-120		%Rec	1	6/25/2019 11:26:29 AM	B60920

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906D08**
26-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **MB-45798**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45798**	RunNo: **60944**							
Prep Date: **6/25/2019**	Analysis Date: **6/25/2019**	SeqNo: **2063167**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45798**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45798**	RunNo: **60944**							
Prep Date: **6/25/2019**	Analysis Date: **6/25/2019**	SeqNo: **2063168**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906D08**

26-Jun-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **LCS-45792**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **45792**	RunNo: **60884**							
Prep Date: **6/25/2019**	Analysis Date: **6/25/2019**	SeqNo: **2061792**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		99.7	70	130			

Sample ID: **MB-45792**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **45792**	RunNo: **60884**							
Prep Date: **6/25/2019**	Analysis Date: **6/25/2019**	SeqNo: **2061793**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		96.8	70	130			

Sample ID: **MB-45791**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **45791**	RunNo: **60876**							
Prep Date: **6/25/2019**	Analysis Date: **6/25/2019**	SeqNo: **2061800**	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	9.2		10.00		91.7	70	130			

Sample ID: **LCS-45791**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **45791**	RunNo: **60876**							
Prep Date: **6/25/2019**	Analysis Date: **6/25/2019**	SeqNo: **2061801**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.6	63.9	124			
Surr: DNOP	4.3		5.000		85.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906D08**
26-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **G60920**	RunNo: **60920**							
Prep Date:	Analysis Date: **6/25/2019**	SeqNo: **2062557**	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	1100		1000		107	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **G60920**	RunNo: **60920**							
Prep Date:	Analysis Date: **6/25/2019**	SeqNo: **2062558**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.1	80.1	123			
Surr: BFB	1000		1000		101	73.8	119			

Sample ID: **1906D08-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **SC-8**	Batch ID: **G60920**	RunNo: **60920**							
Prep Date:	Analysis Date: **6/25/2019**	SeqNo: **2062559**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.5	17.48	0	90.4	69.1	142			
Surr: BFB	740		699.3		105	73.8	119			

Sample ID: **1906D08-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **SC-8**	Batch ID: **G60920**	RunNo: **60920**							
Prep Date:	Analysis Date: **6/25/2019**	SeqNo: **2062560**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	3.5	17.48	0	113	69.1	142	22.3	20	R
Surr: BFB	770		699.3		111	73.8	119	0	0	

Sample ID: **MB-45787**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **45787**	RunNo: **60920**							
Prep Date: **6/24/2019**	Analysis Date: **6/25/2019**	SeqNo: **2062565**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		92.0	73.8	119			

Sample ID: **LCS-45787**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **45787**	RunNo: **60920**							
Prep Date: **6/24/2019**	Analysis Date: **6/25/2019**	SeqNo: **2062566**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	980		1000		98.0	73.8	119			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906D08**
26-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **B60920** RunNo: **60920**
Prep Date: Analysis Date: **6/25/2019** SeqNo: **2062587** 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	1.1		1.000		113	80	120			

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **B60920** RunNo: **60920**
Prep Date: Analysis Date: **6/25/2019** SeqNo: **2062588** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.5	80	120			
Toluene	1.0	0.050	1.000	0	99.9	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.5	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		91.9	80	120			

Sample ID: **1906D08-002AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-9** Batch ID: **B60920** RunNo: **60920**
Prep Date: Analysis Date: **6/25/2019** SeqNo: **2062589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.022	0.8718	0.01125	97.8	63.9	127			
Toluene	0.94	0.044	0.8718	0.04926	102	69.9	131			
Ethylbenzene	0.93	0.044	0.8718	0.02746	103	71	132			
Xylenes, Total	3.1	0.087	2.616	0.3568	105	71.8	131			
Surr: 4-Bromofluorobenzene	0.82		0.8718		93.7	80	120			

Sample ID: **1906D08-002AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-9** Batch ID: **B60920** RunNo: **60920**
Prep Date: Analysis Date: **6/25/2019** SeqNo: **2062590** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.022	0.8718	0.01125	102	63.9	127	4.20	20	
Toluene	0.97	0.044	0.8718	0.04926	106	69.9	131	3.16	20	
Ethylbenzene	0.95	0.044	0.8718	0.02746	106	71	132	2.37	20	
Xylenes, Total	3.2	0.087	2.616	0.3568	107	71.8	131	1.85	20	
Surr: 4-Bromofluorobenzene	0.82		0.8718		94.1	80	120	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906D08**
26-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **MB-45787** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **45787** RunNo: **60920**
Prep Date: **6/24/2019** Analysis Date: **6/25/2019** SeqNo: **2062591** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.97		1.000		97.4	80	120			

Sample ID: **LCS-45787** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **45787** RunNo: **60920**
Prep Date: **6/24/2019** Analysis Date: **6/25/2019** SeqNo: **2062592** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		93.8	80	120			

Qualifiers:

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

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: **1906D08** RcptNo: **1**

Received By: **Desiree Dominguez** **6/25/2019 8:15:00 AM** DD

Completed By: **Erin Melendrez** **6/25/2019 8:53:46 AM**

Reviewed By: ENM 6/25/19

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 ☐	

-0 6/25/19

# 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	1.4	Good	Yes			
2	5.8	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 H-35

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp (including CF): 0.9+0.5=1.4°C, 5.3+0.5=5.8°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. 1906D08	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	(C) F, Br, NO_3, NO_2, PO_4, SO_4 300.0 CL	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6/24/19	1030	Soil	SC-8	(1) 4oz Glass	Non	-001	X	X					X			
6/24/19	1033	Soil	SC-9	"	"	-002	X	X					X			
6/24/19	1037	Soil	SC-10	"	"	-003	X	X					X			
6/24/19	1041	Soil	SC-11	"	"	-004	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/24/19	1854	Heath Woods	Christa Waelte		6/24/19	1854
6/24/19	1910	Christa Waelte		Courier	6/25/19	8:15

Remarks:
Direct Bill to Enterprise
Supervisor: ME Eddleman
Non-AFE: N42789

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

June 28, 2019

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

RE: Enterprise Lateral H35 OrderNo.: 1906E89

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/27/2019 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 **1906E89**
Date Reported: **6/28/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-12
Project: Enterprise Lateral H35
Collection Date: 6/26/2019 10:36:00 AM
Lab ID: 1906E89-001 **Matrix:** SOIL **Received Date:** 6/27/2019 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/27/2019 2:33:20 PM	45861
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/27/2019 12:33:45 PM	45859
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/27/2019 12:33:45 PM	45859
Surr: DNOP	84.2	70-130		%Rec	1	6/27/2019 12:33:45 PM	45859
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	6/27/2019 2:56:24 PM	G60991
Surr: BFB	98.6	73.8-119		%Rec	1	6/27/2019 2:56:24 PM	G60991
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	6/27/2019 2:56:24 PM	B60991
Toluene	0.075	0.034		mg/Kg	1	6/27/2019 2:56:24 PM	B60991
Ethylbenzene	ND	0.034		mg/Kg	1	6/27/2019 2:56:24 PM	B60991
Xylenes, Total	0.38	0.069		mg/Kg	1	6/27/2019 2:56:24 PM	B60991
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	6/27/2019 2:56:24 PM	B60991

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E89**
28-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H35

Sample ID: **MB-45861**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45861**	RunNo: **60990**							
Prep Date: **6/27/2019**	Analysis Date: **6/27/2019**	SeqNo: **2065483**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45861**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45861**	RunNo: **60990**							
Prep Date: **6/27/2019**	Analysis Date: **6/27/2019**	SeqNo: **2065484**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.3	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E89**
28-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H35

Sample ID: **LCS-45859** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **45859** RunNo: **60979**
Prep Date: **6/27/2019** Analysis Date: **6/27/2019** SeqNo: **2064514** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	111	63.9	124			
Surr: DNOP	3.8		5.000		75.1	70	130			

Sample ID: **MB-45859** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **45859** RunNo: **60979**
Prep Date: **6/27/2019** Analysis Date: **6/27/2019** SeqNo: **2064515** 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	7.8		10.00		77.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E89**
28-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G60991**	RunNo: **60991**
Prep Date:	Analysis Date: **6/27/2019**	SeqNo: **2065164** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	870		1000		87.2	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G60991**	RunNo: **60991**
Prep Date:	Analysis Date: **6/27/2019**	SeqNo: **2065165** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.0	80.1	123			
Surr: BFB	1000		1000		105	73.8	119			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906E89**
28-Jun-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H35

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **B60991** RunNo: **60991**
Prep Date: Analysis Date: **6/27/2019** SeqNo: **2065195** 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	0.93		1.000		93.1	80	120			

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **B60991** RunNo: **60991**
Prep Date: Analysis Date: **6/27/2019** SeqNo: **2065196** 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	99.5	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	105	80	120			
Xylenes, Total	3.1	0.10	3.000	0	105	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.3	80	120			

Qualifiers:

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

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: 1906E89 RcptNo: 1

Received By: **Anne Thorne** 6/27/2019 8:25:00 AM

Completed By: **Anne Thorne** 6/27/2019 9:23:13 AM

Reviewed By: DAD 6/27/19

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: _____
AF 6/27/19

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	2.6	Good	Yes			
2	0.6	Good	Yes			
3	0.8	Good	Yes			
4	5.7	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 H-35

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 4 2.4+0.2 = 2.6 (CF)

Cooler Temp (including CF): 0.4+0.2 = 0.6; 0.6+0.2 = 0.8; 5.5+0.2 = 5.7

A-06/27/19 MCH/KJ

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 Cl)	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)						
6/26/19	1036	Soil	SC-12	(1) 4oz Glass	Non	1906E89-001	X	X					X									

Date	Time	Relinquished by	Received by	Via	Date	Time
6/26/19	1655	Heather M. Woods	Christie Walters		6/26/19	1655
6/26/19	1840	Christie Walters	[illegible signature]		06/27/19	0825

Remarks: Direct Bill to Enterprise
Non-AFE: N42789
Supervisor: ME Eddleman

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

July 03, 2019

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

RE: Enterprise Lateral H 35 OrderNo.: 1907075

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/2/2019 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 **1907075**
Date Reported: **7/3/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-13
Project: Enterprise Lateral H 35
Collection Date: 7/1/2019 2:30:00 PM
Lab ID: 1907075-001 **Matrix:** SOIL **Received Date:** 7/2/2019 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	7/2/2019 11:04:54 AM	45959
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	7/2/2019 9:48:04 AM	45953
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/2/2019 9:48:04 AM	45953
Surr: DNOP	95.3	70-130		%Rec	1	7/2/2019 9:48:04 AM	45953
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	7/2/2019 9:41:35 AM	A61097
Surr: BFB	90.1	73.8-119		%Rec	5	7/2/2019 9:41:35 AM	A61097
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.092		mg/Kg	5	7/2/2019 9:41:35 AM	B61097
Toluene	ND	0.18		mg/Kg	5	7/2/2019 9:41:35 AM	B61097
Ethylbenzene	ND	0.18		mg/Kg	5	7/2/2019 9:41:35 AM	B61097
Xylenes, Total	0.51	0.37		mg/Kg	5	7/2/2019 9:41:35 AM	B61097
Surr: 4-Bromofluorobenzene	93.3	80-120		%Rec	5	7/2/2019 9:41:35 AM	B61097

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

Qualifiers:

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

Analytical Report
Lab Order **1907075**
Date Reported: **7/3/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-14
Project: Enterprise Lateral H 35
Collection Date: 7/1/2019 2:10:00 PM
Lab ID: 1907075-002 **Matrix:** SOIL **Received Date:** 7/2/2019 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	7/2/2019 11:17:19 AM	45959
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/2/2019 10:10:06 AM	45953
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/2/2019 10:10:06 AM	45953
Surr: DNOP	86.4	70-130		%Rec	1	7/2/2019 10:10:06 AM	45953
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	7/2/2019 10:04:57 AM	A61097
Surr: BFB	89.4	73.8-119		%Rec	5	7/2/2019 10:04:57 AM	A61097
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.096		mg/Kg	5	7/2/2019 10:04:57 AM	B61097
Toluene	ND	0.19		mg/Kg	5	7/2/2019 10:04:57 AM	B61097
Ethylbenzene	ND	0.19		mg/Kg	5	7/2/2019 10:04:57 AM	B61097
Xylenes, Total	ND	0.38		mg/Kg	5	7/2/2019 10:04:57 AM	B61097
Surr: 4-Bromofluorobenzene	92.9	80-120		%Rec	5	7/2/2019 10:04:57 AM	B61097

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

Qualifiers:

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

Analytical Report
Lab Order **1907075**
Date Reported: **7/3/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-15
Project: Enterprise Lateral H 35
Collection Date: 7/1/2019 2:20:00 PM
Lab ID: 1907075-003 **Matrix:** SOIL **Received Date:** 7/2/2019 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	7/2/2019 11:29:43 AM	45959
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/2/2019 1:49:07 PM	45953
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/2/2019 1:49:07 PM	45953
Surr: DNOP	82.3	70-130		%Rec	1	7/2/2019 1:49:07 PM	45953
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	7/2/2019 10:28:22 AM	A61097
Surr: BFB	93.4	73.8-119		%Rec	5	7/2/2019 10:28:22 AM	A61097
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.096		mg/Kg	5	7/2/2019 10:28:22 AM	B61097
Toluene	ND	0.19		mg/Kg	5	7/2/2019 10:28:22 AM	B61097
Ethylbenzene	ND	0.19		mg/Kg	5	7/2/2019 10:28:22 AM	B61097
Xylenes, Total	ND	0.39		mg/Kg	5	7/2/2019 10:28:22 AM	B61097
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	5	7/2/2019 10:28:22 AM	B61097

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

Qualifiers:

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

Analytical Report
Lab Order **1907075**
Date Reported: **7/3/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-16
Project: Enterprise Lateral H 35
Collection Date: 7/1/2019 2:00:00 PM
Lab ID: 1907075-004 **Matrix:** SOIL **Received Date:** 7/2/2019 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	7/2/2019 11:42:07 AM	45959
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/2/2019 2:11:44 PM	45953
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/2/2019 2:11:44 PM	45953
Surr: DNOP	75.8	70-130		%Rec	1	7/2/2019 2:11:44 PM	45953
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	7/2/2019 10:51:52 AM	A61097
Surr: BFB	91.9	73.8-119		%Rec	5	7/2/2019 10:51:52 AM	A61097
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.10		mg/Kg	5	7/2/2019 10:51:52 AM	B61097
Toluene	ND	0.20		mg/Kg	5	7/2/2019 10:51:52 AM	B61097
Ethylbenzene	ND	0.20		mg/Kg	5	7/2/2019 10:51:52 AM	B61097
Xylenes, Total	ND	0.40		mg/Kg	5	7/2/2019 10:51:52 AM	B61097
Surr: 4-Bromofluorobenzene	96.3	80-120		%Rec	5	7/2/2019 10:51:52 AM	B61097

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907075**
03-Jul-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **MB-45959**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45959**	RunNo: **61093**							
Prep Date: **7/2/2019**	Analysis Date: **7/2/2019**	SeqNo: **2071403**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45959**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45959**	RunNo: **61093**							
Prep Date: **7/2/2019**	Analysis Date: **7/2/2019**	SeqNo: **2071404**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907075**
03-Jul-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **LCS-45953** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **45953** RunNo: **61081**
Prep Date: **7/2/2019** Analysis Date: **7/2/2019** SeqNo: **2069893** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	101	63.9	124			
Surr: DNOP	4.9		5.000		97.5	70	130			

Sample ID: **MB-45953** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **45953** RunNo: **61081**
Prep Date: **7/2/2019** Analysis Date: **7/2/2019** SeqNo: **2069894** 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	9.8		10.00		98.3	70	130			

Sample ID: **1907075-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-13** Batch ID: **45953** RunNo: **61081**
Prep Date: **7/2/2019** Analysis Date: **7/2/2019** SeqNo: **2070351** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.7	48.69	1.894	96.9	57	142			
Surr: DNOP	3.9		4.869		80.4	70	130			

Sample ID: **1907075-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-13** Batch ID: **45953** RunNo: **61081**
Prep Date: **7/2/2019** Analysis Date: **7/2/2019** SeqNo: **2071341** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	9.9	49.31	1.894	108	57	142	11.5	20	
Surr: DNOP	3.9		4.931		80.0	70	130	0	0	

Sample ID: **1907075-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-13** Batch ID: **45953** RunNo: **61081**
Prep Date: **7/2/2019** Analysis Date: **7/2/2019** SeqNo: **2071598** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.9	49.31	1.894	98.7	57	142	12.7	20	
Surr: DNOP	2.6		4.931		52.7	70	130	0	0	S

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907075**
03-Jul-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **A61097**	RunNo: **61097**
Prep Date:	Analysis Date: **7/2/2019**	SeqNo: **2070679** 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	960		1000		95.7	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **A61097**	RunNo: **61097**
Prep Date:	Analysis Date: **7/2/2019**	SeqNo: **2070680** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.6	80.1	123			
Surr: BFB	1000		1000		101	73.8	119			

Sample ID: **1907075-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-13**	Batch ID: **A61097**	RunNo: **61097**
Prep Date:	Analysis Date: **7/2/2019**	SeqNo: **2070681** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	87	18	92.46	0	94.5	69.1	142			
Surr: BFB	4000		3698		107	73.8	119			

Sample ID: **1907075-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-13**	Batch ID: **A61097**	RunNo: **61097**
Prep Date:	Analysis Date: **7/2/2019**	SeqNo: **2070682** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	90	18	92.46	0	97.0	69.1	142	2.55	20	
Surr: BFB	4200		3698		115	73.8	119	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907075**
03-Jul-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **B61097** RunNo: **61097**
Prep Date: Analysis Date: **7/2/2019** SeqNo: **2070692** 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		102	80	120			

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **B61097** RunNo: **61097**
Prep Date: Analysis Date: **7/2/2019** SeqNo: **2070696** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.0	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.3	80	120			

Sample ID: **1907075-002AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-14** Batch ID: **B61097** RunNo: **61097**
Prep Date: Analysis Date: **7/2/2019** SeqNo: **2070697** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.0	0.096	3.831	0	104	63.9	127			
Toluene	4.1	0.19	3.831	0.04828	107	69.9	131			
Ethylbenzene	4.1	0.19	3.831	0.04483	106	71	132			
Xylenes, Total	13	0.38	11.49	0.1954	108	71.8	131			
Surr: 4-Bromofluorobenzene	3.9		3.831		101	80	120			

Sample ID: **1907075-002AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-14** Batch ID: **B61097** RunNo: **61097**
Prep Date: Analysis Date: **7/2/2019** SeqNo: **2070698** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.9	0.096	3.831	0	101	63.9	127	2.94	20	
Toluene	4.0	0.19	3.831	0.04828	102	69.9	131	4.08	20	
Ethylbenzene	4.0	0.19	3.831	0.04483	103	71	132	2.55	20	
Xylenes, Total	12	0.38	11.49	0.1954	105	71.8	131	3.05	20	
Surr: 4-Bromofluorobenzene	3.9		3.831		101	80	120	0	0	

Qualifiers:

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

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: 1907075 RcptNo: 1

Received By: Isaiah Ortiz 7/2/2019 7:15:00 AM I-OL

Completed By: Anne Thorne 7/2/2019 7:46:23 AM Anne Thorne

Reviewed By: JC 7.2.19

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: _____ 7/2/19
(<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	2.8	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
tjiong@eprod.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name:
Enterprise Lateral H-35

Project #:

Project Manager:
Heather Woods

Sampler: Heather Woods
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.8 °C (c) 2.8 °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 Request ID	Container Type and #	Preservative Type	HEAL No. 1907075	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4) 300.0	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
7/1/19	1430	Soil	SC-13	(1) 4oz Glass	—	001	X		X					X								
7/1/19	1410	Soil	SC-14	(1) 4oz Glass	—	002	X		X					X								
7/1/19	1420	Soil	SC-15	(1) 4oz Glass	—	003	X		X					X								
7/1/19	1400	Soil	SC-16	(1) 4oz Glass	—	004	X		X					X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/1/19	1532	Heath M-Woods		7/1/19	1532
7/1/19	1820		courier	7/2/19	0705

Remarks:
Direct Bill to Enterprise
Non-AFE: N42789
Supervisor: ME Eddleman

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

July 10, 2019

Heather Woods

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

RE: Enterprise Lateral H 35 OrderNo.: 1907225

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/4/2019 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1907225**
Date Reported: **7/10/2019**

CLIENT: Rule Engineering LLC
Client Sample ID: SC-17
Project: Enterprise Lateral H 35
Collection Date: 7/3/2019 9:15:00 AM
Lab ID: 1907225-001 **Matrix:** SOIL **Received Date:** 7/4/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	180	60		mg/Kg	20	7/5/2019 12:07:29 PM	46021
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/5/2019 9:49:29 AM	46018
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/5/2019 9:49:29 AM	46018
Surr: DNOP	107	70-130		%Rec	1	7/5/2019 9:49:29 AM	46018
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	7/5/2019 9:41:13 AM	G61171
Surr: BFB	108	73.8-119		%Rec	1	7/5/2019 9:41:13 AM	G61171
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.022		mg/Kg	1	7/5/2019 9:41:13 AM	B61171
Toluene	ND	0.044		mg/Kg	1	7/5/2019 9:41:13 AM	B61171
Ethylbenzene	ND	0.044		mg/Kg	1	7/5/2019 9:41:13 AM	B61171
Xylenes, Total	0.17	0.087		mg/Kg	1	7/5/2019 9:41:13 AM	B61171
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	7/5/2019 9:41:13 AM	B61171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1907225**
Date Reported: **7/10/2019**

CLIENT: Rule Engineering LLC
Client Sample ID: SC-18
Project: Enterprise Lateral H 35
Collection Date: 7/3/2019 9:20:00 AM
Lab ID: 1907225-002 **Matrix:** SOIL **Received Date:** 7/4/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	7/5/2019 12:19:54 PM	46021
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	7/5/2019 10:13:46 AM	46018
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/5/2019 10:13:46 AM	46018
Surr: DNOP	100	70-130		%Rec	1	7/5/2019 10:13:46 AM	46018
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	7/5/2019 10:03:51 AM	G61171
Surr: BFB	100	73.8-119		%Rec	1	7/5/2019 10:03:51 AM	G61171
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	7/5/2019 10:03:51 AM	B61171
Toluene	ND	0.042		mg/Kg	1	7/5/2019 10:03:51 AM	B61171
Ethylbenzene	ND	0.042		mg/Kg	1	7/5/2019 10:03:51 AM	B61171
Xylenes, Total	ND	0.084		mg/Kg	1	7/5/2019 10:03:51 AM	B61171
Surr: 4-Bromofluorobenzene	93.2	80-120		%Rec	1	7/5/2019 10:03:51 AM	B61171

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

Qualifiers:

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

Analytical Report
Lab Order **1907225**
Date Reported: **7/10/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-19
Project: Enterprise Lateral H 35
Collection Date: 7/3/2019 9:30:00 AM
Lab ID: 1907225-003 **Matrix:** SOIL **Received Date:** 7/4/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	210	60		mg/Kg	20	7/5/2019 12:32:18 PM	46021
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/5/2019 10:37:59 AM	46018
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/5/2019 10:37:59 AM	46018
Surr: DNOP	103	70-130		%Rec	1	7/5/2019 10:37:59 AM	46018
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	7/5/2019 10:26:29 AM	G61171
Surr: BFB	110	73.8-119		%Rec	1	7/5/2019 10:26:29 AM	G61171
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.022		mg/Kg	1	7/5/2019 10:26:29 AM	B61171
Toluene	0.10	0.044		mg/Kg	1	7/5/2019 10:26:29 AM	B61171
Ethylbenzene	ND	0.044		mg/Kg	1	7/5/2019 10:26:29 AM	B61171
Xylenes, Total	0.35	0.088		mg/Kg	1	7/5/2019 10:26:29 AM	B61171
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	7/5/2019 10:26:29 AM	B61171

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

Qualifiers:

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

Analytical Report
Lab Order **1907225**
Date Reported: **7/10/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-20
Project: Enterprise Lateral H 35
Collection Date: 7/3/2019 9:40:00 AM
Lab ID: 1907225-004 **Matrix:** SOIL **Received Date:** 7/4/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	140	60		mg/Kg	20	7/5/2019 1:09:32 PM	46021
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/5/2019 11:02:21 AM	46018
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/5/2019 11:02:21 AM	46018
Surr: DNOP	106	70-130		%Rec	1	7/5/2019 11:02:21 AM	46018
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/5/2019 10:49:06 AM	G61171
Surr: BFB	105	73.8-119		%Rec	1	7/5/2019 10:49:06 AM	G61171
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	7/5/2019 10:49:06 AM	B61171
Toluene	0.055	0.047		mg/Kg	1	7/5/2019 10:49:06 AM	B61171
Ethylbenzene	ND	0.047		mg/Kg	1	7/5/2019 10:49:06 AM	B61171
Xylenes, Total	0.32	0.095		mg/Kg	1	7/5/2019 10:49:06 AM	B61171
Surr: 4-Bromofluorobenzene	95.3	80-120		%Rec	1	7/5/2019 10:49:06 AM	B61171

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

Qualifiers:

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

Analytical Report
Lab Order **1907225**
Date Reported: **7/10/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-21
Project: Enterprise Lateral H 35
Collection Date: 7/3/2019 9:50:00 AM
Lab ID: 1907225-005 **Matrix:** SOIL **Received Date:** 7/4/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**smb**
Chloride	210	60		mg/Kg	20	7/5/2019 1:21:57 PM	46021
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	110	9.8		mg/Kg	1	7/5/2019 11:26:37 AM	46018
Motor Oil Range Organics (MRO)	110	49		mg/Kg	1	7/5/2019 11:26:37 AM	46018
Surr: DNOP	106	70-130		%Rec	1	7/5/2019 11:26:37 AM	46018
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	7/5/2019 11:11:44 AM	G61171
Surr: BFB	102	73.8-119		%Rec	1	7/5/2019 11:11:44 AM	G61171
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	7/5/2019 11:11:44 AM	B61171
Toluene	ND	0.045		mg/Kg	1	7/5/2019 11:11:44 AM	B61171
Ethylbenzene	ND	0.045		mg/Kg	1	7/5/2019 11:11:44 AM	B61171
Xylenes, Total	ND	0.090		mg/Kg	1	7/5/2019 11:11:44 AM	B61171
Surr: 4-Bromofluorobenzene	95.2	80-120		%Rec	1	7/5/2019 11:11:44 AM	B61171

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907225**

10-Jul-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **MB-46021**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **46021**	RunNo: **61175**
Prep Date: **7/5/2019**	Analysis Date: **7/5/2019**	SeqNo: **2074356** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46021**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **46021**	RunNo: **61175**
Prep Date: **7/5/2019**	Analysis Date: **7/5/2019**	SeqNo: **2074357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907225**

10-Jul-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **LCS-46018** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **46018** RunNo: **61157**

Prep Date: **7/5/2019** Analysis Date: **7/5/2019** SeqNo: **2073055** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	63.9	124			
Surr: DNOP	4.8		5.000		95.8	70	130			

Sample ID: **MB-46018** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **46018** RunNo: **61157**

Prep Date: **7/5/2019** Analysis Date: **7/5/2019** SeqNo: **2073056** 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	9.0		10.00		89.8	70	130			

Sample ID: **1907225-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **SC-17** Batch ID: **46018** RunNo: **61160**

Prep Date: **7/5/2019** Analysis Date: **7/5/2019** SeqNo: **2074828** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	9.9	49.31	5.221	100	57	142			
Surr: DNOP	5.4		4.931		109	70	130			

Sample ID: **1907225-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **SC-17** Batch ID: **46018** RunNo: **61160**

Prep Date: **7/5/2019** Analysis Date: **7/5/2019** SeqNo: **2074829** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.9	49.41	5.221	96.4	57	142	3.39	20	
Surr: DNOP	5.2		4.941		106	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907225**

10-Jul-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073623** 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		104	73.8	119			

Sample ID: **1907225-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-17**	Batch ID: **G61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073624** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	69.1	142			
Surr: BFB	1200		1000		124	73.8	119			S

Sample ID: **1907225-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-17**	Batch ID: **G61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073625** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	36	5.0	25.00	0	142	69.1	142	23.5	20	RS
Surr: BFB	1300		1000		127	73.8	119	0	0	S

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.0	80.1	123			
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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907225**

10-Jul-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073637** 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	0.97		1.000		97.2	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073638** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.8	80	120			
Toluene	0.94	0.050	1.000	0	93.6	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: **1907225-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-18**	Batch ID: **B61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073639** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.5	63.9	127			
Toluene	1.2	0.050	1.000	0	118	69.9	131			
Ethylbenzene	1.2	0.050	1.000	0	116	71	132			
Xylenes, Total	3.4	0.10	3.000	0.02538	113	71.8	131			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID: **1907225-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-18**	Batch ID: **B61171**	RunNo: **61171**
Prep Date:	Analysis Date: **7/5/2019**	SeqNo: **2073640** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	112	63.9	127	25.8	20	R
Toluene	1.2	0.050	1.000	0	116	69.9	131	0.951	20	
Ethylbenzene	1.2	0.050	1.000	0	116	71	132	0.0724	20	
Xylenes, Total	3.4	0.10	3.000	0.02538	114	71.8	131	0.144	20	
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120	0	0	

Qualifiers:

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

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: 1907225 RcptNo: 1

Received By: **Andy Freeman** 7/4/2019 8:05:00 AM

Completed By: **Anne Thorne** 7/5/2019 7:34:13 AM

Reviewed By: DAD 7/5/19

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: _____

7/05/19

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	3.3	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

QA/QC Package: bmstone@eprod.com

☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name: Enterprise Lateral H-35

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.3 °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 Request ID	Container Type and # (07/05/19 mcoff Ext)	Preservative Type	HEAL No. 1907225	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4) 300.0	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
7/3/19	0915	Soil	SC-17	(1) 4oz Glass	—	201	X		X					X								
7/3/19	0920	Soil	SC-18	(1) 4oz Glass	—	202	X		X					X								
7/3/19	0930	Soil	SC-19	(1) 4oz Glass	—	203	X		X					X								
7/3/19	0940	Soil	SC-20	(1) 4oz Glass	—	204	X		X					X								
7/3/19	0950	Soil	SC-21	(1) 4oz Glass	—	205	X		X					X								

Date	Time	Relinquished by	Received by	Date	Time
7/3/19	1640	Heather M. Woods	Christine Walters	7/3/19	1640
7/3/19	1740	Christine Walters	[signature]	7/4/18	0805

Remarks:
Direct Bill to Enterprise
Non-AFE: N42789
Supervisor: ME Eddleman

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

July 16, 2019

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

RE: Enterprise Lateral H 35 OrderNo.: 1907591

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/12/2019 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1907591**
Date Reported: **7/16/2019**

CLIENT: Rule Engineering LLC
Client Sample ID: SC-22
Project: Enterprise Lateral H 35
Collection Date: 7/11/2019 9:50:00 AM
Lab ID: 1907591-001 **Matrix:** SOIL **Received Date:** 7/12/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	150	60		mg/Kg	20	7/12/2019 11:09:26 AM	46150
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/12/2019 10:25:48 AM	46149
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/12/2019 10:25:48 AM	46149
Surr: DNOP	93.2	70-130		%Rec	1	7/12/2019 10:25:48 AM	46149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	7/12/2019 9:36:29 AM	G61346
Surr: BFB	89.3	73.8-119		%Rec	1	7/12/2019 9:36:29 AM	G61346
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	7/12/2019 9:36:29 AM	B61346
Toluene	ND	0.042		mg/Kg	1	7/12/2019 9:36:29 AM	B61346
Ethylbenzene	ND	0.042		mg/Kg	1	7/12/2019 9:36:29 AM	B61346
Xylenes, Total	ND	0.083		mg/Kg	1	7/12/2019 9:36:29 AM	B61346
Surr: 4-Bromofluorobenzene	89.7	80-120		%Rec	1	7/12/2019 9:36:29 AM	B61346

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

Qualifiers:

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

Analytical Report
Lab Order **1907591**
Date Reported: **7/16/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-23
Project: Enterprise Lateral H 35
Collection Date: 7/11/2019 10:00:00 AM
Lab ID: 1907591-002 **Matrix:** SOIL **Received Date:** 7/12/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	110	60		mg/Kg	20	7/12/2019 11:21:50 AM	46150
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/12/2019 10:50:14 AM	46149
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/12/2019 10:50:14 AM	46149
Surr: DNOP	95.2	70-130		%Rec	1	7/12/2019 10:50:14 AM	46149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	7/12/2019 9:59:48 AM	G61346
Surr: BFB	93.9	73.8-119		%Rec	1	7/12/2019 9:59:48 AM	G61346
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	7/12/2019 9:59:48 AM	B61346
Toluene	ND	0.034		mg/Kg	1	7/12/2019 9:59:48 AM	B61346
Ethylbenzene	ND	0.034		mg/Kg	1	7/12/2019 9:59:48 AM	B61346
Xylenes, Total	ND	0.068		mg/Kg	1	7/12/2019 9:59:48 AM	B61346
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	1	7/12/2019 9:59:48 AM	B61346

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

Qualifiers:

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

Analytical Report
Lab Order **1907591**
Date Reported: **7/16/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-24
Project: Enterprise Lateral H 35
Collection Date: 7/11/2019 10:12:00 AM
Lab ID: 1907591-003 **Matrix:** SOIL **Received Date:** 7/12/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	250	60		mg/Kg	20	7/12/2019 11:34:15 AM	46150
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/12/2019 11:14:50 AM	46149
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/12/2019 11:14:50 AM	46149
Surr: DNOP	102	70-130		%Rec	1	7/12/2019 11:14:50 AM	46149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	7/12/2019 10:23:11 AM	G61346
Surr: BFB	92.9	73.8-119		%Rec	1	7/12/2019 10:23:11 AM	G61346
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	7/12/2019 10:23:11 AM	B61346
Toluene	ND	0.041		mg/Kg	1	7/12/2019 10:23:11 AM	B61346
Ethylbenzene	ND	0.041		mg/Kg	1	7/12/2019 10:23:11 AM	B61346
Xylenes, Total	0.12	0.082		mg/Kg	1	7/12/2019 10:23:11 AM	B61346
Surr: 4-Bromofluorobenzene	94.1	80-120		%Rec	1	7/12/2019 10:23:11 AM	B61346

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907591**
16-Jul-19

Client: Rule Engineering LLC
Project: Enterprise Lateral H 35

Sample ID: **MB-46150**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **46150**	RunNo: **61355**							
Prep Date: **7/12/2019**	Analysis Date: **7/12/2019**	SeqNo: **2080349**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46150**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **46150**	RunNo: **61355**							
Prep Date: **7/12/2019**	Analysis Date: **7/12/2019**	SeqNo: **2080350**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907591**

16-Jul-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **LCS-46149** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **46149** RunNo: **61332**

Prep Date: **7/12/2019** Analysis Date: **7/12/2019** SeqNo: **2079460** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	63.9	124			
Surr: DNOP	4.4		5.000		87.7	70	130			

Sample ID: **MB-46149** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **46149** RunNo: **61332**

Prep Date: **7/12/2019** Analysis Date: **7/12/2019** SeqNo: **2079461** 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		93.4	70	130			

Sample ID: **1907591-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **SC-22** Batch ID: **46149** RunNo: **61339**

Prep Date: **7/12/2019** Analysis Date: **7/12/2019** SeqNo: **2080240** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	9.7	48.54	0	116	57	142			
Surr: DNOP	4.7		4.854		95.9	70	130			

Sample ID: **1907591-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **SC-22** Batch ID: **46149** RunNo: **61339**

Prep Date: **7/12/2019** Analysis Date: **7/12/2019** SeqNo: **2080241** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.9	49.55	0	102	57	142	10.7	20	
Surr: DNOP	4.3		4.955		87.3	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907591**

16-Jul-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2079994** 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		94.9	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2079995** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.4	80.1	123			
Surr: BFB	1100		1000		105	73.8	119			

Sample ID: **1907591-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-22**	Batch ID: **G61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2079996** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	4.2	20.87	0	61.6	69.1	142			S
Surr: BFB	880		834.7		105	73.8	119			

Sample ID: **1907591-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-22**	Batch ID: **G61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2079997** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	12	4.2	20.87	0	56.5	69.1	142	8.74	20	S
Surr: BFB	830		834.7		100	73.8	119	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907591**

16-Jul-19

Client: Rule Engineering LLC

Project: Enterprise Lateral H 35

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2080006** 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	0.96		1.000		95.8	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2080007** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.9	80	120			
Toluene	0.95	0.050	1.000	0	95.2	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.9	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.4	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.6	80	120			

Sample ID: **1907591-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-23**	Batch ID: **B61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2080008** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.017	0.6761	0	102	63.9	127			
Toluene	0.71	0.034	0.6761	0.007235	104	69.9	131			
Ethylbenzene	0.70	0.034	0.6761	0	104	71	132			
Xylenes, Total	2.1	0.068	2.028	0.04598	102	71.8	131			
Surr: 4-Bromofluorobenzene	0.64		0.6761		94.8	80	120			

Sample ID: **1907591-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-23**	Batch ID: **B61346**	RunNo: **61346**
Prep Date:	Analysis Date: **7/12/2019**	SeqNo: **2080009** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.68	0.017	0.6761	0	100	63.9	127	1.81	20	
Toluene	0.70	0.034	0.6761	0.007235	102	69.9	131	2.27	20	
Ethylbenzene	0.68	0.034	0.6761	0	101	71	132	2.54	20	
Xylenes, Total	2.1	0.068	2.028	0.04598	99.6	71.8	131	2.08	20	
Surr: 4-Bromofluorobenzene	0.64		0.6761		95.3	80	120	0	0	

Qualifiers:

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

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: 1907591 RcptNo: 1

Received By: Desiree Dominguez 7/12/2019 8:05:00 AM

Completed By: Anne Thorne 7/12/2019 8:24:36 AM

Reviewed By: DAD 7/12/19

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	1.5	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
bmstone@eprod.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush Same Day

Project Name:
Enterprise Lateral H-35

Project #:

Project Manager:
Heather Woods

Sampler: Heather Woods
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.9°C - 0.4°C = 1.5°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 Request ID	Container Type and # (4oz MeOH Cat)	Preservative Type	HEAL No. 1907591	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4) Sage Cl	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
7/11/19	0950	Soil	SC-22	(1) 4oz Glass	—	001	X		X					X								
7/11/19	1000	Soil	SC-23	(1) 4oz Glass	—	002	X		X					X								
7/11/19	1012	Soil	SC-24	(1) 4oz Glass	—	003	X		X					X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/11/19	1240	Heath M. Woods		7/11/19	1240
Date:	Time:	Relinquished by:	Received by:	Date	Time
7/11/19	1254		courier	7/12/19	8:05

Remarks:
Direct Bill to Enterprise
Supervisor: ME Eddleman
Non-AFE: N42789

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 9905

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 9905
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	5/19/2022