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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company **ConocoPhillips Company**	Contact **Lisa Hunter**
Address **3401 East 30th St, Farmington, NM**	Telephone No. **(505) 258-1607**
Facility Name: **San Juan 28-7 Unit 217**	Facility Type: **Gas Well**

Surface Owner **Federal**	Mineral Owner **Federal**	API No. **3003920972**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	**28**	**27N**	**07W**	**1120**	**North**	**1740**	**East**	**Rio Arriba**

Latitude 36.54807 Longitude -107. 57764

NATURE OF RELEASE

Type of Release **Hydrocarbon (Historic - BGT Closure)**	Volume of Release **Unknown**	Volume Recovered **600 yds**
Source of Release **BGT**	Date and Hour of Occurrence **Unknown**	Date and Hour of Discovery **07/17/2016 @ 10:00 a.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? **N/A**	
By Whom? **N/A**	Date and Hour **N/A**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse **N/A**	

OIL CONS. DIV DIST. 3

DEC 30 2016

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Contamination stain discovered on western sidewall of BGT cellar during BGT Closure. Site assessment was conducted by third-party environmental for remediation. Rank: 20

Describe Area Affected and Cleanup Action Taken.*
The below grade tank sample results were above regulatory standard by USEPA method 418.1 for TPH and Organic Vapors, confirming a release. Excavation was 35' x 40' x 16' Deep. Analytical results were below the regulatory standards – no further action required. The soil sampling report is attached for review.

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

Signature:	OIL CONSERVATION DIVISION Approved by Environmental Specialist:	
Printed Name: **Lisa Hunter**		
Title: **Field Environmental Specialist**	Approval Date: 2/3/2017	Expiration Date:
E-mail Address: **Lisa.Hunter@cop.com**	Conditions of Approval: NVF1703430579	Attached ☐
Date: **December 27, 2016** Phone: **(505) 258-1607**		

* Attach Additional Sheets If Necessary

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San Juan 28-7 #217 Release Report

Unit Letter B, Section 28, Township 27 North, Range 7 West
Rio Arriba County, New Mexico

December 26, 2016

Prepared for:
ConocoPhillips
5525 Highway 64
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

ConocoPhillips
San Juan 28-7 #217 Release Report

Prepared for:

ConocoPhillips
5525 Highway 64
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

Reviewed by:

Russell Knight, PG, Principal Hydrogeologist

December 26, 2016

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Tables

Figures

Appendices

1.0 Introduction

The ConocoPhillips San Juan 28-7 #217 release site is located in Unit Letter B, Section 28, Township 27 North, Range 7 West, in Rio Arriba County, New Mexico. A historical release was discovered on July 18, 2016, during below grade tank (BGT) closure sampling when stained soils were observed in the western sidewall of the BGT cellar.

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

2.0 Release Summary

Site Name	San Juan 28-7 #217		
Site Location Description	Unit Letter B, Section 28, Township 27 North, Range 7 West		
Wellhead GPS Location	N36.54824 and W107.57748	***Release GPS Location***	N36.54807 and W107.57764
Land Jurisdiction	Bureau of Land Management	***Discovery Date***	July 18, 2016
Release Source	Unknown/Historical		
NMOCD Site Rank	20		
Distance to Nearest Surface Water	The site is located within the drainage of a small, ephemeral wash.		
Estimated Depth to Groundwater	Greater than 100 feet below ground surface (bgs)	***Distance to Nearest Water Well or Spring***	Greater than 1,000 feet

3.0 NMOCD Site Ranking

In accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 20 (Table 1).

Depth to groundwater at the site is greater than 100 feet bgs based on the elevation differential between the location and Cuervo Canyon and the cathodic well report for San Juan 28-7 #153M reported "no groundwater encountered".

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

The site is located within the drainage area of a small, ephemeral wash.

Based on the ranking score of 20, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH).

4.0 Below Grade Tank Closure Sampling

4.1 Field Activities

On July 17, 2016, Rule Engineering, LLC (Rule) personnel conducted a visual inspection for surface/subsurface indications of a release. Staining was observed in the western sidewall of the BGT cellar. Rule personnel then collected one composite soil sample from the base of the BGT cellar and one composite sample from the stained areas of the western sidewall. Soil sample locations are illustrated on Figure 2.

4.2 Soil Sampling

Rule collected a five-point composite sample (BGT-1) from approximately 0.5 feet below the base of the BGT cellar. Rule also collected a three-point composite sample (BGT-2) from the stained area of the western sidewall. A portion of each sample was field screened for volatile organic compounds (VOCs) and chlorides, and field analyzed for TPH.

Field screening for VOC vapors was conducted with a MiniRAE 3000 photoionization detector (PID). Prior to field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Field analysis for TPH was conducted for selected samples per United States Environmental Protection Agency (USEPA) Method 418.1, utilizing a Buck Scientific HC-404 total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards. Rule's practical quantitation limit for USEPA Method 418.1 is 20 mg/kg.

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. The samples were analyzed for BTEX per USEPA Method 8021B, TPH per USEPA Method 8015M/D and 418.1, and chlorides per USEPA Method 300.0.

Field and laboratory results for BGT-1 and BGT-2 are summarized in Table 2, and the analytical report is included in Appendix A.

4.3 Field Screening Results

Field sampling results for soil composite sample BGT-1 indicated a VOC concentration of 60 ppm and a TPH concentration below the reporting limit of 20 mg/kg. Field chloride concentration was recorded at 40 mg/kg.

Field sampling results for soil composite sample BGT-2 indicated a VOC concentration of 1,500 ppm and a TPH concentration of greater than 2,500 mg/kg. Field chloride concentration was recorded at 120 mg/kg.

Field screening results are summarized in Table 2.

4.4 Laboratory Analytical Results

Laboratory analytical results for sample BGT-1 reported benzene, total BTEX, TPH, and chloride concentrations below the laboratory reporting limits, which are below the BGT closure standards.

Laboratory analytical results for sample BGT-2 reported a benzene concentration below the laboratory reporting limit of 0.48 mg/kg and a total BTEX concentration of 33 mg/kg, which are below the applicable NMOCD action levels. Laboratory analytical results for sample BGT-2 reported TPH concentrations of 670 mg/kg as GRO per USEPA Method 8015 M/D, 7,000 mg/kg DRO per USEPA Method 8015 M/D, and 31,000 mg/kg per USEPA Method 418.1, which exceed the applicable NMOCD action levels. The laboratory analytical result for sample BGT-2 for chloride concentration was below the laboratory reporting limit of 30 mg/kg.

Laboratory analytical results are summarized in Table 2 and the analytical laboratory report is included in Appendix A.

5.0 Site Assessment

5.1 Field Activities

On August 26, 2016, Rule personnel conducted a site assessment to delineate the extent of the release which included advancing five soil borings (SB-1 through SB-5) utilizing a hand auger. Soil borings were advanced to depths ranging from approximately 8 to 12 feet bgs where refusal was encountered on hard soils or sandstone or the limit of the equipment was reached. Soil boring locations are illustrated on Figure 2.

5.2 Soil Sampling

Rule collected soil samples from the soil borings at 1 to 2 foot intervals with an approximately 0.5 foot sample length at each interval. The lithology encountered at the site included interbedded clayey sand and poorly graded sand underlain by sandstone or shale to the maximum depths of the soil borings.

A portion of each sample was field screened for VOCs and selected samples were also field analyzed for TPH. Field screening for VOC vapors was conducted with a PID. Prior to field screening, the PID was calibrated with 100 ppm isobutylene gas. Field analysis for TPH was conducted for selected samples per USEPA Method 418.1, utilizing a total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards. Rule's practical quantitation limit for USEPA Method 418.1 is 20 mg/kg.

Site assessment field screening results are summarized in Table 2.

5.3 Field Screening Results

Field screening results for samples collected from soil borings SB-1 through SB-5 indicated VOC concentrations ranging from 0.9 ppm to 1,320 ppm. Field TPH results for samples collected from soil borings SB-1 through SB-5 indicated TPH concentrations ranging from below the reporting limit of 20 mg/kg to 2,780 mg/kg. Field screening results are summarized in Table 2.

6.0 Excavation Confirmation Sampling

6.1 Field Activities

Hydrocarbon impacted soils were excavated prior to October 14, 2016, when Rule personnel returned to the site to collect confirmation samples from the resultant excavation which measured approximately 28 feet by 23 feet by 15 feet in depth. Laboratory analysis indicated TPH concentrations in excess of NMOCD action levels from the sample collected from the base of the excavation. An additional two feet of material was removed from the base of the excavation and resampling of the base now measuring approximately 17 feet in depth was conducted on October 21, 2016. Excavated hydrocarbon impacted soils and rock were transported to a local NMOCD approved landfarm for disposal/remediation and the excavation was backfilled with clean, imported material. A depiction of the final excavation with sample locations is included on Figure 3.

6.2 Soil Sampling

Rule collected five composite confirmation soil samples (SC-1 through SC-5) on October 14, 2016, and one additional sample (SC-6) on October 21, 2016. Each confirmation soil sample is a representative composite comprised of five equivalent portions of soil collected from the sampled area.

A portion of each sample was field screened for VOCs and field analyzed for TPH. Field screening for VOC vapors was conducted with a PID. Prior to field screening, the PID was calibrated with 100 ppm isobutylene gas. Field analysis for TPH was conducted for selected samples per USEPA Method 418.1, utilizing a total hydrocarbon analyzer. Prior

to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards. Rule's practical quantitation limit for USEPA Method 418.1 is 20 mg/kg.

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 excavation confirmation samples were analyzed for BTEX per USEPA Method 8021B, and TPH per USEPA Method 8015M/D.

Field screening and laboratory analytical results are summarized in Table 3. The analytical laboratory reports are included in Appendix A.

6.3 Field Screening Results

Field screening results for soil confirmation samples SC-1 through SC-6 indicated VOC concentrations ranging from 0.3 ppm to 900 ppm. Field TPH concentration results for these samples ranged from below the reporting limit of 20 mg/kg to 2,364 mg/kg. Field screening results are summarized in Table 3.

6.4 Laboratory Analytical Results

Sample Removed by Excavation: Sample SC-5, representing the base of the excavation at approximately 15 feet in depth, was removed by excavation due to NMOCD action level for TPH. Laboratory analytical results for this sample reported a benzene concentration below the laboratory reporting limit of 0.087 mg/kg, a total BTEX concentration of 10.7 mg/kg, and a TPH concentration of 2,480 mg/kg.

Final Excavation Confirmation Samples: Samples collected for final excavation confirmation include SC-1, SC-2, SC-3, SC-4, and SC-6. Laboratory analytical results for final excavation confirmation samples reported benzene, total BTEX, and TPH concentrations below the laboratory reporting limits, which are below the applicable NMOCD action levels for a site rank of 20.

Laboratory analytical results are summarized in Table 3. The analytical laboratory reports are included in Appendix A.

7.0 Conclusions

Hydrocarbon impacted soils associated with a historical release discovered during BGT closure activities at the ConocoPhillips San Juan 28-7 #217 have been excavated and transported to an NMOCD approved landfarm for disposal/remediation. Field screening and laboratory analytical results for samples collected from the final excavation sidewalls and base indicate that concentrations of benzene, total BTEX, and TPH are below NMOCD action levels for a site rank of 20. Therefore, no further work is recommended at this time.

8.0 Closure and Limitations

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

Tables

Table 1. NMOCD Site Ranking Determination
ConocoPhillips
San Juan 28-7 #217
Rio Arriba County, New Mexico

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Elevation differential between location and Cuervo Canyon derived from the topographic map of the area and no groundwater encountered on cathodic well report for the San Juan 28-7 #153M.	NMOCD Online database, Gould Pass Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Gould Pass Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	20	The site is located within the drainage area of a small, ephemeral wash.	Gould Pass Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		**20**		

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Solutions to Regulations for Industry

Table 2. Site Assessment Field Screening and Laboratory Analytical Results
ConocoPhillips
San Juan 28-7 #217
Rio Arriba County, New Mexico

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field Results			Laboratory Results					
			Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	Field Chlorides (mg/kg)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH by 418.1 (mg/kg)	Chloride (mg/kg)
BGT Closure Standards*			--	2,500	20,000	10	50	1,000		2,500	20,000
NMOCD Action Level**			100	100	100	10	50	100		100	--
BGT-1	7/18/2016	4.5	60	<20.0	40	<0.024	<0.213	<4.7	<9.6	<19	<30
BGT-2	7/18/2016	2.5 to 3.5	**1,550**	**>2,500**	120	<0.48	33	**670**	**7,000**	**31,000**	<30
SB-1	8/26/2016	1	6.7	--	--	--	--	--	--	--	--
		2	5.7	--	--	--	--	--	--	--	--
		3	8.9	--	--	--	--	--	--	--	--
		4	9.1	--	--	--	--	--	--	--	--
		6	17.1	--	--	--	--	--	--	--	--
		8	50.9	<20.0	--	--	--	--	--	--	--
		10	44.5	--	--	--	--	--	--	--	--
		12	45.7	<20.0	--	--	--	--	--	--	--
SB-2	8/26/2016	1	**313**	--	--	--	--	--	--	--	--
		2	**798**	--	--	--	--	--	--	--	--
		3	**350**	--	--	--	--	--	--	--	--
		4	**1,320**	**2,780**	--	--	--	--	--	--	--
		6	**307**	**117**	--	--	--	--	--	--	--
		8	**304**	39.2	--	--	--	--	--	--	--
		10	**275**	--	--	--	--	--	--	--	--
		12	**167**	45.0	--	--	--	--	--	--	--
SB-3	8/26/2016	1	5.9	--	--	--	--	--	--	--	--
		2	0.9	--	--	--	--	--	--	--	--
		3	32.9	--	--	--	--	--	--	--	--
		4	73.9	--	--	--	--	--	--	--	--
		6	**210**	--	--	--	--	--	--	--	--
		8	**215**	20.4	--	--	--	--	--	--	--
		10	**118**	--	--	--	--	--	--	--	--
SB-4	8/26/2016	6	5.6	--	--	--	--	--	--	--	--
		8	13.4	<20.0	--	--	--	--	--	--	--
		10	13.0	--	--	--	--	--	--	--	--
SB-5	8/26/2016	1	47.1	--	--	--	--	--	--	--	--
		2	32.2	--	--	--	--	--	--	--	--
		3	60.0	--	--	--	--	--	--	--	--
		4	37.0	--	--	--	--	--	--	--	--
		6	99.7	<20.0	--	--	--	--	--	--	--
		8	83.7	--	--	--	--	--	--	--	--

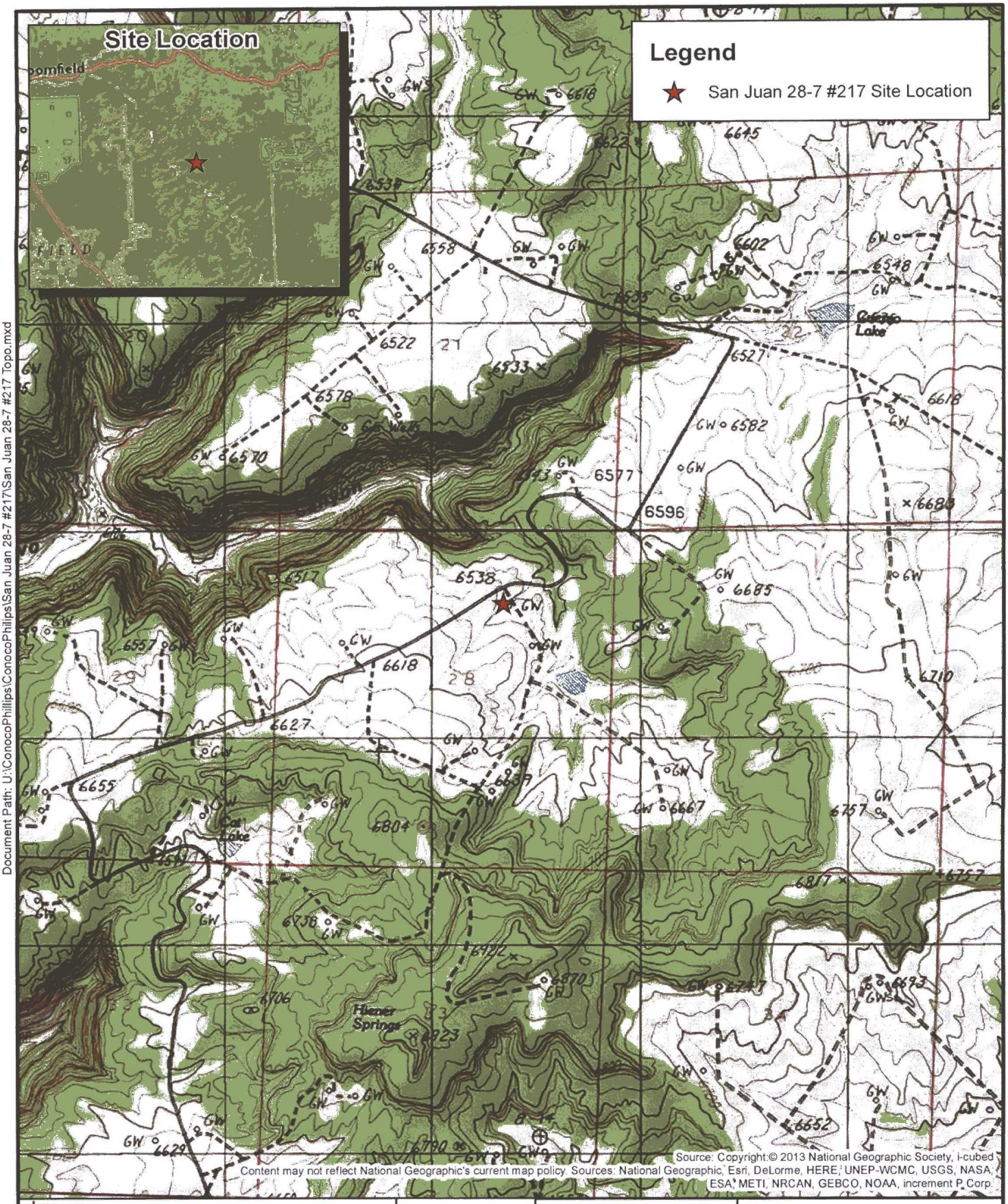
Notes:
VOCs - volatile organic compounds
PID - photoionization detector
ft bgs - feet below grade surface
ppm - parts per million
mg/kg - milligrams per kilogram
*19.15.17.13 NMAC
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
BTEX - benzene, toluene, ethylbenzene, and xylenes
NMOCD - New Mexico Oil Conservation Division
**Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*

Table 3. Excavation Confirmation Field Screening and Laboratory Analytical Results
ConocoPhillips
San Juan 28-7 #217
Rio Arriba County, New Mexico

Sample Name	Date	Approximate Sample Depth (ft bgs)	Sample Location	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)
NMOCD Action Level*				100	100**	10	NE	NE	NE	50		100**	
Samples Removed by Excavation													
SC-5	10/14/2016	15	Base	**900**	**2,364**	<0.087	0.22	1.0	9.5	10.7	**280**	**1,800**	**400**
Excavation Confirmation Samples													
SC-1	10/14/2016	0 to 15	North Wall	43.8	23.0	<0.024	<0.049	<0.049	<0.097	ND	<4.9	<9.7	<48
SC-2	10/14/2016	0 to 15	South Wall	102	<20	<0.024	<0.049	<0.049	<0.097	ND	<4.9	<9.7	<49
SC-3	10/14/2016	0 to 15	East Wall	2.2	<20	<0.024	<0.047	<0.047	<0.094	ND	<4.7	<9.9	<50
SC-4	10/14/2016	0 to 15	West Wall	2.2	<20	<0.024	<0.048	<0.048	<0.095	ND	<4.8	<9.9	<50
SC-6	10/21/2016	17	Base	0.3	<20	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10	<50

Notes:
VOCs - volatile organic compounds
PID - photoionization detector
ft bgs - feet below grade surface
ppm - parts per million
mg/kg - milligrams per kilogram
NE - not-established
ND - not detected above laboratory reporting limits
BTEX - benzene, toluene, ethylbenzene, and xylenes
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
NMOCD - New Mexico Oil Conservation Division
*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*
**Based on a site ranking of 20.

Figures



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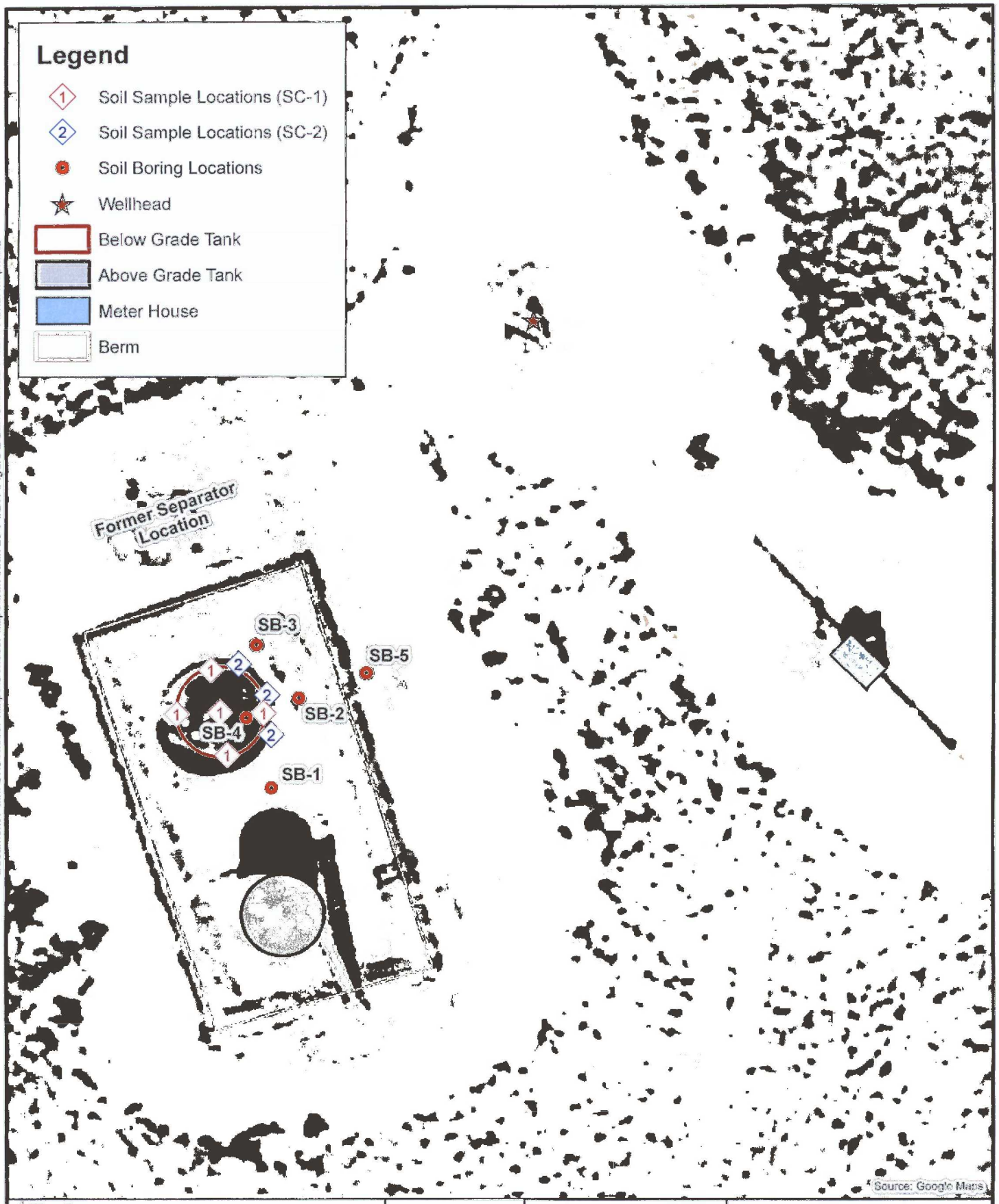
0 0.2 0.4 0.8 Miles

Gould Pass Quadrangle
1:24,000

ConocoPhillips

B-S28-T27N-R07W
N36.54824, W107.57748
Rio Arriba County, NM
API: 30-039-20972

Figure 1
Topographic Site Map
San Juan 28-7 #217



Document Path: U:\ConocoPhillips\ConocoPhillips\San Juan 28-7 #217\Figure 2 San Juan 28-7 #217 Aerial Map.mxd

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0 5 10 20 30 40 Feet
1 inch = 20 feet

ConocoPhillips

B-S28-T27N-R07W
N36.54824, W107.57748
Rio Arriba County, NM
API: 30-039-20972

Figure 2
Aerial Site Map
San Juan 28-7 #217

Document Path: U:\ConocoPhillips\ConocoPhilips\San Juan 28-7 #217\Figure 3 San Juan 28-7 #217 Excavation Map.mxd

Rule Engineering, LLC
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0 2.5 5 10 15 20 Feet

1 inch = 10 feet

ConocoPhillips

B-S28-T27N-R07W
N36.54824, W107.57748
Rio Arriba County, NM
API: 30-039-20972

Figure 3
Excavation Confirmation Sample Location Map
San Juan 28-7 #217

Appendix A

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

July 28, 2016

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

RE: San Juan 28-7 217 OrderNo.: 1607859

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/19/2016 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1607859**
Date Reported: **7/28/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: San Juan 28-7 217
Lab ID: 1607859-001 **Matrix:** SOIL

Client Sample ID: SC-1
Collection Date: 7/18/2016 9:30:00 AM
Received Date: 7/19/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **MAB**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/26/2016	26572
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	7/21/2016 7:04:00 PM	26529
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/21/2016 1:52:05 PM	26500
Surr: DNOP	103	70-130		%Rec	1	7/21/2016 1:52:05 PM	26500
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/20/2016 8:11:37 PM	26468
Surr: BFB	101	80-120		%Rec	1	7/20/2016 8:11:37 PM	26468
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	7/20/2016 8:11:37 PM	26468
Toluene	ND	0.047		mg/Kg	1	7/20/2016 8:11:37 PM	26468
Ethylbenzene	ND	0.047		mg/Kg	1	7/20/2016 8:11:37 PM	26468
Xylenes, Total	ND	0.095		mg/Kg	1	7/20/2016 8:11:37 PM	26468
Surr: 4-Bromofluorobenzene	95.9	80-120		%Rec	1	7/20/2016 8:11:37 PM	26468

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-2
Project: San Juan 28-7 217
Collection Date: 7/18/2016 9:45:00 AM
Lab ID: 1607859-002
Matrix: SOIL
Received Date: 7/19/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **MAB**	
Petroleum Hydrocarbons, TR	31000	1900		mg/Kg	100	7/26/2016	26572
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	7/21/2016 7:16:24 PM	26529
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	7000	97		mg/Kg	10	7/21/2016 3:46:00 PM	26500
Surr: DNOP	0	70-130	S	%Rec	10	7/21/2016 3:46:00 PM	26500
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	670	96		mg/Kg	20	7/22/2016 1:53:17 AM	26468
Surr: BFB	282	80-120	S	%Rec	20	7/22/2016 1:53:17 AM	26468
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.48		mg/Kg	20	7/22/2016 1:53:17 AM	26468
Toluene	ND	0.96		mg/Kg	20	7/22/2016 1:53:17 AM	26468
Ethylbenzene	1.6	0.96		mg/Kg	20	7/22/2016 1:53:17 AM	26468
Xylenes, Total	31	1.9		mg/Kg	20	7/22/2016 1:53:17 AM	26468
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	20	7/22/2016 1:53:17 AM	26468

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607859**

28-Jul-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID	**MB-26529**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**26529**		RunNo:	**35903**				
Prep Date:	**7/21/2016**	Analysis Date:	**7/21/2016**		SeqNo:	**1111501**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-26529**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**26529**		RunNo:	**35903**				
Prep Date:	**7/21/2016**	Analysis Date:	**7/21/2016**		SeqNo:	**1111502**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.2	90	110			

Sample ID	**1607747-003AMS**	SampType:	**ms**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**BatchQC**	Batch ID:	**26529**		RunNo:	**35903**				
Prep Date:	**7/21/2016**	Analysis Date:	**7/21/2016**		SeqNo:	**1111513**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	17	1.5	15.00	2.609	98.9	70.8	119			

Sample ID	**1607747-003AMSD**	SampType:	**msd**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**BatchQC**	Batch ID:	**26529**		RunNo:	**35903**				
Prep Date:	**7/21/2016**	Analysis Date:	**7/21/2016**		SeqNo:	**1111514**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	18	1.5	15.00	2.609	100	70.8	119	0.939	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607859**

28-Jul-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **MB-26572**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBS**	Batch ID: **26572**	RunNo: **35993**
Prep Date: **7/25/2016**	Analysis Date: **7/26/2016**	SeqNo: **1114334** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID **LCS-26572**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS**	Batch ID: **26572**	RunNo: **35993**
Prep Date: **7/25/2016**	Analysis Date: **7/26/2016**	SeqNo: **1114335** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	110	20	100.0	0	106	80.7	121			

Sample ID **LCSD-26572**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **26572**	RunNo: **35993**
Prep Date: **7/25/2016**	Analysis Date: **7/26/2016**	SeqNo: **1114336** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	110	20	100.0	0	111	80.7	121	5.36	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607859**

28-Jul-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **LCS-26500**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **26500**	RunNo: **35868**
Prep Date: **7/20/2016**	Analysis Date: **7/21/2016**	SeqNo: **1111810** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.1	62.6	124			
Surr: DNOP	5.3		5.000		106	70	130			

Sample ID **MB-26500**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **26500**	RunNo: **35868**
Prep Date: **7/20/2016**	Analysis Date: **7/21/2016**	SeqNo: **1111811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.5		10.00		94.8	70	130			

Sample ID **1607862-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC**	Batch ID: **26500**	RunNo: **35915**
Prep Date: **7/20/2016**	Analysis Date: **7/22/2016**	SeqNo: **1112521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	65	9.3	46.43	27.38	80.9	33.9	141			
Surr: DNOP	4.8		4.643		104	70	130			

Sample ID **1607862-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC**	Batch ID: **26500**	RunNo: **35915**
Prep Date: **7/20/2016**	Analysis Date: **7/22/2016**	SeqNo: **1112522** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	65	9.8	48.78	27.38	77.0	33.9	141	0.0345	20	
Surr: DNOP	5.9		4.878		120	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607859**

28-Jul-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **MB-26468**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **26468**	RunNo: **35833**
Prep Date: **7/19/2016**	Analysis Date: **7/20/2016**	SeqNo: **1109484** 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		102	80	120			

Sample ID **LCS-26468**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **26468**	RunNo: **35833**
Prep Date: **7/19/2016**	Analysis Date: **7/20/2016**	SeqNo: **1109485** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	106	80	120			
Surr: BFB	1100		1000		115	80	120			

Sample ID **1607859-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-1**	Batch ID: **26468**	RunNo: **35833**
Prep Date: **7/19/2016**	Analysis Date: **7/20/2016**	SeqNo: **1109488** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.6	23.23	0	98.4	59.3	143			
Surr: BFB	1100		929.4		114	80	120			

Sample ID **1607859-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-1**	Batch ID: **26468**	RunNo: **35833**
Prep Date: **7/19/2016**	Analysis Date: **7/20/2016**	SeqNo: **1109489** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	31	4.8	24.20	0	127	59.3	143	29.5	20	R
Surr: BFB	1100		968.1		117	80	120	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607859**

28-Jul-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **MB-26468**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **26468**	RunNo: **35833**
Prep Date: **7/19/2016**	Analysis Date: **7/20/2016**	SeqNo: **1109545** 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		100	80	120			

Sample ID **LCS-26468**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **26468**	RunNo: **35833**
Prep Date: **7/19/2016**	Analysis Date: **7/20/2016**	SeqNo: **1109546** 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	98.7	75.3	123			
Toluene	0.97	0.050	1.000	0	96.6	80	124			
Ethylbenzene	0.99	0.050	1.000	0	99.1	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.9	83.9	122			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1607859 RcptNo: 1

Received by/date: 09/19/16

Logged By: Lindsay Mangin 7/19/2016 8:45:00 AM

Completed By: Lindsay Mangin 7/19/2016 8:58:25 AM

Reviewed By: 07/19/16

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.1	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering LLC

Mailing Address: 301 Airport Dr. Suite 201

Phone #: 505 793 9486

email or Fax#: jwalder@ruleengineering.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name: San Juan 28-7 #217

Project #:

Project Manager: Heather Woods

Sampler: Justin Walder

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.1

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	~~Time~~ Date	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1607859	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, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
9:30	7/18/16	Soil	SC-1	4 oz glass	Cold	-001	X		X	X				X								
9:45	7/18/16	Soil	SC-2	4 oz glass	Cold	-002	X		X	X				X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/18/16	1732	Justin Walder	Justin Walder	7/18/16	1732
7/18/16	1821	Justin Walder		07/19/16	0845

Remarks: Direct bill to Conoco Phillips ordered by: Lisa Hunter
Area 7
Supervisor: Erwin Wyckoff
Approver: KA/TLW

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

October 20, 2016

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

RE: San Juan 28-7 217 OrderNo.: 1610738

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 10/15/2016 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1610738**
Date Reported: **10/20/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-1
Project: San Juan 28-7 217
Collection Date: 10/14/2016 10:50:00 AM
Lab ID: 1610738-001
Matrix: SOIL
Received Date: 10/15/2016 1:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/19/2016 12:03:02 PM	28128
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/19/2016 12:03:02 PM	28128
Surr: DNOP	92.8	70-130		%Rec	1	10/19/2016 12:03:02 PM	28128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/18/2016 10:48:29 AM	28094
Surr: BFB	88.6	68.3-144		%Rec	1	10/18/2016 10:48:29 AM	28094
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/18/2016 10:48:29 AM	28094
Toluene	ND	0.049		mg/Kg	1	10/18/2016 10:48:29 AM	28094
Ethylbenzene	ND	0.049		mg/Kg	1	10/18/2016 10:48:29 AM	28094
Xylenes, Total	ND	0.097		mg/Kg	1	10/18/2016 10:48:29 AM	28094
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	10/18/2016 10:48:29 AM	28094

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-2
Project: San Juan 28-7 217
Collection Date: 10/14/2016 10:55:00 AM
Lab ID: 1610738-002
Matrix: SOIL
Received Date: 10/15/2016 1:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/19/2016 12:24:47 PM	28128
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/19/2016 12:24:47 PM	28128
Surr: DNOP	94.8	70-130		%Rec	1	10/19/2016 12:24:47 PM	28128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/18/2016 12:01:29 PM	28094
Surr: BFB	90.8	68.3-144		%Rec	1	10/18/2016 12:01:29 PM	28094
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/18/2016 12:01:29 PM	28094
Toluene	ND	0.049		mg/Kg	1	10/18/2016 12:01:29 PM	28094
Ethylbenzene	ND	0.049		mg/Kg	1	10/18/2016 12:01:29 PM	28094
Xylenes, Total	ND	0.097		mg/Kg	1	10/18/2016 12:01:29 PM	28094
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/18/2016 12:01:29 PM	28094

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-3
Project: San Juan 28-7 217
Collection Date: 10/14/2016 9:00:00 AM
Lab ID: 1610738-003
Matrix: SOIL
Received Date: 10/15/2016 1:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/19/2016 12:46:27 PM	28128
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/19/2016 12:46:27 PM	28128
Surr: DNOP	94.7	70-130		%Rec	1	10/19/2016 12:46:27 PM	28128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/18/2016 1:16:49 PM	28094
Surr: BFB	90.9	68.3-144		%Rec	1	10/18/2016 1:16:49 PM	28094
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/18/2016 1:16:49 PM	28094
Toluene	ND	0.047		mg/Kg	1	10/18/2016 1:16:49 PM	28094
Ethylbenzene	ND	0.047		mg/Kg	1	10/18/2016 1:16:49 PM	28094
Xylenes, Total	ND	0.094		mg/Kg	1	10/18/2016 1:16:49 PM	28094
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/18/2016 1:16:49 PM	28094

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-4
Project: San Juan 28-7 217
Collection Date: 10/14/2016 11:00:00 AM
Lab ID: 1610738-004
Matrix: SOIL
Received Date: 10/15/2016 1:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/19/2016 1:08:10 PM	28128
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/19/2016 1:08:10 PM	28128
Surr: DNOP	96.2	70-130		%Rec	1	10/19/2016 1:08:10 PM	28128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/18/2016 1:40:56 PM	28094
Surr: BFB	94.8	68.3-144		%Rec	1	10/18/2016 1:40:56 PM	28094
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/18/2016 1:40:56 PM	28094
Toluene	ND	0.048		mg/Kg	1	10/18/2016 1:40:56 PM	28094
Ethylbenzene	ND	0.048		mg/Kg	1	10/18/2016 1:40:56 PM	28094
Xylenes, Total	ND	0.095		mg/Kg	1	10/18/2016 1:40:56 PM	28094
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	10/18/2016 1:40:56 PM	28094

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610738**

20-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **LCS-28128**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **28128**	RunNo: **38041**
Prep Date: **10/18/2016**	Analysis Date: **10/19/2016**	SeqNo: **1186160** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.2	62.6	124			
Surr: DNOP	4.3		5.000		85.8	70	130			

Sample ID **MB-28128**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **28128**	RunNo: **38041**
Prep Date: **10/18/2016**	Analysis Date: **10/19/2016**	SeqNo: **1186161** 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		89.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610738**

20-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **MB-28094**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185899** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		88.6	68.3	144			

Sample ID **LCS-28094**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185900** 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	111	74.6	123			
Surr: BFB	960		1000		96.2	68.3	144			

Sample ID **1610738-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-2**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185903** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.8	24.18	0	113	61.3	150			
Surr: BFB	880		967.1		90.6	68.3	144			

Sample ID **1610738-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SC-2**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185905** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.7	23.34	0	122	61.3	150	4.72	20	
Surr: BFB	880		933.7		94.4	68.3	144	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610738**

20-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **MB-28094**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185924** 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 **LCS-28094**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185925** 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	95.4	75.2	115			
Toluene	0.93	0.050	1.000	0	93.3	80.7	112			
Ethylbenzene	0.90	0.050	1.000	0	89.8	78.9	117			
Xylenes, Total	2.8	0.10	3.000	0	94.3	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID **1610738-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-1**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.023	0.9311	0	107	71.5	122			
Toluene	0.98	0.047	0.9311	0	106	71.2	123			
Ethylbenzene	0.97	0.047	0.9311	0	104	75.2	130			
Xylenes, Total	3.0	0.093	2.793	0.02255	106	72.4	131			
Surr: 4-Bromofluorobenzene	0.95		0.9311		102	80	120			

Sample ID **1610738-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-1**	Batch ID: **28094**	RunNo: **38022**
Prep Date: **10/17/2016**	Analysis Date: **10/18/2016**	SeqNo: **1185931** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9823	0	105	71.5	122	3.96	20	
Toluene	1.0	0.049	0.9823	0	103	71.2	123	2.68	20	
Ethylbenzene	1.0	0.049	0.9823	0	103	75.2	130	4.61	20	
Xylenes, Total	3.2	0.098	2.947	0.02255	107	72.4	131	5.94	20	
Surr: 4-Bromofluorobenzene	0.99		0.9823		101	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1610738 RcptNo: 1

Received by/date: 10/15/16

Logged By: Lindsay Mangin 10/15/2016 1:15:00 PM

Completed By: Lindsay Mangin 10/15/2016 2:16:49 PM

Reviewed By: JC 10/17/16

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. Suite 205
Farmington, NM 87401

Phone #: 505 793 9486

Email or Fax#: jvaldez@ruleengineering.com

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

Accreditation
NELAP ☐ Other _____

EDD (Type) _____

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name:
SJ San Juan 28-7 # 217

Project #:

Project Manager:
Heather Woods

Sampler: Justin Valdez

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1610738	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 ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
10/14/16	1050		SC-1	4 40z Glass	Cold	-001	+		+													
10/14/16	1055		SC-2			-002	+		+													
10/14/16	900		SC-3			-003	+		+													
10/14/16	1100		SC-4			-004	+		+													

Date	Time	Relinquished by:	Received by:	Date	Time
10/14/16	1614	Justin Valdez	Christie Walls	10/14/16	1614
10/14/16	2014	Christie Walls		10/15/16	1315

Remarks:
Direct Bill to Conoco Phillips
WO: 21711107
Approver: KAITLW
Area Super: Ervin Wyckoff
Ordered by: Lisa Hunter

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

October 18, 2016

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

RE: San Juan 28-7 217 OrderNo.: 1610737

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/15/2016 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1610737**
Date Reported: **10/18/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-5
Project: San Juan 28-7 217
Collection Date: 10/14/2016 1:50:00 PM
Lab ID: 1610737-001
Matrix: MEOH (SOIL)
Received Date: 10/15/2016 1:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1800	50		mg/Kg	5	10/17/2016 2:45:02 PM	28084
Motor Oil Range Organics (MRO)	400	250		mg/Kg	5	10/17/2016 2:45:02 PM	28084
Surr: DNOP	73.0	70-130		%Rec	5	10/17/2016 2:45:02 PM	28084
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	280	17		mg/Kg	5	10/17/2016 10:50:17 AM	28066
Surr: BFB	351	68.3-144	S	%Rec	5	10/17/2016 10:50:17 AM	28066
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.087		mg/Kg	5	10/17/2016 10:50:17 AM	28066
Toluene	0.22	0.17		mg/Kg	5	10/17/2016 10:50:17 AM	28066
Ethylbenzene	1.0	0.17		mg/Kg	5	10/17/2016 10:50:17 AM	28066
Xylenes, Total	9.5	0.35		mg/Kg	5	10/17/2016 10:50:17 AM	28066
Surr: 4-Bromofluorobenzene	126	80-120	S	%Rec	5	10/17/2016 10:50:17 AM	28066

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610737**

18-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **LCS-28084**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **28084**	RunNo: **37981**
Prep Date: **10/17/2016**	Analysis Date: **10/17/2016**	SeqNo: **1183848** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	62.6	124			
Surr: DNOP	4.6		5.000		91.8	70	130			

Sample ID **MB-28084**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **28084**	RunNo: **37981**
Prep Date: **10/17/2016**	Analysis Date: **10/17/2016**	SeqNo: **1183849** 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	9.9		10.00		98.8	70	130			

Sample ID **LCS-28085**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **28085**	RunNo: **37982**
Prep Date: **10/17/2016**	Analysis Date: **10/17/2016**	SeqNo: **1183862** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.5	70	130			

Sample ID **MB-28085**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **28085**	RunNo: **37982**
Prep Date: **10/17/2016**	Analysis Date: **10/17/2016**	SeqNo: **1183863** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.9		10.00		89.5	70	130			

Sample ID **MB-28076**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **28076**	RunNo: **37981**
Prep Date: **10/14/2016**	Analysis Date: **10/17/2016**	SeqNo: **1184449** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.6		10.00		85.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610737**

18-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **MB-28066**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **28066**	RunNo: **37988**
Prep Date: **10/14/2016**	Analysis Date: **10/17/2016**	SeqNo: **1184548** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	810		1000		81.3	68.3	144			

Sample ID **LCS-28066**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **28066**	RunNo: **37988**
Prep Date: **10/14/2016**	Analysis Date: **10/17/2016**	SeqNo: **1184549** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	74.6	123			
Surr: BFB	890		1000		89.4	68.3	144			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610737**

18-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 217

Sample ID **MB-28066**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **28066**	RunNo: **37988**
Prep Date: **10/14/2016**	Analysis Date: **10/17/2016**	SeqNo: **1184561** 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	0.95		1.000		94.8	80	120			

Sample ID **LCS-28066**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **28066**	RunNo: **37988**
Prep Date: **10/14/2016**	Analysis Date: **10/17/2016**	SeqNo: **1184562** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.6	75.2	115			
Toluene	0.96	0.050	1.000	0	96.1	80.7	112			
Ethylbenzene	0.99	0.050	1.000	0	98.6	78.9	117			
Xylenes, Total	2.9	0.10	3.000	0	97.9	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1610737** RcptNo: **1**

Received by/date: 10/15/16

Logged By: **Lindsay Mangin** **10/15/2016 1:15:00 PM**

Completed By: **Lindsay Mangin** **10/15/2016 2:14:49 PM**

Reviewed By: AT 10/17/16

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

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

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. Suite 205 Farmington, NM 87401

Phone #: 505 793 9480

email or Fax#: justin@ruleengineering.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush Same Day

Project Name: San Juan 28-7 #217

Project #:

Project Manager: Heather Woods

Sampler: Justin Volker

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.4

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. 1610737	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)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
10/4/16	1350	Soil	SC-5	4oz Glass	Cold	-001	+		+													

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/4/16	1618	Justin Volker	Christie Walls	10/4/16	1618
10/14/16	2014	Christie Walls		10/15/16	1315

Remarks:

Direct Bill to Conoco Phillips
WO: 21711107 Area Super: Ervin Wyckoff
Approver: KAITLW Ordered by: Lisa Hunter

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

October 26, 2016

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

RE: San Juan 28-7 #217 OrderNo.: 1610B31

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/22/2016 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-6
Project: San Juan 28-7 #217
Collection Date: 10/21/2016 10:20:00 AM
Lab ID: 1610B31-001 **Matrix:** SOIL **Received Date:** 10/22/2016 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2016 12:57:27 PM	28237
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2016 12:57:27 PM	28237
Surr: DNOP	86.0	70-130		%Rec	1	10/25/2016 12:57:27 PM	28237
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/25/2016 11:22:27 PM	28236
Surr: BFB	86.6	68.3-144		%Rec	1	10/25/2016 11:22:27 PM	28236
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.046		mg/Kg	1	10/25/2016 11:22:27 PM	28236
Toluene	ND	0.046		mg/Kg	1	10/25/2016 11:22:27 PM	28236
Ethylbenzene	ND	0.046		mg/Kg	1	10/25/2016 11:22:27 PM	28236
Xylenes, Total	ND	0.092		mg/Kg	1	10/25/2016 11:22:27 PM	28236
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	10/25/2016 11:22:27 PM	28236

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610B31**

26-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 #217

Sample ID **LCS-28237**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **28237**	RunNo: **38183**
Prep Date: **10/24/2016**	Analysis Date: **10/25/2016**	SeqNo: **1191886** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.6	62.6	124			
Surr: DNOP	4.7		5.000		93.3	70	130			

Sample ID **MB-28237**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **28237**	RunNo: **38183**
Prep Date: **10/24/2016**	Analysis Date: **10/25/2016**	SeqNo: **1191887** 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	11		10.00		109	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610B31**

26-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 #217

Sample ID **MB-28236**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **28236**	RunNo: **38202**
Prep Date: **10/24/2016**	Analysis Date: **10/25/2016**	SeqNo: **1192363** 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	850		1000		85.0	68.3	144			

Sample ID **LCS-28236**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **28236**	RunNo: **38202**
Prep Date: **10/24/2016**	Analysis Date: **10/25/2016**	SeqNo: **1192364** 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	89.8	74.6	123			
Surr: BFB	950		1000		95.4	68.3	144			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1610B31**

26-Oct-16

Client: Rule Engineering LLC

Project: San Juan 28-7 #217

Sample ID **MB-28236**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **28236**	RunNo: **38202**
Prep Date: **10/24/2016**	Analysis Date: **10/25/2016**	SeqNo: **1192384** 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		99.0	80	120			

Sample ID **LCS-28236**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **28236**	RunNo: **38202**
Prep Date: **10/24/2016**	Analysis Date: **10/25/2016**	SeqNo: **1192385** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.8	75.2	115			
Toluene	0.93	0.050	1.000	0	92.9	80.7	112			
Ethylbenzene	0.95	0.050	1.000	0	95.4	78.9	117			
Xylenes, Total	2.8	0.10	3.000	0	93.6	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID **1610B31-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-6**	Batch ID: **28236**	RunNo: **38202**
Prep Date: **10/24/2016**	Analysis Date: **10/25/2016**	SeqNo: **1192387** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9434	0	97.4	71.5	122			
Toluene	0.95	0.047	0.9434	0	101	71.2	123			
Ethylbenzene	0.98	0.047	0.9434	0	104	75.2	130			
Xylenes, Total	2.9	0.094	2.830	0	103	72.4	131			
Surr: 4-Bromofluorobenzene	1.0		0.9434		106	80	120			

Sample ID **1610B31-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-6**	Batch ID: **28236**	RunNo: **38202**
Prep Date: **10/24/2016**	Analysis Date: **10/26/2016**	SeqNo: **1192388** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.023	0.9372	0	93.7	71.5	122	4.57	20	
Toluene	0.89	0.047	0.9372	0	95.0	71.2	123	6.51	20	
Ethylbenzene	0.92	0.047	0.9372	0	98.0	75.2	130	6.33	20	
Xylenes, Total	2.7	0.094	2.812	0	95.9	72.4	131	7.44	20	
Surr: 4-Bromofluorobenzene	0.99		0.9372		105	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1610B31 RcptNo: 1

Received by/date: CM 10/22/16

Logged By: Anne Thorne 10/22/2016 8:20:00 AM Anne Thorne

Completed By: Anne Thorne 10/24/2016 Anne Thorne

Reviewed By: ~~DS~~ JC 10/24/16

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes	-		

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. Suite 205 Farmington, NM

Phone #: 505 793 9456

email or Fax#: jwalker@ruleengineering.com

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

Accreditation: ☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time: ☐ Standard ☑ Rush 3 Day

Project Name: San Juan 28-7 #217

Project #:

Project Manager: Heather Woods

Sampler: Justin Walker

On Ice: ☑ Yes ☐ No

Sample Temperature: 3.4

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1610831
10/21/16	1020	Soil	SC-6	(1) 4oz Glass	Cold	001

Analysis Request

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)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)						Air Bubbles (Y or N)
+		+														

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/21/16	2:00	Justin Walker	Heather Woods	10/21/16	1400
10/21/16	2100	Relinquished by:	Received by:	10/22/16	0820

Remarks: WO: 21711107 User: KAITLW Super: Ervin Wigtoff

Direct Bill to Conoco Phillips

ordered by: Lisa Hunter

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.