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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Hilcorp Energy	Contact Clara Cardoza
Address 382 CR 3100	Telephone No. 505-564-0733
Facility Name Lucerne A 1	Facility Type Gas Well

Surface Owner BLM	Mineral Owner BLM (NM-010063	API No.30-045-07514

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	17	28N	11W	990	North	990	West	San Juan

Latitude 36.6667213 **Longitude** -108.0327835 NAD83

NATURE OF RELEASE

Type of Release Lube Oil (Historic)	Volume of Release Unknown	Volume Recovered none
Source of Release Unknown	Date and Hour of Occurrence Unknown	Date and Hour of Discovery August 15, 2017 3:00 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD (V Fields) and BLM (W Thomas)	
By Whom? Clara Cardoza	Date and Hour August 16, 2017 7:45 am & 7:40 respectively	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. n/a	

If a Watercourse was Impacted, Describe Fully.*

NMOCD
JUN 08 2018
DISTRICT III

Describe Cause of Problem and Remedial Action Taken.*
On August 15, 2017 during reclamation of Lucerne A 1 historic contamination was discovered.

Describe Area Affected and Cleanup Action Taken.*
Hilcorp Energy will delineate by excavation to remove the impacted soil. **Preliminary excavation revealed an area much greater than anticipated. A delineation was performed which followed with excavation to provide HEC with a better estimate on the area of impact. The total impacted soil removed and taken to Envirotech was approximately 4700 cubic yards and approximate area was 100 ft x 125 ft at a depth between 10 ft (north half) and 15 ft (south half). The facility is site ranked a 20. Attachment A is an excavation map depicting the area. Attachment B is the first round of confirmation sampling which included 17 samples. Attachment C were resamples of SC-2, 4, 5, 8, and 12. SC 18 and 19 were not included in the original samples so were tested at this time. SC-5 resample results came in with a TPH at 113 ppm. An alternative closure standard was requested for this sample and the approval is provided as Attachment D.**

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.

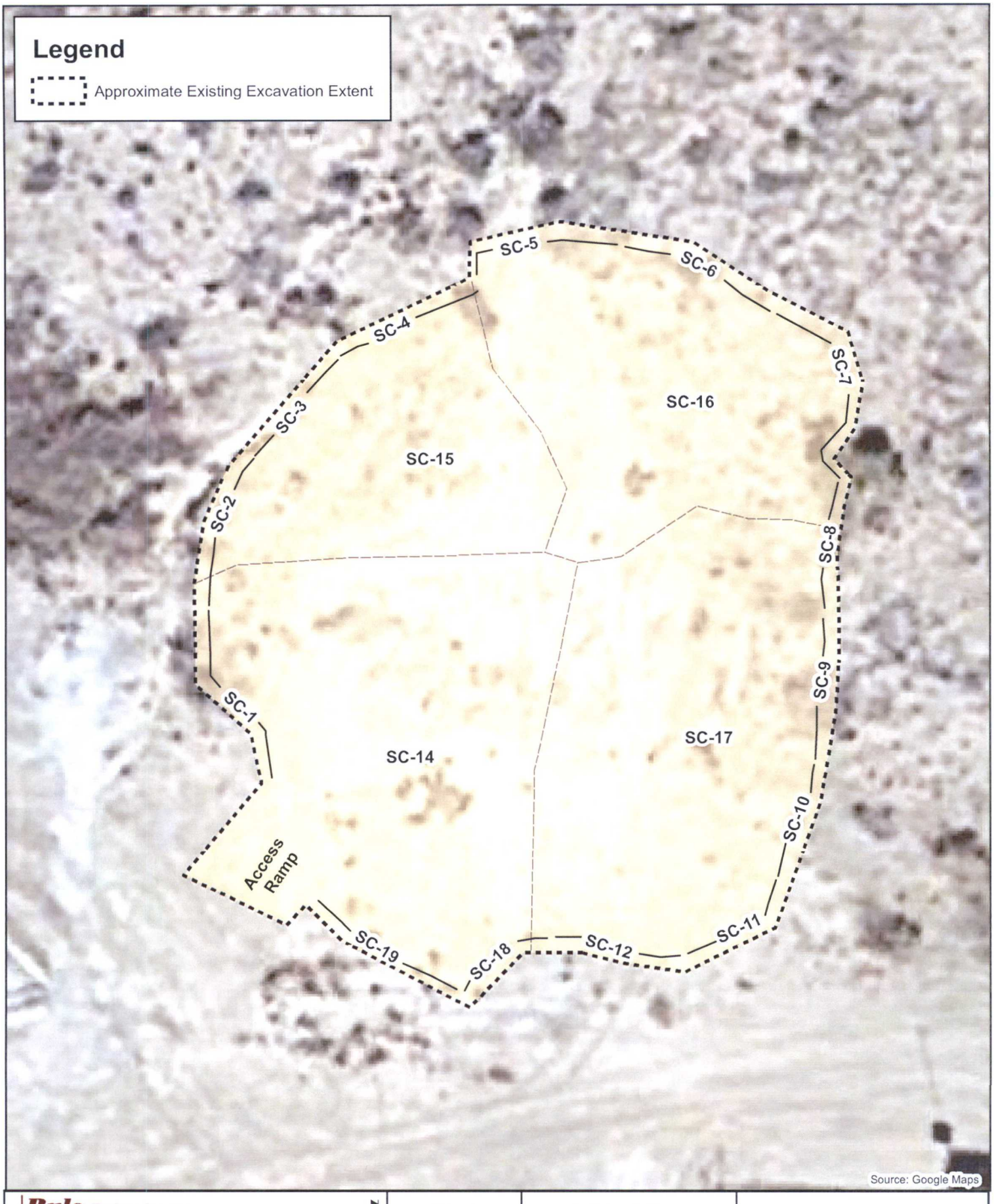
Signature: Clara Cardoza	OIL CONSERVATION DIVISION
Printed Name: Clara Cardoza	Approved by Environmental Specialist:
Title: Environmental Specialist	Approval Date: 6/12/18 Expiration Date:
E-mail Address: ccardoza@hilcorp.com	Conditions of Approval: — Attached ☐ —
Date: 06/05/2018 Phone: 505/564/0733	

* Attach Additional Sheets If Necessary

#NCS1723538706

48

ATTACHMENT A



Document Path: U:\Hillcorp\Lucerne A #1\1804411 Excavation Map.mxd

Rule Engineering, LLC
Solutions to Regulations for Industry

0 4 8 16 24 32 40 Feet
1 inch = 20 feet

Hilcorp

D-17-28N-11W
N36.66663, W108.03220
San Juan County, NM
API: 30-045-07514

Figure A
Excavation Map
Lucerne A #1

ATTACHMENT B

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

April 17, 2018

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

NMOCD
JUN 08 2018
DISTRICT III

RE: Lucerne A #1

OrderNo.: 1804551

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 17 sample(s) on 4/11/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-001 **Matrix:** SOIL

Client Sample ID: Conf-1
Collection Date: 4/10/2018 10:15:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/13/2018 2:04:40 PM	37570
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2018 2:04:40 PM	37570
Surr: DNOP	78.2	70-130		%Rec	1	4/13/2018 2:04:40 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/12/2018 11:32:16 PM	37551
Surr: BFB	106	15-316		%Rec	1	4/12/2018 11:32:16 PM	37551
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/12/2018 11:32:16 PM	37551
Toluene	ND	0.050		mg/Kg	1	4/12/2018 11:32:16 PM	37551
Ethylbenzene	ND	0.050		mg/Kg	1	4/12/2018 11:32:16 PM	37551
Xylenes, Total	ND	0.10		mg/Kg	1	4/12/2018 11:32:16 PM	37551
Surr: 4-Bromofluorobenzene	90.7	80-120		%Rec	1	4/12/2018 11:32:16 PM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-002 **Matrix:** SOIL

Client Sample ID: Conf-2
Collection Date: 4/10/2018 10:20:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	130	9.2		mg/Kg	1	4/13/2018 3:17:39 PM	37570
Motor Oil Range Organics (MRO)	95	46		mg/Kg	1	4/13/2018 3:17:39 PM	37570
Surr: DNOP	83.3	70-130		%Rec	1	4/13/2018 3:17:39 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 1:05:21 AM	37551
Surr: BFB	94.3	15-316		%Rec	1	4/13/2018 1:05:21 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/13/2018 1:05:21 AM	37551
Toluene	ND	0.048		mg/Kg	1	4/13/2018 1:05:21 AM	37551
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 1:05:21 AM	37551
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2018 1:05:21 AM	37551
Surr: 4-Bromofluorobenzene	87.3	80-120		%Rec	1	4/13/2018 1:05:21 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-003 **Matrix:** SOIL

Client Sample ID: Conf-3
Collection Date: 4/10/2018 10:25:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	94	9.9		mg/Kg	1	4/13/2018 3:42:04 PM	37570
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/13/2018 3:42:04 PM	37570
Surr: DNOP	84.6	70-130		%Rec	1	4/13/2018 3:42:04 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/13/2018 1:28:41 AM	37551
Surr: BFB	96.1	15-316		%Rec	1	4/13/2018 1:28:41 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	4/13/2018 1:28:41 AM	37551
Toluene	ND	0.050		mg/Kg	1	4/13/2018 1:28:41 AM	37551
Ethylbenzene	ND	0.050		mg/Kg	1	4/13/2018 1:28:41 AM	37551
Xylenes, Total	ND	0.10		mg/Kg	1	4/13/2018 1:28:41 AM	37551
Surr: 4-Bromofluorobenzene	87.7	80-120		%Rec	1	4/13/2018 1:28:41 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-004 **Matrix:** SOIL

Client Sample ID: Conf-4
Collection Date: 4/10/2018 10:30:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	110	9.5		mg/Kg	1	4/13/2018 4:06:25 PM	37570
Motor Oil Range Organics (MRO)	49	47		mg/Kg	1	4/13/2018 4:06:25 PM	37570
Surr: DNOP	84.0	70-130		%Rec	1	4/13/2018 4:06:25 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 1:52:00 AM	37551
Surr: BFB	97.9	15-316		%Rec	1	4/13/2018 1:52:00 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/13/2018 1:52:00 AM	37551
Toluene	ND	0.048		mg/Kg	1	4/13/2018 1:52:00 AM	37551
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 1:52:00 AM	37551
Xylenes, Total	ND	0.096		mg/Kg	1	4/13/2018 1:52:00 AM	37551
Surr: 4-Bromofluorobenzene	87.4	80-120		%Rec	1	4/13/2018 1:52:00 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-005 **Matrix:** SOIL

Client Sample ID: Conf-5
Collection Date: 4/10/2018 10:35:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	280	9.1		mg/Kg	1	4/13/2018 4:30:54 PM	37570
Motor Oil Range Organics (MRO)	110	46		mg/Kg	1	4/13/2018 4:30:54 PM	37570
Surr: DNOP	93.2	70-130		%Rec	1	4/13/2018 4:30:54 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2018 2:15:10 AM	37551
Surr: BFB	111	15-316		%Rec	1	4/13/2018 2:15:10 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	4/13/2018 2:15:10 AM	37551
Toluene	ND	0.049		mg/Kg	1	4/13/2018 2:15:10 AM	37551
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2018 2:15:10 AM	37551
Xylenes, Total	ND	0.099		mg/Kg	1	4/13/2018 2:15:10 AM	37551
Surr: 4-Bromofluorobenzene	92.5	80-120		%Rec	1	4/13/2018 2:15:10 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-006 **Matrix:** SOIL

Client Sample ID: Conf-6
Collection Date: 4/10/2018 10:39:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	15	9.3		mg/Kg	1	4/13/2018 4:55:13 PM	37570
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2018 4:55:13 PM	37570
Surr: DNOP	83.9	70-130		%Rec	1	4/13/2018 4:55:13 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 2:38:25 AM	37551
Surr: BFB	92.8	15-316		%Rec	1	4/13/2018 2:38:25 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/13/2018 2:38:25 AM	37551
Toluene	ND	0.048		mg/Kg	1	4/13/2018 2:38:25 AM	37551
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 2:38:25 AM	37551
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2018 2:38:25 AM	37551
Surr: 4-Bromofluorobenzene	88.4	80-120		%Rec	1	4/13/2018 2:38:25 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-007 **Matrix:** SOIL

Client Sample ID: Conf-7
Collection Date: 4/10/2018 10:45:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	22	9.4		mg/Kg	1	4/13/2018 5:19:35 PM	37570
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2018 5:19:35 PM	37570
Surr: DNOP	82.6	70-130		%Rec	1	4/13/2018 5:19:35 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2018 3:01:49 AM	37551
Surr: BFB	94.6	15-316		%Rec	1	4/13/2018 3:01:49 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/13/2018 3:01:49 AM	37551
Toluene	ND	0.049		mg/Kg	1	4/13/2018 3:01:49 AM	37551
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2018 3:01:49 AM	37551
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2018 3:01:49 AM	37551
Surr: 4-Bromofluorobenzene	87.0	80-120		%Rec	1	4/13/2018 3:01:49 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-008 **Matrix:** SOIL

Client Sample ID: Conf-8
Collection Date: 4/10/2018 10:50:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	390	10		mg/Kg	1	4/13/2018 5:43:54 PM	37570
Motor Oil Range Organics (MRO)	250	50		mg/Kg	1	4/13/2018 5:43:54 PM	37570
Surr: DNOP	90.4	70-130		%Rec	1	4/13/2018 5:43:54 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 3:25:13 AM	37551
Surr: BFB	96.1	15-316		%Rec	1	4/13/2018 3:25:13 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/13/2018 3:25:13 AM	37551
Toluene	ND	0.048		mg/Kg	1	4/13/2018 3:25:13 AM	37551
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 3:25:13 AM	37551
Xylenes, Total	ND	0.095		mg/Kg	1	4/13/2018 3:25:13 AM	37551
Surr: 4-Bromofluorobenzene	90.8	80-120		%Rec	1	4/13/2018 3:25:13 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-009 **Matrix:** SOIL

Client Sample ID: Conf-9
Collection Date: 4/10/2018 10:55:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/13/2018 6:08:22 PM	37570
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2018 6:08:22 PM	37570
Surr: DNOP	82.5	70-130		%Rec	1	4/13/2018 6:08:22 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/13/2018 3:48:26 AM	37551
Surr: BFB	98.7	15-316		%Rec	1	4/13/2018 3:48:26 AM	37551
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	4/13/2018 3:48:26 AM	37551
Toluene	ND	0.050		mg/Kg	1	4/13/2018 3:48:26 AM	37551
Ethylbenzene	ND	0.050		mg/Kg	1	4/13/2018 3:48:26 AM	37551
Xylenes, Total	ND	0.10		mg/Kg	1	4/13/2018 3:48:26 AM	37551
Surr: 4-Bromofluorobenzene	91.0	80-120		%Rec	1	4/13/2018 3:48:26 AM	37551

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-010 **Matrix:** SOIL

Client Sample ID: Conf-10
Collection Date: 4/10/2018 11:02:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	40	9.2		mg/Kg	1	4/13/2018 6:32:37 PM	37570
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2018 6:32:37 PM	37570
Surr: DNOP	93.7	70-130		%Rec	1	4/13/2018 6:32:37 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/13/2018 4:11:53 AM	37562
Surr: BFB	95.3	15-316		%Rec	1	4/13/2018 4:11:53 AM	37562
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	4/13/2018 4:11:53 AM	37562
Toluene	ND	0.046		mg/Kg	1	4/13/2018 4:11:53 AM	37562
Ethylbenzene	ND	0.046		mg/Kg	1	4/13/2018 4:11:53 AM	37562
Xylenes, Total	ND	0.092		mg/Kg	1	4/13/2018 4:11:53 AM	37562
Surr: 4-Bromofluorobenzene	90.5	80-120		%Rec	1	4/13/2018 4:11:53 AM	37562

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-011 **Matrix:** SOIL

Client Sample ID: Conf-11
Collection Date: 4/10/2018 11:05:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	32	9.2		mg/Kg	1	4/13/2018 6:57:01 PM	37570
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2018 6:57:01 PM	37570
Surr: DNOP	80.8	70-130		%Rec	1	4/13/2018 6:57:01 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 4:35:10 AM	37562
Surr: BFB	90.0	15-316		%Rec	1	4/13/2018 4:35:10 AM	37562
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/13/2018 4:35:10 AM	37562
Toluene	ND	0.048		mg/Kg	1	4/13/2018 4:35:10 AM	37562
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 4:35:10 AM	37562
Xylenes, Total	ND	0.095		mg/Kg	1	4/13/2018 4:35:10 AM	37562
Surr: 4-Bromofluorobenzene	87.1	80-120		%Rec	1	4/13/2018 4:35:10 AM	37562

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-012 **Matrix:** SOIL

Client Sample ID: Conf-12
Collection Date: 4/10/2018 11:10:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	110	9.2		mg/Kg	1	4/13/2018 7:21:11 PM	37570
Motor Oil Range Organics (MRO)	92	46		mg/Kg	1	4/13/2018 7:21:11 PM	37570
Surr: DNOP	88.7	70-130		%Rec	1	4/13/2018 7:21:11 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/13/2018 12:13:32 PM	37562
Surr: BFB	98.6	15-316		%Rec	1	4/13/2018 12:13:32 PM	37562
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	4/13/2018 12:13:32 PM	37562
Toluene	ND	0.047		mg/Kg	1	4/13/2018 12:13:32 PM	37562
Ethylbenzene	ND	0.047		mg/Kg	1	4/13/2018 12:13:32 PM	37562
Xylenes, Total	ND	0.094		mg/Kg	1	4/13/2018 12:13:32 PM	37562
Surr: 4-Bromofluorobenzene	92.8	80-120		%Rec	1	4/13/2018 12:13:32 PM	37562

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-013 **Matrix:** SOIL

Client Sample ID: Conf-13
Collection Date: 4/10/2018 11:11:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	50	9.4		mg/Kg	1	4/13/2018 7:45:28 PM	37570
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2018 7:45:28 PM	37570
Surr: DNOP	82.7	70-130		%Rec	1	4/13/2018 7:45:28 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 12:36:59 PM	37562
Surr: BFB	97.9	15-316		%Rec	1	4/13/2018 12:36:59 PM	37562
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/13/2018 12:36:59 PM	37562
Toluene	ND	0.048		mg/Kg	1	4/13/2018 12:36:59 PM	37562
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 12:36:59 PM	37562
Xylenes, Total	ND	0.096		mg/Kg	1	4/13/2018 12:36:59 PM	37562
Surr: 4-Bromofluorobenzene	90.6	80-120		%Rec	1	4/13/2018 12:36:59 PM	37562

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-014 **Matrix:** SOIL

Client Sample ID: Conf-14
Collection Date: 4/10/2018 11:20:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/13/2018 8:09:38 PM	37570
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/13/2018 8:09:38 PM	37570
Surr: DNOP	87.2	70-130		%Rec	1	4/13/2018 8:09:38 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 1:00:25 PM	37562
Surr: BFB	100	15-316		%Rec	1	4/13/2018 1:00:25 PM	37562
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/13/2018 1:00:25 PM	37562
Toluene	ND	0.048		mg/Kg	1	4/13/2018 1:00:25 PM	37562
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 1:00:25 PM	37562
Xylenes, Total	ND	0.096		mg/Kg	1	4/13/2018 1:00:25 PM	37562
Surr: 4-Bromofluorobenzene	91.9	80-120		%Rec	1	4/13/2018 1:00:25 PM	37562

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-017 **Matrix:** SOIL

Client Sample ID: Conf-15
Collection Date: 4/10/2018 5:22:00 PM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/13/2018 9:22:10 PM	37570
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/13/2018 9:22:10 PM	37570
Surr: DNOP	87.5	70-130		%Rec	1	4/13/2018 9:22:10 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2018 2:10:38 PM	37580
Surr: BFB	96.7	15-316		%Rec	1	4/13/2018 2:10:38 PM	37580
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	4/13/2018 2:10:38 PM	37580
Toluene	ND	0.049		mg/Kg	1	4/13/2018 2:10:38 PM	37580
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2018 2:10:38 PM	37580
Xylenes, Total	ND	0.099		mg/Kg	1	4/13/2018 2:10:38 PM	37580
Surr: 4-Bromofluorobenzene	87.9	80-120		%Rec	1	4/13/2018 2:10:38 PM	37580

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-015 **Matrix:** SOIL

Client Sample ID: Conf-16
Collection Date: 4/10/2018 11:10:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	46	9.3		mg/Kg	1	4/13/2018 8:33:48 PM	37570
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2018 8:33:48 PM	37570
Surr: DNOP	84.3	70-130		%Rec	1	4/13/2018 8:33:48 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/13/2018 1:23:37 PM	37562
Surr: BFB	108	15-316		%Rec	1	4/13/2018 1:23:37 PM	37562
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	4/13/2018 1:23:37 PM	37562
Toluene	ND	0.050		mg/Kg	1	4/13/2018 1:23:37 PM	37562
Ethylbenzene	ND	0.050		mg/Kg	1	4/13/2018 1:23:37 PM	37562
Xylenes, Total	ND	0.099		mg/Kg	1	4/13/2018 1:23:37 PM	37562
Surr: 4-Bromofluorobenzene	94.5	80-120		%Rec	1	4/13/2018 1:23:37 PM	37562

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A #1
Lab ID: 1804551-016 **Matrix:** SOIL

Client Sample ID: Conf-17
Collection Date: 4/10/2018 11:17:00 AM
Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/13/2018 8:57:58 PM	37570
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2018 8:57:58 PM	37570
Surr: DNOP	84.7	70-130		%Rec	1	4/13/2018 8:57:58 PM	37570
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2018 1:47:00 PM	37562
Surr: BFB	99.1	15-316		%Rec	1	4/13/2018 1:47:00 PM	37562
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/13/2018 1:47:00 PM	37562
Toluene	ND	0.048		mg/Kg	1	4/13/2018 1:47:00 PM	37562
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2018 1:47:00 PM	37562
Xylenes, Total	ND	0.096		mg/Kg	1	4/13/2018 1:47:00 PM	37562
Surr: 4-Bromofluorobenzene	91.7	80-120		%Rec	1	4/13/2018 1:47:00 PM	37562

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804551**

17-Apr-18

Client: Rule Engineering LLC

Project: Lucerne A #1

Sample ID **LCS-37570** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **37570** RunNo: **50538**

Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639334** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.4	70	130			
Surr: DNOP	3.6		5.000		71.1	70	130			

Sample ID **MB-37570** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **37570** RunNo: **50538**

Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639335** 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	8.1		10.00		80.9	70	130			

Sample ID **1804551-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **Conf-1** Batch ID: **37570** RunNo: **50538**

Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639675** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	49.95	0	95.8	55.8	125			
Surr: DNOP	4.0		4.995		79.3	70	130			

Sample ID **1804551-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **Conf-1** Batch ID: **37570** RunNo: **50538**

Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639676** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.7	48.26	0	94.7	55.8	125	4.65	20	
Surr: DNOP	3.8		4.826		78.6	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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804551**

17-Apr-18

Client: Rule Engineering LLC
Project: Lucerne A #1

Sample ID **MB-37562** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638726** 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		95.1	15	316			

Sample ID **LCS-37562** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638727** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	75.9	131			
Surr: BFB	1100		1000		111	15	316			

Sample ID **1804551-011AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Conf-11** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638730** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.8	23.88	0	116	77.8	128			
Surr: BFB	990		955.1		103	15	316			

Sample ID **1804551-011AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Conf-11** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638731** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.9	24.53	0	120	77.8	128	6.26	20	
Surr: BFB	1100		981.4		109	15	316	0	0	

Sample ID **MB-37551** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **37551** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638732** 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	980		1000		97.8	15	316			

Sample ID **LCS-37551** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **37551** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638733** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804551**

17-Apr-18

Client: Rule Engineering LLC
Project: Lucerne A #1

Sample ID **LCS-37551** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **37551** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638733** 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	114	75.9	131			
Surr: BFB	1100		1000		108	15	316			

Sample ID **MB-37580** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **37580** RunNo: **50542**
Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639961** 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	15	316			

Sample ID **LCS-37580** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **37580** RunNo: **50542**
Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639962** 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	114	75.9	131			
Surr: BFB	1200		1000		115	15	316			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804551**

17-Apr-18

Client: Rule Engineering LLC
Project: Lucerne A #1

Sample ID **MB-37562** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638765** 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	0.87		1.000		87.5	80	120			

Sample ID **LCS-37562** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638766** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.0	77.3	128			
Toluene	0.90	0.050	1.000	0	89.7	79.2	125			
Ethylbenzene	0.89	0.050	1.000	0	89.2	80.7	127			
Xylenes, Total	2.7	0.10	3.000	0	91.2	81.6	129			
Surr: 4-Bromofluorobenzene	0.91		1.000		90.8	80	120			

Sample ID **1804551-010AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Conf-10** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638768** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9671	0	94.1	68.5	133			
Toluene	0.90	0.048	0.9671	0	93.2	75	130			
Ethylbenzene	0.90	0.048	0.9671	0	92.9	79.4	128			
Xylenes, Total	2.7	0.097	2.901	0	94.8	77.3	131			
Surr: 4-Bromofluorobenzene	0.84		0.9671		87.1	80	120			

Sample ID **1804551-010AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Conf-10** Batch ID: **37562** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638769** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	0.9843	0	97.1	68.5	133	4.94	20	
Toluene	0.96	0.049	0.9843	0	97.0	75	130	5.79	20	
Ethylbenzene	0.94	0.049	0.9843	0	96.0	79.4	128	4.97	20	
Xylenes, Total	2.9	0.098	2.953	0	98.3	77.3	131	5.42	20	
Surr: 4-Bromofluorobenzene	0.87		0.9843		88.0	80	120	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804551**

17-Apr-18

Client: Rule Engineering LLC
Project: Lucerne A #1

Sample ID **MB-37551** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **37551** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638777** 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	0.86		1.000		86.4	80	120			

Sample ID **LCS-37551** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **37551** RunNo: **50508**
Prep Date: **4/11/2018** Analysis Date: **4/12/2018** SeqNo: **1638778** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.8	77.3	128			
Toluene	0.95	0.050	1.000	0	95.3	79.2	125			
Ethylbenzene	0.94	0.050	1.000	0	93.9	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	96.3	81.6	129			
Surr: 4-Bromofluorobenzene	0.88		1.000		88.4	80	120			

Sample ID **MB-37580** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **37580** RunNo: **50542**
Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639986** 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		95.0	80	120			

Sample ID **LCS-37580** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **37580** RunNo: **50542**
Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639987** 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	92.5	77.3	128			
Toluene	0.91	0.050	1.000	0	91.4	79.2	125			
Ethylbenzene	0.90	0.050	1.000	0	90.3	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	92.8	81.6	129			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804551**

17-Apr-18

Client: Rule Engineering LLC
Project: Lucerne A #1

Sample ID **1804551-017AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Conf-15** Batch ID: **37580** RunNo: **50542**
Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639989** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9425	0	111	68.5	133			
Toluene	1.0	0.047	0.9425	0	111	75	130			
Ethylbenzene	1.1	0.047	0.9425	0	112	79.4	128			
Xylenes, Total	3.2	0.094	2.828	0	114	77.3	131			
Surr: 4-Bromofluorobenzene	0.88		0.9425		93.0	80	120			

Sample ID **1804551-017AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Conf-15** Batch ID: **37580** RunNo: **50542**
Prep Date: **4/12/2018** Analysis Date: **4/13/2018** SeqNo: **1639990** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9950	0	101	68.5	133	3.84	20	
Toluene	1.0	0.050	0.9950	0	101	75	130	4.33	20	
Ethylbenzene	1.0	0.050	0.9950	0	100	79.4	128	5.71	20	
Xylenes, Total	3.1	0.10	2.985	0	102	77.3	131	4.85	20	
Surr: 4-Bromofluorobenzene	0.91		0.9950		91.0	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: **1804551** RcptNo: 1

Received By: **Erin Melendrez** 4/11/2018 7:50:00 AM

Completed By: **Erin Melendrez** 4/11/2018 8:58:14 AM

Reviewed By: JMO 4/11/18

Labled By: MW 4/11/18

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? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
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? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 4/11/18 (<2 or >12 unless noted)
Adjusted? MW
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	2.5	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: Lucerne A #1

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.5

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. 1804551	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)
4/10/18	1015	Soil	Conf-1	(1) 4oz Glass	Cold	-001	X		X													
	1020		Conf-2			-002																
	1025		Conf-3			-003																
	1030		Conf-4			-004																
	1035		Conf-5			-005																
	1039		Conf-6			-006																
	1045		Conf-7			-007																
	1050		Conf-8			-008																
	1055		Conf-9			-009																
	1102		Conf-10			-010																
	1105		Conf-11			-011																
	1110		Conf-12			-012																

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/10/18	1700	Justin Valdez	Christine Walls	4/10/18	1700
4/10/18	1856	Chris Walls	Courier 4/11/18 ENM	4/11/18	0750

Remarks: Direct Bill to Hillcorp

If nec y, samples submitted to Hall Environmental may be subcontracted to other accredited laborato This serves as notice of this p ility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Drive Suite 205 Farmington, NM 87401

Phone #: 505 793 9486

email or Fax#: jvalder@rukeengineering.com

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

Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name: Lucerne A #1

Project #:

Project Manager: Heather Woods

Sampler: Justin Valder / Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.5

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. 1804551	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)
4/10/18	1111	Soil	Conf-13	(1) 4oz Glass	Cold	-013	X		X													
	1120		Conf-14			-014	X		X													
	1110		Conf-16			-015	X		X													
	1117		Conf-17			-016	X		X													
4/10/18	1722	Soil	Conf-15	(1) 4oz Glass	Cold	-017	X		X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/10/18	1700	[signature]	[signature]	4/10/18	1700
4/10/18	1554	[signature]	[signature] courier 4/11/18 ENM	4/11/18	0750

Remarks: Direct Bill to Hillcorp

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.

ATTACHMENT C

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

April 30, 2018

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

NMOCD
JUN 08 2018
DISTRICT III

RE: Lucerne A 1 OrderNo.: 1804C32

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/25/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A 1
Lab ID: 1804C32-001 **Matrix:** SOIL

Client Sample ID: SC-2
Collection Date: 4/24/2018 9:40:00 AM
Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/28/2018 2:04:32 AM	37820
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/28/2018 2:04:32 AM	37820
Surr: DNOP	94.2	70-130		%Rec	1	4/28/2018 2:04:32 AM	37820
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/26/2018 7:44:12 PM	37799
Surr: BFB	91.7	15-316		%Rec	1	4/26/2018 7:44:12 PM	37799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/26/2018 7:44:12 PM	37799
Toluene	ND	0.047		mg/Kg	1	4/26/2018 7:44:12 PM	37799
Ethylbenzene	ND	0.047		mg/Kg	1	4/26/2018 7:44:12 PM	37799
Xylenes, Total	ND	0.095		mg/Kg	1	4/26/2018 7:44:12 PM	37799
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	4/26/2018 7:44:12 PM	37799

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A 1
Lab ID: 1804C32-002 **Matrix:** SOIL

Client Sample ID: SC-4
Collection Date: 4/24/2018 9:43:00 AM
Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/28/2018 2:26:38 AM	37820
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/28/2018 2:26:38 AM	37820
Surr: DNOP	89.4	70-130		%Rec	1	4/28/2018 2:26:38 AM	37820
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/26/2018 8:07:22 PM	37799
Surr: BFB	91.9	15-316		%Rec	1	4/26/2018 8:07:22 PM	37799
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/26/2018 8:07:22 PM	37799
Toluene	ND	0.047		mg/Kg	1	4/26/2018 8:07:22 PM	37799
Ethylbenzene	ND	0.047		mg/Kg	1	4/26/2018 8:07:22 PM	37799
Xylenes, Total	ND	0.095		mg/Kg	1	4/26/2018 8:07:22 PM	37799
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	4/26/2018 8:07:22 PM	37799

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A 1
Lab ID: 1804C32-003 **Matrix:** SOIL

Client Sample ID: SC-5
Collection Date: 4/24/2018 9:48:00 AM
Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	60	9.7		mg/Kg	1	4/28/2018 2:48:43 AM	37820
Motor Oil Range Organics (MRO)	53	48		mg/Kg	1	4/28/2018 2:48:43 AM	37820
Surr: DNOP	94.9	70-130		%Rec	1	4/28/2018 2:48:43 AM	37820
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/26/2018 8:30:30 PM	37799
Surr: BFB	90.0	15-316		%Rec	1	4/26/2018 8:30:30 PM	37799
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/26/2018 8:30:30 PM	37799
Toluene	ND	0.048		mg/Kg	1	4/26/2018 8:30:30 PM	37799
Ethylbenzene	ND	0.048		mg/Kg	1	4/26/2018 8:30:30 PM	37799
Xylenes, Total	ND	0.097		mg/Kg	1	4/26/2018 8:30:30 PM	37799
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	4/26/2018 8:30:30 PM	37799

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A 1
Lab ID: 1804C32-004 **Matrix:** SOIL

Client Sample ID: SC-8
Collection Date: 4/24/2018 9:56:00 AM
Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	4/28/2018 3:11:03 AM	37820
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/28/2018 3:11:03 AM	37820
Surr: DNOP	92.4	70-130		%Rec	1	4/28/2018 3:11:03 AM	37820
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/26/2018 8:53:41 PM	37799
Surr: BFB	90.3	15-316		%Rec	1	4/26/2018 8:53:41 PM	37799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/26/2018 8:53:41 PM	37799
Toluene	ND	0.047		mg/Kg	1	4/26/2018 8:53:41 PM	37799
Ethylbenzene	ND	0.047		mg/Kg	1	4/26/2018 8:53:41 PM	37799
Xylenes, Total	ND	0.095		mg/Kg	1	4/26/2018 8:53:41 PM	37799
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	4/26/2018 8:53:41 PM	37799

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A 1
Lab ID: 1804C32-005 **Matrix:** SOIL

Client Sample ID: SC-12
Collection Date: 4/24/2018 10:02:00 AM
Received Date: 4/25/2018 6:40:00 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	4/28/2018 3:33:10 AM	37820
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/28/2018 3:33:10 AM	37820
Surr: DNOP	84.2	70-130		%Rec	1	4/28/2018 3:33:10 AM	37820
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/26/2018 9:16:55 PM	37799
Surr: BFB	92.7	15-316		%Rec	1	4/26/2018 9:16:55 PM	37799
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	4/26/2018 9:16:55 PM	37799
Toluene	ND	0.048		mg/Kg	1	4/26/2018 9:16:55 PM	37799
Ethylbenzene	ND	0.048		mg/Kg	1	4/26/2018 9:16:55 PM	37799
Xylenes, Total	ND	0.097		mg/Kg	1	4/26/2018 9:16:55 PM	37799
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	4/26/2018 9:16:55 PM	37799

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A 1
Lab ID: 1804C32-006 **Matrix:** SOIL

Client Sample ID: SC-18
Collection Date: 4/24/2018 10:07:00 AM
Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/28/2018 3:55:24 AM	37820
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/28/2018 3:55:24 AM	37820
Surr: DNOP	91.4	70-130		%Rec	1	4/28/2018 3:55:24 AM	37820
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/26/2018 9:40:08 PM	37799
Surr: BFB	88.3	15-316		%Rec	1	4/26/2018 9:40:08 PM	37799
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/26/2018 9:40:08 PM	37799
Toluene	ND	0.049		mg/Kg	1	4/26/2018 9:40:08 PM	37799
Ethylbenzene	ND	0.049		mg/Kg	1	4/26/2018 9:40:08 PM	37799
Xylenes, Total	ND	0.098		mg/Kg	1	4/26/2018 9:40:08 PM	37799
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	4/26/2018 9:40:08 PM	37799

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lucerne A 1
Lab ID: 1804C32-007 **Matrix:** SOIL

Client Sample ID: SC-19
Collection Date: 4/24/2018 9:52:00 AM
Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	4/28/2018 4:17:29 AM	37820
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/28/2018 4:17:29 AM	37820
Surr: DNOP	92.0	70-130		%Rec	1	4/28/2018 4:17:29 AM	37820
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/26/2018 10:03:29 PM	37799
Surr: BFB	89.9	15-316		%Rec	1	4/26/2018 10:03:29 PM	37799
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	4/26/2018 10:03:29 PM	37799
Toluene	ND	0.050		mg/Kg	1	4/26/2018 10:03:29 PM	37799
Ethylbenzene	ND	0.050		mg/Kg	1	4/26/2018 10:03:29 PM	37799
Xylenes, Total	ND	0.10		mg/Kg	1	4/26/2018 10:03:29 PM	37799
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	4/26/2018 10:03:29 PM	37799

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804C32**

30-Apr-18

Client: Rule Engineering LLC
Project: Lucerne A 1

Sample ID **LCS-37831** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **37831** RunNo: **50882**
Prep Date: **4/27/2018** Analysis Date: **4/27/2018** SeqNo: **1651344** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		92.0	70	130			

Sample ID **MB-37831** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **37831** RunNo: **50882**
Prep Date: **4/27/2018** Analysis Date: **4/27/2018** SeqNo: **1651345** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		95.4	70	130			

Sample ID **LCS-37820** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **37820** RunNo: **50882**
Prep Date: **4/26/2018** Analysis Date: **4/27/2018** SeqNo: **1652240** 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	102	70	130			
Surr: DNOP	5.0		5.000		99.7	70	130			

Sample ID **MB-37820** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **37820** RunNo: **50882**
Prep Date: **4/26/2018** Analysis Date: **4/27/2018** SeqNo: **1652241** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804C32**

30-Apr-18

Client: Rule Engineering LLC
Project: Lucerne A 1

Sample ID **MB-37799** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **37799** RunNo: **50852**
Prep Date: **4/25/2018** Analysis Date: **4/26/2018** SeqNo: **1650625** 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	920		1000		92.5	15	316			

Sample ID **LCS-37799** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **37799** RunNo: **50852**
Prep Date: **4/25/2018** Analysis Date: **4/26/2018** SeqNo: **1650626** 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	75.9	131			
Surr: BFB	1000		1000		103	15	316			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1804C32**

30-Apr-18

Client: Rule Engineering LLC

Project: Lucerne A 1

Sample ID **MB-37799** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **37799** RunNo: **50852**

Prep Date: **4/25/2018** Analysis Date: **4/26/2018** SeqNo: **1650654** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID **LCS-37799** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **37799** RunNo: **50852**

Prep Date: **4/25/2018** Analysis Date: **4/26/2018** SeqNo: **1650655** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	77.3	128			
Toluene	1.0	0.050	1.000	0	103	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	102	80.7	127			
Xylenes, Total	3.1	0.10	3.000	0	105	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1804C32 RcptNo: 1

Received By: Erin Melendrez 4/25/2018 6:40:00 AM

Completed By: Erin Melendrez 4/25/2018 9:02:37 AM

Reviewed By: JMO 4/25/18

Labled By: 4/25/18 MW

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? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
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? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____
MW 4/25/18

Special Handling (if applicable)

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

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. Cooler Information

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

Chain-of-Custody Record

Client: Rule Engineering, LLC

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

Phone #: 505 993 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: Lucero A #1

Project #:

Project Manager: Heather Woods

Sampler: Justin Walder

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0°

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1804C32	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)
4/24/18	940	Soil	SC-2	1 4oz Glass	Cold	-001	X		X													
	943		SC-4			-002																
	948		SC-5			-003																
	956		SC-8			-004																
	1002		SC-12			-005																
	1007		SC-18			-006																
	952		SC-19			-007																

Date:	Time:	Relinquished by:	Received by:	Date Time
4/24/18	1125	[signature]	[signature]	4/24/18 1125
Date:	Time:	Relinquished by:	Received by:	Date Time
4/24/18	1800	[signature]	[signature]	04/25/18 0640

Remarks: Direct Bill to Hilcorp

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.

ATTACHMENT D

Clara Cardoza

From: Thomas, Leigh <l1thomas@blm.gov>
Sent: Tuesday, May 1, 2018 11:01 AM
To: Smith, Cory, EMNRD
Cc: Clara Cardoza; Adeloye, Abiodun; Fields, Vanessa, EMNRD; Scott, Sarah
Subject: [EXTERNAL E-MAIL] Re: [EXTERNAL] RE: UPDATED: Confirmation Sampling at Lucerne A1

The BLM agrees with OCDs decision to approve Hilcorps variance request and also approves the variance.

Thank you and if you have any question please let me know.

Whitney Thomas
Natural Resource Specialist
Farmington Field Office
6251 North College Boulevard
Suite A
Farmington, NM 87402
Office: 505-564-7680
Cell: 505-635-9796
email: l1thomas@blm.gov

On Tue, May 1, 2018 at 9:01 AM, Smith, Cory, EMNRD <Cory.Smith@state.nm.us> wrote:

Clara,

OCD Approves HEC request for alternative closure standards for SC-5. Please include HEC determination and this approval email in the Final C-141.

OCD approval does not relieve HEC of any other requirements imposed by other regulatory agencies.

Thank you,

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: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Tuesday, May 1, 2018 8:59 AM
To: 'Adeloye, Abiodun' <aadeloye@blm.gov>; Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; 'whitney thomas (l1thomas@blm.gov)' <l1thomas@blm.gov>
Subject: UPDATED: Confirmation Sampling at Lucerne A1

Please see update:

Attached please find the confirmation sampling taken on April 24th at the Lucerne A1. Hilcorp respectfully asks for a variance for sample SC-5. TPH returned at 113 ppm a significant reduced from the previous sample of 390 ppm. Hilcorp believes the residual contaminates do not pose a present or foreseeable threat or an environmental risk to water, humans or animals, and requests approval to backfill the excavation. I have also included the previous confirmation sample results and excavation map for your convenience. Please let me know if you have any questions.

Thank you for your consideration,

Clara

From: Clara Cardoza
Sent: Monday, April 30, 2018 3:08 PM
To: Adeloye, Abiodun <aadeloye@blm.gov>; Smith, Cory, EMNRD <cory.smith@state.nm.us>
Cc: Fields, Vanessa, EMNRD <vanessa.fields@state.nm.us>; whitney thomas (l1thomas@blm.gov) <l1thomas@blm.gov>
Subject: RE: [EXTERNAL E-MAIL] Re: [EXTERNAL] RE: Confirmation Sampling at Lucerne A1

Attached please find the confirmation sampling taken on April 24th at the Lucerne A1. Hilcorp respectfully asks for a variance for sample SC-5. TPH returned at 113 ppm a significant reduced from the previous sample of 390 ppm. I have