



January 15, 2018

SMA #5E26774, BG1

Ms. Susan Cone  
RDL Excavation and Construction  
91 GR Howard Rd  
Loving, NM 88256

**RE: LETTER REPORT SUMMARIZING THE FRESH WATER RELEASE AT THE STATE  
CALICHE PIT #471 SITE (2RP-4485), EDDY COUNTY, NEW MEXICO**

Dear Ms. Cone:

Souder, Miller & Associates (SMA) is submitting this letter report to summarize the December 20, 2017 spill response at the Caliche Pit #471 site. The site is located in Section 17 T19S R29E, Eddy County, New Mexico, on land owned by New Mexico State Land Office (NMSLO).

## **1.0 SUMMARY OF FIELD ACTIVITIES**

On December 20, 2017, SMA responded to a request to conduct soil sampling of a fresh water release at the Caliche Pit #471 site. The release occurred when approximately 60 barrels of fresh water from the Alfadale Water Station was released from a tank temporarily stored at the site, which is owned by NMSLO. Two discreet sample locations were selected by New Mexico State Land Office personnel, and a total of three soil samples were collected. Sample location L1 represents the point of release, and a surface sample at 0.5 feet was collected. Sample location L2 is in the center of the pooling area, and a surface sample at 0.5 feet, as well as a one-foot sample, were collected at this location. In addition, a water sample (sample W1) was collected from the Alfadale water station.

The samples were collected in laboratory provided containers and submitted to Hall Environmental Analysis Laboratory in Albuquerque, NM. All samples were analyzed for chlorides (EPA Method 300); sample L2 at 0.5 foot was analyzed for GRO, DRO, and MRO (EPA Method 8015) and BTEX (EPA Method 8021); water sample W1 was additionally sampled for hardness (SM2340), sodium adsorption ration, anions (EPA Method 300), specific conductance (SM2510), alkalinity (SM2320), total dissolved solids (SM2540), dissolved metals (EPA Method 200), and metals (EPA Method 200).

The laboratory report is included in Appendix A.

## **2.0 CONCLUSION AND RECOMMENDATION**

As evidenced in the resultant lab summary, there was little to no chloride or hydrocarbon impact from this fresh water release compared to background. Per State regulation, water with a TDS of 4000 ppm or higher requires a discharge permit from NMED. In this case, the Alfadale water has a TDS of 3530 mg/L, therefore no regulatory permitting is required. SMA recommends no

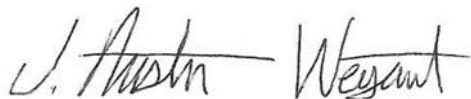
further action at the Caliche Pit #471 site. The results of the soil sampling event conducted on December 20, 2017 indicate that subsurface contaminant concentrations are below NMOCD regulatory standard limits for hydrocarbons and NMED standards for TDS.

SMA recommends that RDL tests all future fresh water sources yearly, or request water sample results from your water provider, and keep this information in your records. While NMED considers water with TDS under 6000 to be fresh water, if that water has a TDS of 4000 or greater you will be required to obtain a discharge permit for any discharge over 200 gallons per day.

The scope of our services consisted of the performance of soil sample collection and preparation of this summary report. All work has been performed in accordance with generally accepted professional environmental consulting practices for releases in the Permian Basin in New Mexico.

Souder, Miller and Associates appreciates the opportunity to provide environmental services to you. If you have any questions or comments concerning this report, please feel free to call me at 575.689.7040.

Sincerely,  
Souder, Miller & Associates



Austin Weyant  
Project Scientist



Shawna Chubbuck  
Senior Scientist

**Figures:**

Figure 1: Site and Sample Map

**Table:**

Table 1: Laboratory Summary

**Appendices**

Appendix A: Hall Environmental Analysis Laboratory Reports

Appendix B: Initial and Final C-141

**FIGURE 1  
SITE AND SAMPLE MAP**



**Legend**

- Caliche Pit 471
- Alfadale Water Station
- Sample Locations
- Spill Area

Site and Sample Location Map  
 Caliche Pit 471 - RDL  
 S 17-T19S-R29E, New Mexico

Figure 1

**TABLE 1**  
**LABORATORY SUMMARY**

## RDL - Caliche Pit #471

Table 1.

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	TDS mg/L	Cl-Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 0			50 mg/Kg	10 mg/Kg				5000 mg/Kg		
L1	12/20/2017	0.5	--	--	--	--	--	--	--	330
L2	12/20/2017	0.5	<0.23	<0.023	<4.7	<9.7	<48	<63	--	59
	12/20/2017	1	--	--	--	--	--	--	--	73
W1	12/20/2017	NA	--	--	--	--	--	--	3530	780

"--" = Not Analyzed

**APPENDIX A**  
**HALL ENVIRONMENTAL ANALYSIS LABORATORY REPORTS**



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

January 15, 2018

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: RDL

OrderNo.: 1712E27

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/23/2017 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](http://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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1712E27

Date Reported: 1/15/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-0.5

**Project:** RDL

**Collection Date:** 12/20/2017 1:40:00 PM

**Lab ID:** 1712E27-001

**Matrix:** SOIL

**Received Date:** 12/23/2017 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	330	30		mg/Kg	20	1/10/2018 6:33:04 PM	35914

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

<b>Qualifiers:</b>	*	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 Quantitative 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.

## Analytical Report

Lab Order 1712E27

Date Reported: 1/15/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-0.5

**Project:** RDL

**Collection Date:** 12/20/2017 1:42:00 PM

**Lab ID:** 1712E27-002

**Matrix:** SOIL

**Received Date:** 12/23/2017 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	59	30		mg/Kg	20	1/10/2018 6:45:28 PM	35914
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/29/2017 4:48:19 PM	35725
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/29/2017 4:48:19 PM	35725
Surr: DNOP	71.7	70-130		%Rec	1	12/29/2017 4:48:19 PM	35725
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2017 1:51:07 PM	35713
Surr: BFB	85.4	15-316		%Rec	1	12/28/2017 1:51:07 PM	35713
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	12/28/2017 1:51:07 PM	35713
Benzene	ND	0.023		mg/Kg	1	12/28/2017 1:51:07 PM	35713
Toluene	ND	0.047		mg/Kg	1	12/28/2017 1:51:07 PM	35713
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2017 1:51:07 PM	35713
Xylenes, Total	ND	0.094		mg/Kg	1	12/28/2017 1:51:07 PM	35713
Surr: 4-Bromofluorobenzene	96.7	80-120		%Rec	1	12/28/2017 1:51:07 PM	35713

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

<b>Qualifiers:</b>	*	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 Quantitative 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.

## Analytical Report

Lab Order 1712E27

Date Reported: 1/15/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-1

**Project:** RDL

**Collection Date:** 12/20/2017 1:45:00 PM

**Lab ID:** 1712E27-003

**Matrix:** SOIL

**Received Date:** 12/23/2017 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	73	30		mg/Kg	20	1/11/2018 9:40:32 AM	35914

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

<b>Qualifiers:</b>	*	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 Quantitative 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.

## Analytical Report

Lab Order 1712E27

Date Reported: 1/15/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** W1

**Project:** RDL

**Collection Date:** 12/20/2017 2:30:00 PM

**Lab ID:** 1712E27-004

**Matrix:** AQUEOUS

**Received Date:** 12/23/2017 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>SM2340B: HARDNESS</b>							Analyst: <b>pmf</b>
Hardness (As CaCO3)	2800	6.6		mg/L	1	1/4/2018	R48200
<b>SODIUM ADSORPTION RATIO</b>							Analyst: <b>pmf</b>
Sodium Absorption Ratio	4.5	0			1	1/4/2018	R48200
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Fluoride	0.60	0.10		mg/L	1	12/29/2017 1:10:22 PM	R48161
Chloride	780	25	*	mg/L	50	1/9/2018 10:08:01 PM	R48335
Sulfate	1700	25	*	mg/L	50	1/9/2018 10:08:01 PM	R48335
Nitrate+Nitrite as N	ND	1.0		mg/L	5	12/29/2017 2:24:51 PM	R48161
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	3400	5.0		µmhos/cm	1	12/27/2017 8:12:36 PM	R48063
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO3)	67.40	20.00		mg/L CaCO3	1	12/27/2017 8:12:36 PM	R48063
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	12/27/2017 8:12:36 PM	R48063
Total Alkalinity (as CaCO3)	67.40	20.00		mg/L CaCO3	1	12/27/2017 8:12:36 PM	R48063
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	3530	40.0	*D	mg/L	1	1/3/2018 2:07:00 PM	35734
<b>SM4500-H+B: PH</b>							Analyst: <b>JRR</b>
pH	7.51		H	pH units	1	12/27/2017 8:12:36 PM	R48063
<b>EPA METHOD 200.7: DISSOLVED METALS</b>							Analyst: <b>pmf</b>
Boron	0.43	0.040		mg/L	1	1/2/2018 7:16:00 PM	A48123
Calcium	690	10		mg/L	10	1/3/2018 9:37:26 PM	B48179
Magnesium	250	10		mg/L	10	1/4/2018 8:34:07 PM	B48200
Silica	26	1.7		mg/L	10	1/4/2018 8:34:07 PM	B48200
<b>EPA METHOD 200.7: METALS</b>							Analyst: <b>pmf</b>
Calcium	720	10		mg/L	10	1/4/2018 8:07:06 PM	B48200
Magnesium	250	5.0		mg/L	5	1/4/2018 8:05:10 PM	B48200
Potassium	ND	5.0		mg/L	5	1/4/2018 8:05:10 PM	B48200
Sodium	550	10		mg/L	10	1/4/2018 8:07:06 PM	B48200

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

<b>Qualifiers:</b>	*	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
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	PQL	Practical Quantitative 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#: 1712E27

15-Jan-18

**Client:** Souder, Miller & Associates

**Project:** RDL

Sample ID <b>MB-A</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>A48123</b>		RunNo: <b>48123</b>							
Prep Date:	Analysis Date: <b>1/2/2018</b>		SeqNo: <b>1544025</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040								

Sample ID <b>LCSLL-A</b>	SampType: <b>LCSLL</b>		TestCode: <b>EPA Method 200.7: Metals</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>A48123</b>		RunNo: <b>48123</b>							
Prep Date:	Analysis Date: <b>1/2/2018</b>		SeqNo: <b>1544027</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	94.7	50	150			

Sample ID <b>LCS-A</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 200.7: Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>A48123</b>		RunNo: <b>48123</b>							
Prep Date:	Analysis Date: <b>1/2/2018</b>		SeqNo: <b>1544029</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.50	0.040	0.5000	0	99.9	85	115			

Sample ID <b>MB-B</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>B48179</b>		RunNo: <b>48179</b>							
Prep Date:	Analysis Date: <b>1/3/2018</b>		SeqNo: <b>1546046</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								

Sample ID <b>LCSLL-B</b>	SampType: <b>LCSLL</b>		TestCode: <b>EPA Method 200.7: Metals</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>B48179</b>		RunNo: <b>48179</b>							
Prep Date:	Analysis Date: <b>1/3/2018</b>		SeqNo: <b>1546047</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	107	50	150			

Sample ID <b>LCS-B</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 200.7: Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>B48179</b>		RunNo: <b>48179</b>							
Prep Date:	Analysis Date: <b>1/3/2018</b>		SeqNo: <b>1546048</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	100	85	115			

### 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 Quantitative 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#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB-B	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: B48200			RunNo: 48200					
Prep Date:		Analysis Date: 1/4/2018			SeqNo: 1547199		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Silica	ND	0.17								
Sodium	ND	1.0								

Sample ID	LCSLL-B			SampType:	LCSLL			TestCode:	EPA Method 200.7: Metals		
Client ID:	BatchQC			Batch ID:	B48200			RunNo:	48200		
Prep Date:				Analysis Date:	1/4/2018			SeqNo:	1547200	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Calcium	ND	1.0	0.5000	0	105	50	150				
Magnesium	ND	1.0	0.5000	0	104	50	150				
Potassium	ND	1.0	0.5000	0	98.1	50	150				
Silica	0.17	0.17	0.1712	0	102	50	150				
Sodium	ND	1.0	0.5000	0	99.6	50	150				

Sample ID	LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: B48200		RunNo: 48200					
Prep Date:			Analysis Date: 1/4/2018		SeqNo: 1547201		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.0	85	115			
Magnesium	49	1.0	50.00	0	98.3	85	115			
Potassium	48	1.0	50.00	0	96.3	85	115			
Silica	5.5	0.17	5.350	0	103	85	115			
Sodium	48	1.0	50.00	0	96.5	85	115			

### Qualifiers:

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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB-A		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID:	A48123		RunNo:	48123				
Prep Date:			Analysis Date:	1/2/2018		SeqNo:	1544733	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Boron	ND	0.040									

Sample ID	LCSLL-A		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A48123		RunNo: 48123					
Prep Date:			Analysis Date: 1/2/2018		SeqNo: 1544735		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	94.7	50	150			

Sample ID	LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A48123		RunNo: 48123					
Prep Date:			Analysis Date: 1/2/2018		SeqNo: 1544737		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.50	0.040	0.5000	0	99.9	85	115			

Sample ID	MB-B		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID:	B48179		RunNo:	48179				
Prep Date:			Analysis Date:	1/3/2018		SeqNo:	1546253	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Calcium	ND	1.0									

Sample ID	LCSLL-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B48179		RunNo: 48179					
Prep Date:			Analysis Date: 1/3/2018		SeqNo: 1546254		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	107	50	150			

Sample ID	LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B48179		RunNo: 48179					
Prep Date:			Analysis Date: 1/3/2018		SeqNo: 1546255		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	100	85	115			

### Qualifiers:

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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB-B	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: B48200			RunNo: 48200					
Prep Date:		Analysis Date: 1/4/2018			SeqNo: 1547844		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Silica	ND	0.17								
Sodium	ND	1.0								

Sample ID	LCSLL-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B48200		RunNo: 48200					
Prep Date:			Analysis Date: 1/4/2018		SeqNo: 1547845		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	105	50	150			
Magnesium	ND	1.0	0.5000	0	104	50	150			
Potassium	ND	1.0	0.5000	0	98.1	50	150			
Silica	0.17	0.17	0.1712	0	102	50	150			
Sodium	ND	1.0	0.5000	0	99.6	50	150			

Sample ID	LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B48200		RunNo: 48200					
Prep Date:			Analysis Date: 1/4/2018		SeqNo: 1547846		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.0	85	115			
Magnesium	49	1.0	50.00	0	98.3	85	115			
Potassium	48	1.0	50.00	0	96.3	85	115			
Silica	5.5	0.17	5.350	0	103	85	115			
Sodium	48	1.0	50.00	0	96.5	85	115			

### Qualifiers:

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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB-35914		SampType:	mblik		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	35914		RunNo:	48339				
Prep Date:	1/8/2018		Analysis Date:	1/9/2018		SeqNo:	1552593		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-35914		SampType:	lcs		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS		Batch ID:	35914		RunNo:	48339				
Prep Date:	1/8/2018		Analysis Date:	1/9/2018		SeqNo:	1552594		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	15	1.5	15.00	0	97.7	90	110				

### Qualifiers:

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D Sample Diluted Due to Matrix  
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ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB	SampType: mblk			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R48161			RunNo: 48161					
Prep Date:		Analysis Date: 12/29/2017			SeqNo: 1545193		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R48161		RunNo: 48161					
Prep Date:			Analysis Date: 12/29/2017		SeqNo: 1545194		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	110	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Sample ID	1712E27-004AMS		SampType: ms		TestCode: EPA Method 300.0: Anions					
Client ID:	W1		Batch ID: R48161		RunNo: 48161					
Prep Date:			Analysis Date: 12/29/2017		SeqNo: 1545205		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.0	0.10	0.5000	0.4068	122	68.4	112			S
Bromide	2.7	0.10	2.500	2.298	17.0	77	108			S

Sample ID	1712E27-004AMSD		SampType:	msd		TestCode:	EPA Method 300.0: Anions				
Client ID:	W1		Batch ID:	R48161		RunNo:	48161				
Prep Date:			Analysis Date:	12/29/2017		SeqNo:	1545206		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Fluoride	1.0	0.10	0.5000	0.4068	121	68.4	112	0.215	20	S	

Sample ID	MB		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBW		Batch ID: R48335		RunNo: 48335					
Prep Date:			Analysis Date: 1/9/2018		SeqNo: 1552451		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R48335		RunNo: 48335					
Prep Date:			Analysis Date: 1/9/2018		SeqNo: 1552452		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.7	90	110			

### Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative 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#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	LCS		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R48335		RunNo: 48335					
Prep Date:			Analysis Date: 1/9/2018		SeqNo: 1552452		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	98.7	90	110			

### Qualifiers:

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D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	LCS-35725		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 35725		RunNo: 48095					
Prep Date:	12/27/2017		Analysis Date: 12/29/2017		SeqNo: 1542186		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.7	73.2	114			
Surr: DNOP	4.3		5.000		86.4	70	130			

Sample ID	MB-35725	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 35725			RunNo: 48095					
Prep Date:	12/27/2017	Analysis Date: 12/29/2017			SeqNo: 1542187		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	8.6		10.00		86.1	70	130			

### Qualifiers:

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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB-35713		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 35713		RunNo: 48084					
Prep Date:	12/26/2017		Analysis Date: 12/28/2017		SeqNo: 1541225		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	840		1000		84.1	15	316			

Sample ID	LCS-35713		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 35713		RunNo: 48084					
Prep Date:	12/26/2017		Analysis Date: 12/28/2017		SeqNo: 1541226		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	104	75.9	131			
Surr: BFB	950		1000		94.5	15	316			

Sample ID	1712E27-002AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	L2-0.5		Batch ID: 35713		RunNo: 48084					
Prep Date:	12/26/2017		Analysis Date: 12/28/2017		SeqNo: 1541233		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	23.79	0	104	77.8	128			
Surr: BFB	870		951.5		91.9	15	316			

Sample ID	1712E27-002AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	L2-0.5		Batch ID:	35713		RunNo:	48084				
Prep Date:	12/26/2017		Analysis Date:	12/28/2017		SeqNo:	1541234		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	25	4.7	23.43	0	106	77.8	128	0.0916	20		
Surr: BFB	870		937.2		93.2	15	316	0	0		

### Qualifiers:

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H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB-35713		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 35713		RunNo: 48084					
Prep Date:	12/26/2017		Analysis Date: 12/28/2017		SeqNo: 1541267		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.4	80	120			

Sample ID	LCS-35713		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 35713		RunNo: 48084					
Prep Date:	12/26/2017		Analysis Date: 12/28/2017		SeqNo: 1541268		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.90	0.10	1.000	0	90.3	70.1	121			
Benzene	0.85	0.025	1.000	0	85.2	77.3	128			
Toluene	0.87	0.050	1.000	0	86.6	79.2	125			
Ethylbenzene	0.86	0.050	1.000	0	85.6	80.7	127			
Xylenes, Total	2.6	0.10	3.000	0	87.7	81.6	129			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.2	80	120			

### Qualifiers:

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ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	lcs-1 ~20uS eC		SampType: LCS			TestCode: SM2510B: Specific Conductance					
Client ID:	LCSW		Batch ID: R48063			RunNo: 48063					
Prep Date:			Analysis Date: 12/27/2017			SeqNo: 1540527		Units: µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Conductivity	23	5.0	19.96	0	114	80	120				

Sample ID	lcs-2 ~20uS eC		SampType: LCS			TestCode: SM2510B: Specific Conductance					
Client ID:	LCSW		Batch ID: R48063			RunNo: 48063					
Prep Date:			Analysis Date: 12/27/2017			SeqNo: 1540553		Units: µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Conductivity	23	5.0	19.96	0	113	80	120				

### Qualifiers:

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ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	mb-1 alk		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R48063		RunNo: 48063					
Prep Date:			Analysis Date: 12/27/2017		SeqNo: 1540483		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1 alk		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R48063		RunNo: 48063					
Prep Date:			Analysis Date: 12/27/2017		SeqNo: 1540484		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.88	20.00	80.00	0	98.6	90	110			

Sample ID	mb-2 alk		SampType:	MBLK		TestCode:	SM2320B: Alkalinity				
Client ID:	PBW		Batch ID:	R48063		RunNo:	48063				
Prep Date:			Analysis Date:	12/27/2017		SeqNo:	1540507		Units:	mg/L CaCO3	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20.00									

Sample ID	lcs-2 alk		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R48063		RunNo: 48063					
Prep Date:			Analysis Date: 12/27/2017		SeqNo: 1540508		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.24	20.00	80.00	0	97.8	90	110			

### Qualifiers:

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D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

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

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1712E27

15-Jan-18

Client: Souder, Miller &amp; Associates

Project: RDL

Sample ID	MB-35734		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	35734		RunNo:	48156				
Prep Date:	12/27/2017		Analysis Date:	1/3/2018		SeqNo:	1545151	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-35734		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	35734		RunNo:	48156				
Prep Date:	12/27/2017		Analysis Date:	1/3/2018		SeqNo:	1545152		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1030	20.0	1000	0	103	80	120				

### Qualifiers:

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

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J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



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: SMA-CARLSBAD

Work Order Number: 1712E27

ReptNo: 1

Received By: Andy Freeman

12/23/2017 8:30:00 AM

Completed By: Michelle Garcia

12/26/2017 10:25:19 AM

Reviewed By: DDS

12/26/17

*Michelle Garcia*

### Chain of Custody

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

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: 3  
( $<2$  or  $>12$  unless noted)  
Adjusted? No  
Checked by: mx

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

# Chain-of-Custody Record

Client: SMA - Carlisle

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Date Time Matrix Sample Request ID

1/24/17 1:40 Soil L1-0.5  
1:42 L2-0.5  
1:45 L2-1

2:30 Water W1

Date: 1/24/17 Time: 0830 Relinquished by: [Signature]

Date: 1/24/17 Time: 1900 Relinquished by: [Signature]

Turn-Around Time: 5 day

☒ Standard ☐ Rush

Project Name:

DDL

Project #:

Project Manager:

Austin Bryant

Sampler: Heather Patterson

On loc: ☒ Yes ☐ No

Sample Temperature: 1.7 + 0.1 = 1.8°C

Container Type and #

402

[Signature]

Various

HEAL No.

1712E27

001

002

003

004

Received by: [Signature] Date: 1/24/17 Time: 0830

Received by: [Signature] Date: 1/23/17 Time: 0830

Remarks:

## Analysis Request

BTEX + MTBE + TMBs (6021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAHs (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F<sup>-</sup>, Cl<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>)

8081 Pesticides / 8082 PCBs

8260B (VOA)

8270 (Semi-VOA)

Air Bubbles (Y or N)

See attached

X



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

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.



### Water Quality Analysis

Sample Date: 10/3/1970 Sample Time: 0000 Sample Number: 1 Collection Entity: Texas Water Development Board

Sampled Aquifer: Cenozoic Pecos Alluvium and Lower Cretaceous  
Rocks

Analyzed Lab: Texas Department of Health

Reliability: Reliability unknown or not available

Collection Remarks: PUMPED MANY HRS; FROM 5 FT. DIS

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MGL)	0	0	mg/L	
00410	ALKALINITY, TOTAL (MGL AS CaCO <sub>3</sub> )	0	210	mg/L	
00440	BICARBONATE ION, CALCULATED (MGL AS HCO <sub>3</sub> )	0	258	mg/L	
01020	BORON, DISSOLVED (MGL AS B)	0	500	ug/L	
00010	CALCIUM (MGL)	0	230	mg/L	
00445	CARBONATE ION, CALCULATED (MGL AS CO <sub>3</sub> )	0	0	mg/L	
00940	CHLORIDE, TOTAL (MGL AS CL)	0	690	mg/L	
00950	FLUORIDE, DISSOLVED (MGL AS F)	0	1.2	mg/L	
00000	HARDNESS, TOTAL, CALCULATED (MGL AS CaCO <sub>3</sub> )	0	940	mg/L	
00920	MAGNESIUM (MGL)	0	86	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MGL AS NO <sub>3</sub> )	0	0.4	mg/L	
00430	PH (STANDARD UNITS), FIELD	0	7.2	SU	
00937	POTASSIUM, TOTAL (MGL AS K)	0	18	mg/L	
71830	RESIDUAL SODIUM CARBONATE, CALCULATED	0	0		
00955	SILICA, DISSOLVED (MGL AS SiO <sub>2</sub> )	0	29	mg/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)	0	5.77		
00932	SODIUM, CALCULATED, PERCENT	0	46	PCT	
00929	SODIUM, TOTAL (MGL AS Na)	0	407	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)	0	4402	MICH	
00046	SULFATE, TOTAL (MGL AS SO <sub>4</sub> )	0	680	mg/L	
00010	TEMPERATURE, WATER (CELSIUS)	0	27	C	
70301	TOTAL DISSOLVED SOLIDS, SUM OF CONSTITUENTS (MGL)	0	2273	mg/L	

\* Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork.

**GWDB DISCLAIMER:** Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (<http://www.twdb.texas.gov/groundwaterdata/gwdb.asp>) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in this or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically declines any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at [GroundwaterData@twdb.texas.gov](mailto:GroundwaterData@twdb.texas.gov).

**APPENDIX B**  
**INITIAL AND FINAL C-141**

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

OC District II  
Received on  
9/28/17

Form C-141  
Revised April 3, 2017

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

PAB1732039240		Release Notification and Corrective Action	
NAB1732039551		#315219 OPERATOR	
<input checked="" type="checkbox"/> Initial Report		<input type="checkbox"/> Final Report	
Name of Company	RUL Excavation & Constr.	Contact	Susan Cone
Address	9128 Howard Rd	Telephone No.	575-495-5376
Facility Name	Caliche Pit 471	Facility Type	Caliche Pit
Surface Owner	State of NM	Mineral Owner	State of NM
API No.			

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	17	19S	29E					Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ NAD83

NATURE OF RELEASE approx 60 bbls

Type of Release	Fresh Water	Volume of Release	approx 60 bbls	Volume Recovered	
Source of Release	Fresh Water	Date and Hour of Occurrence		Date and Hour of Discovery	9/17/17
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	by Robert Kasuboski		
By Whom?	by	Date and Hour	6:20 pm email		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

not needed for Freshwater

Describe Area Affected and Cleanup Action Taken.\*

not needed for Freshwater

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: Susan Cone		OIL CONSERVATION DIVISION	
Printed Name: Susan Cone		Approved by Environmental Specialist: [Signature]	
Title: President		Approval Date: 11/14/17	Expiration Date: N/A
E-mail Address: sdleca@live.com		Conditions of Approval: see attached	Attached: 285-4485
Date: 9/28/17	Phone: 575-495-		

\* Attach Additional Sheets If Necessary

5376

Operator/Responsible Party,

The OCD has received the form C-141 you provided on **9/28/17** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4485 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

*The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]*

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District II office in Artesia on or before 11/24/17. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

**Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.**

**Jim Griswold**

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

[jim.griswold@state.nm.us](mailto:jim.griswold@state.nm.us)



District I  
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District III  
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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141  
Revised April 3, 2017

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

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 RDL Excavation and Construction	Contact Susan Cone	
Address 91 GR Howard Rd	Telephone No. 575-495-5376	
Facility Caliche Pit 471	Facility Type Caliche Pit	
Surface Owner State	Mineral Owner State	API No.

**LOCATION OF RELEASE**

Unit Letter M	Section 17	Township 19S	Range 29E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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Latitude 32.655271 Longitude -104.103183 NAD83

**NATURE OF RELEASE**

Type of Release fresh water	Volume of Release 60 bbls	Volume Recovered 0
Source of Release Freshwater	Date and Hour of Occurrence	Date and Hour of Discovery 9/7/2017
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

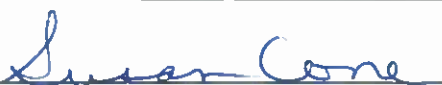
Describe Cause of Problem and Remedial Action Taken.\*

Fresh water released into caliche pit

Describe Area Affected and Cleanup Action Taken.\*

RDL hired SMA to assess the site and the quality of the water released into the caliche pit. Laboratory samples brought back no significant impact in the caliche pit. Samples were taken from the release point and the pooling area, as directed by A. Groves with NMSLO.

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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Susan Cone	Approved by Environmental Specialist:	
Title: President	Approval Date:	Expiration Date:
E-mail Address: rdlec@live.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1/15/2018	Phone: 575-495-5376	

\* Attach Additional Sheets If Necessary

2RP-4485