



May 12, 2017

#5B25342-BG1

NMOCD District II  
Environmental Specialist  
1301 W Grand Ave  
Artesia, NM 88210

SUBJECT: FINAL CLOSURE REPORT FOR INCIDENT 2RP-3738, Latham Federal Storage Facility, API# 30-015-24731, EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher:

On behalf of BETTIS, BOYLE, & STOVALL, INC., Souder Miller & Associates is pleased to submit a Final Closure Report for the remediation of the release site located at the Latham Federal Storage Facility in Eddy County, New Mexico. The purpose of the Final Report is to obtain approval from the New Mexico Oil Conservation Division (NMOCD) for the closure of the release that occurred on Bureau of Land Management property on June 6, 2016.

SMA responded at the request of BETTIS, BOYLE, & STOVALL, INC., to assess and delineate the release of production fluids associated with the Latham Federal Storage Facility well location. The release was initially reported to NMOCD by BETTIS, BOYLE, & STOVALL, INC., on June 6, 2016 and was a result of a tank failure. The table below summarizes information regarding the release. Results of the assessment and, delineation are described in the following report.

Table 1: Release Information and Site Ranking					
Name	Latham Federal Storage Facility				
Location	Incident Number	API Number	Section, Township, Range		
	2RP-3738	30-015-24731	SW/NE (Unit P)	Section 15	T25S, R29E NMPM
Estimated Date of Release	June 6, 2016				
Date Reported to NMOCD	June 6, 2016				
Reported by	Kyle Berend				
Land Owner	The Bureau of Land Management				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Equipment Failure				
Released Material	Produced Fluids				
Released Volume	<15 bbls of Produced Fluids				
Recovered Volume	0 bbls of Produced Fluids				
Net Release	<15 bbls of Produced Fluids				
Nearest Waterway	3.1 miles West of the location				
Depth to Groundwater	Estimated to be 60 feet				

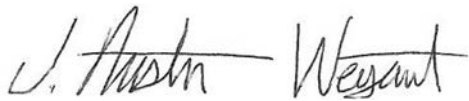


Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	10
SMA Response Dates	Mitigation Activities: 10/10/16
Subcontractors	TCS
Disposal Facility	Lea Land
Estimated Yd <sup>3</sup> Contaminated Soil Excavated and Disposed	480

Attached is a copy of the C-141 final located in Appendix B. For questions or comments pertaining to the release or the attached Closure Report please feel free to contact either of us.

Submitted by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant  
Project Scientist

Reviewed by:



Cynthia Gray, CHMM  
Senior Scientist

# SOIL REMEDIATION FINAL CLOSURE FOR INCIDENT 2RP-3738 BETTIS, BOYLE, & STOVALL, INC.

LATHAM FEDERAL STORAGE FACILITY  
UL P, SECTION 15, T25S R29E, NMPM  
API #30-015-24731  
EDDY COUNTY, NM



Prepared for:  
BETTIS, BOYLE, & STOVALL, INC.  
P.O. Box 1240  
Graham, TX 76450

Prepared by:  
Souder, Miller & Associates  
201 S. Halagueno  
Carlsbad, NM 88221  
575-689-7040

December 5, 2016  
SMA Reference  
5B25342 BG1

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## **1.0 Introduction**

On behalf of Bettis, Boyle, and Stovall INC, Souder, Miller & Associates (SMA) has prepared this report that describes the assessment, initial delineation, and subsequent mitigation of a release associated with the Latham Federal Storage Facility location API# 30-015-24731. The site is in Section 15, Township 25S, Range 29E NMPM, Eddy County, New Mexico, on federal land administered by the Bureau Land Management. Figure 1 illustrates the vicinity and location of the site.

## **2.0 Site Ranking and Land Jurisdiction**

The release site is located approximately 3 miles east of the Pecos River, with an elevation of approximately 3,074 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be 60 feet below ground surface (bgs).

SMA searched the New Mexico State Engineer's Office online water well database for water wells in the vicinity of the release. Three wells are located within a one mile radius of the site. Figure 1 depicts the site vicinity and Figure 2 shows the site itself. The physical location of this release is within the jurisdiction of NMOCD.

Based on the NMOCD Guidelines Ranking Criteria, this release location has been assigned a NMOCD ranking of 10 which requires a soil remediation standard of 10 parts per million (ppm) benzene, 50 ppm combined benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and 1000 ppm total petroleum hydrocarbons (TPH). Table 1 illustrates site ranking rationale.

## **3.0 Assessment and Initial Results**

An initial assessment and work plan was submitted to NMOCD on November 8, 2016. During the initial site work, spill pile samples were collected. Those samples were below NMOCD standards for BTEX, Benzene, TPH, and Chlorides. Two proposed deferment areas were requested in the work plan, represented by sample L2 in the battery and L4 next to the pump jack. These areas could not be excavated due to the proximity of production equipment.

## **4.0 Soil Remediation Summary**

During the initial site work, approximately 480 cubic yards of contaminated soil was removed. The area within the berm was excavated to approximately 6 inches. The affected soils on the pad were excavated to approximately 1 foot, while soils on the pasture were tilled to break up asphaltine, with any highly-stained soils removed and hauled off. The contaminated soil was transported to Lea Land, near Carlsbad, NM., an NMOCD permitted facility. Deferred areas were further delineated on December 8, 2016 as per NMOCD request. Those samples were below NMOCD standards for BTEX, Benzene, and Chlorides.

Berms were built along the west side of the location to prevent impact on the pasture in the case of any future releases. SMA also reinforced and rebuilt the berms around the battery.

## **5.0 Conclusions and Recommendations**

NMOCD Guidelines for Remediation of Leaks, Spills, and Releases have established the following action levels for contaminants of concern with a site ranking of 10: 10 ppm (mg/kg) Benzene, 50 ppm total BTEX, and 1000 ppm TPH.

Laboratory analytical results for all final closure samples collected were below NMOCD closure standards for TPH as well as below laboratory detection limits for BTEX and Benzene for the methods used, with the exception of the two deferment areas. No further remedial activities are recommended, until site abandonment. Soil sample locations are illustrated in Figure 2. A summary of laboratory analytical results is included in Table 3. Laboratory reports are included in Appendix C. Photo documentation is available by request.

## **6.0 Closure and Limitations**

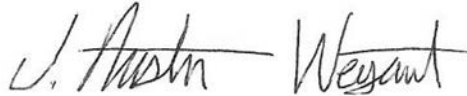
The scope of our services consisted of the performance of confirmatory spill and spill mitigation assessment sampling, verification of release stabilization, regulatory liaison, and preparation of this Closure Report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-7040 or Cindy Gray at 505-325-7535.

Submitted by:

Reviewed by:

SOUDER, MILLER & ASSOCIATES

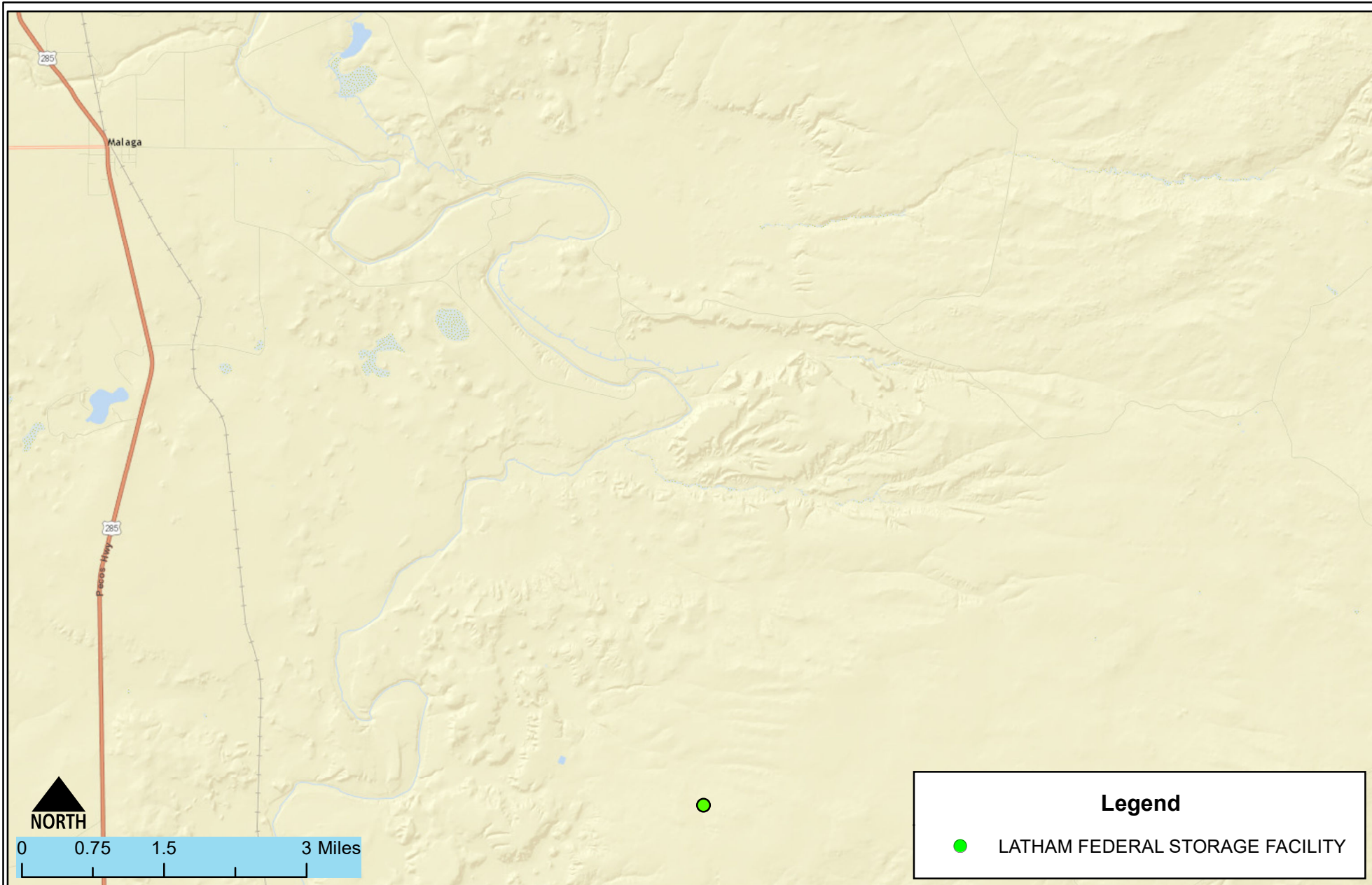


Austin Weyant  
Project Scientist



Cynthia Gray, CHMM  
Senior Scientist

# FIGURE 1 VICINITY MAP



Vicinity Map  
 LATHAM FEDERAL STORAGE FACILITY-BETTIS, BOYLE, & STOVALL, INC. S15, T25S R29E  
 Malaga, New Mexico

Figure1

Date Saved: 11/8/2016	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

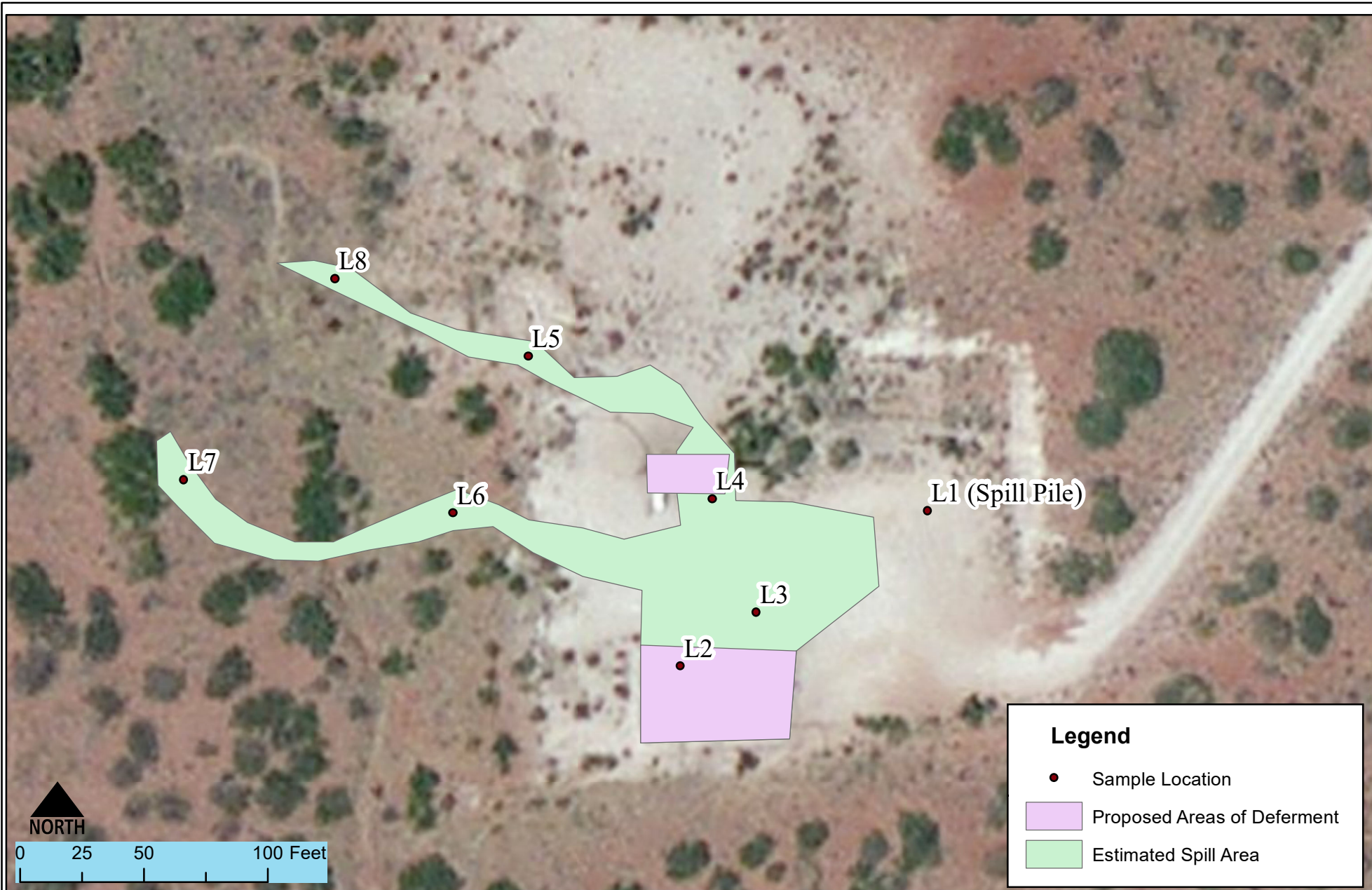
Drawn	Lucas Middleton
Checked	_____
Approved	_____



201 South Halaguena Street  
 Carlsbad, New Mexico 88221  
 (575) 689-7040  
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 Serving the Southwest & Rocky Mountains

# FIGURE 2

## DETAILED SITE AND SAMPLE MAP



Detailed Site and Sample Map  
 LATHAM FEDERAL STORAGE FACILITY-BETTIS, BOYLE, & STOVALL, INC. S15, T25S R29E  
 Malaga, New Mexico

Figure 2

Date Saved: 5/12/2017	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	Lucas Middleton
Checked	_____
Approved	_____



201 South Halaguena Street  
 Carlsbad, New Mexico 88221  
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# TABLE 1

## RELEASE INFORMATION AND SITE RANKING

Table 1: Release Information and Site Ranking					
Name	Latham Federal Storage Facility				
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Land Owner	The Bureau of Land Management				
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Released Material	Produced Fluids				
Released Volume	<15 bbls of Produced Fluids				
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Nearest Waterway	3.1 miles West of the location				
Depth to Groundwater	Estimated to be 60 feet				
Nearest Domestic Water Source	Greater than 1,000 feet				
NMOCD Ranking	10				
SMA Response Dates	Mitigation Activities: 10/10/16				
Subcontractors	TCS				
Disposal Facility					
Estimated Yd <sup>3</sup> Contaminated Soil Excavated and Disposed	480				

# TABLE 2

## SUMMARY OF SAMPLE RESULTS

## Summary of Sample Results

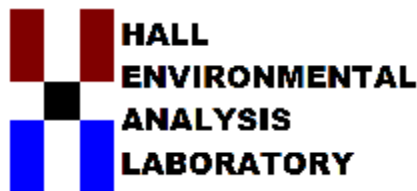
Table 2

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action Taken	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	Total TPH mg/Kg	Cl- Field Screens (ppm)	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 10				50 mg/Kg	10 mg/Kg			1000 mg/Kg		
L1	10/10/2016	comp	excavated	<0.099	<0.025	70	9900	9970	8099	8100
L2	10/10/2016	0.5	excavated	--	--	<4.7	<9.4	<15	1899	1900
	10/10/2016	1.5	in-situ	--	--	<4.6	<9.7	<15	1100	1100
	12/8/2016	3	in-situ	--	--	<4.7	<9.7	<15	--	<30
L3	10/10/2016	1	excavated	--	--	<4.6	<9.5	<15	50	51
L4	10/10/2016	0.5'	excavated	--	--	<4.7	<9.4	<15	2698	2700
	10/10/2016	2	in-situ	--	--	<4.7	<9.4	<15	2801	2800
	12/8/2016	2	in-situ	--	--	<4.7	98	98	--	1700
	12/8/2016	3	in-situ	--	--	<4.7	<9.4	<15	--	<30
L5	10/10/2016	0.5	in-situ	--	--	<4.7	<9.8	<15	0	<30
L6	10/10/2016	0.5	in-situ	<0.096	<0.024	--	--	--	0	<30
L7	10/10/2016	0.5	in-situ	--	--	<4.7	<9.6	<15	50	<30
L8	10/10/2016	0.5	in-situ	--	--	<4.7	<9.6	<15	50	<30

"--" = Not Analyzed

# APPENDIX A

## LABORATORY ANALYTICAL 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)

December 27, 2016

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

RE: Lathem

OrderNo.: 1612681

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 3 sample(s) on 12/13/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 1612681

Date Reported: 12/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-3

**Project:** Lathem

**Collection Date:** 12/8/2016 10:00:00 AM

**Lab ID:** 1612681-001

**Matrix:** SOIL

**Received Date:** 12/13/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	12/16/2016 3:01:22 PM	29244
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/21/2016 11:21:49 PM	29274
Surr: DNOP	71.3	70-130		%Rec	1	12/21/2016 11:21:49 PM	29274
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/20/2016 5:45:46 PM	29268
Surr: BFB	84.8	68.3-144		%Rec	1	12/20/2016 5:45:46 PM	29268

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1612681

Date Reported: 12/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-3

**Project:** Lathem

**Collection Date:** 12/8/2016 10:00:00 AM

**Lab ID:** 1612681-002

**Matrix:** SOIL

**Received Date:** 12/13/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	12/16/2016 3:13:46 PM	29244
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/22/2016 11:44:33 AM	29274
Surr: DNOP	91.5	70-130		%Rec	1	12/22/2016 11:44:33 AM	29274
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/20/2016 6:09:53 PM	29268
Surr: BFB	84.0	68.3-144		%Rec	1	12/20/2016 6:09:53 PM	29268

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1612681

Date Reported: 12/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-2

**Project:** Lathem

**Collection Date:** 12/8/2016 10:00:00 AM

**Lab ID:** 1612681-003

**Matrix:** SOIL

**Received Date:** 12/13/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	1700	75		mg/Kg	50	12/19/2016 8:18:42 PM	29244
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	98	10		mg/Kg	1	12/22/2016 12:16:05 AM	29274
Surr: DNOP	79.0	70-130		%Rec	1	12/22/2016 12:16:05 AM	29274
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/20/2016 6:33:58 PM	29268
Surr: BFB	83.2	68.3-144		%Rec	1	12/20/2016 6:33:58 PM	29268

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1612681

27-Dec-16

Client: Souder, Miller &amp; Associates

Project: Lathem

Sample ID	MB-29244		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 29244		RunNo: 39479					
Prep Date:	12/16/2016		Analysis Date: 12/16/2016		SeqNo: 1236224		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-29244		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 29244		RunNo: 39479					
Prep Date:	12/16/2016		Analysis Date: 12/16/2016		SeqNo: 1236225		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.7	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
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#: 1612681

27-Dec-16

Client: Souder, Miller &amp; Associates

Project: Lathem

Sample ID	LCS-29274		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 29274		RunNo: 39554					
Prep Date:	12/19/2016		Analysis Date: 12/21/2016		SeqNo: 1239312		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.8	63.8	116			
Surr: DNOP	4.2		5.000		84.6	70	130			

Sample ID	MB-29274		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 29274		RunNo: 39554					
Prep Date:	12/19/2016		Analysis Date: 12/21/2016		SeqNo: 1239313		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.2		10.00		82.2	70	130			

Sample ID	LCS-29349		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 29349		RunNo: 39589					
Prep Date:	12/22/2016		Analysis Date: 12/22/2016		SeqNo: 1240055		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.9	70	130			

Sample ID	MB-29349		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 29349		RunNo: 39589					
Prep Date:	12/22/2016		Analysis Date: 12/22/2016		SeqNo: 1240056		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		96.5	70	130			

Sample ID	LCS-29335			SampType:	LCS			TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS			Batch ID:	29335			RunNo:	39589					
Prep Date:	12/21/2016			Analysis Date:	12/23/2016			SeqNo:	1240743			Units:	%Rec	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Surr: DNOP	4.7		5.000		93.9	70	130							

Sample ID	MB-29335		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 29335		RunNo: 39589					
Prep Date:	12/21/2016		Analysis Date: 12/23/2016		SeqNo: 1240744		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.3		10.00		92.9	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
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H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1612681

27-Dec-16

Client: Souder, Miller &amp; Associates

Project: Lathem

Sample ID	LCS-29380		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 29380		RunNo: 39589					
Prep Date:	12/23/2016		Analysis Date: 12/23/2016		SeqNo: 1241623		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.1	70	130			

Sample ID	MB-29380		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 29380		RunNo: 39589					
Prep Date:	12/23/2016		Analysis Date: 12/23/2016		SeqNo: 1241625		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		97.3	70	130			

Sample ID	LCS-29309		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 29309		RunNo: 39590					
Prep Date:	12/20/2016		Analysis Date: 12/23/2016		SeqNo: 1241653		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.4	70	130			

Sample ID	MB-29309		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 29309		RunNo: 39590					
Prep Date:	12/20/2016		Analysis Date: 12/23/2016		SeqNo: 1241654		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		100	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  
R RPD outside accepted recovery limits  
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#: 1612681

27-Dec-16

Client: Souder, Miller &amp; Associates

Project: Lathem

Sample ID	MB-29268		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 29268		RunNo: 39532					
Prep Date:	12/19/2016		Analysis Date: 12/20/2016		SeqNo: 1238359		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		89.2	68.3	144			

Sample ID	LCS-29268		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 29268		RunNo: 39532					
Prep Date:	12/19/2016		Analysis Date: 12/20/2016		SeqNo: 1238360		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	74.6	123			
Surr: BFB	880		1000		88.0	68.3	144			

### 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  
R RPD outside accepted recovery limits  
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



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: 1612681

RcptNo: 1

Received by/date: LC 12/13/16

Logged By: Andy Jansson 12/13/2016 10:30:00 AM

Completed By: Andy Jansson

Reviewed By: [Signature]

### 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: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

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

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			

<b>Chain-of-Custody Record</b>		<b>Turn-Around Time:</b>	
Client: <u>SMC - Calgary</u>		<input checked="" type="checkbox"/> <b>Standard</b> <input type="checkbox"/> <b>Rush</b>	
Mailing Address:		Project Name: <u>Latham</u>	
Phone #:		Project #:	
email or Fax#:		Project Manager: <u>Angela Weyant</u>	
QA/QC Package:		Sampler: <u>com</u>	
<input type="checkbox"/> <b>Standard</b> <input type="checkbox"/> <b>Level 4 (Full Validation)</b>		On Ice: <input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b>	
Accreditation:		Sample Temperature: <u>2.6</u>	
<input type="checkbox"/> <b>NELAP</b> <input type="checkbox"/> <b>Other</b>			
<input type="checkbox"/> <b>EDD (Type)</b>			

Client: GMA - Catalyst

**Mailing Address:**

Phone #:

**email or Fax#:**

**QA/QC Package:**

☐ Standard ☐ Level 4 (Full Validation)

**Accreditation:**

☐ NELAP      ☐ Other☐ EDD (Type)

**Turn-Around Time:**

☒ ~~Standard~~      ☐ **Rush**

Project Name:

Project #:

**Project Manager:**



Sampler: Long

On Ice: ☒ Yes ☐ No

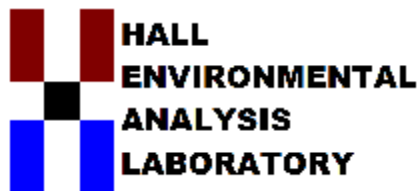
Sample Temperature: 2.6

[illegible]

Analysis Request					
BTEX + MTBE + TMB's (8021)					
BTEX + MTBE + TPH (Gas only)					
TPH Method 801BB (Gas/Diesel)	X	X			
TPH (Method 418.1)					
EDB (Method 504.1)					
8310 (PNA or PAH)					
RCRA 8 Metals					
Anions ( $\text{F}^-$ , $\text{Cl}^-$ , $\text{NO}_3^-$ , $\text{NO}_2^-$ , $\text{PO}_4^{3-}$ , $\text{SO}_4^{2-}$ )	X	X			
8081 Pesticides / 8082 PCB's					
8260B (VOA)					
8270 (Semi-VOA)					
Air Bubbles (Y or N)					

Date: 2-16	Time: 9:00	Relinquished by: 	Received by: 	Date 12/13/16	Time	Remarks: 1030
Date:	Time:	Relinquished by:	Received by:	Date	Time	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

October 27, 2016

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

RE: Liatham Fed

OrderNo.: 1610715

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 10 sample(s) on 10/14/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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 1610715

Date Reported: 10/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L8-0.5

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-001

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	10/20/2016 2:09:40 PM	28205
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/17/2016 5:44:16 PM	28076
Surr: DNOP	89.5	70-130		%Rec	1	10/17/2016 5:44:16 PM	28076
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/18/2016 5:18:18 PM	28072
Surr: BFB	92.6	68.3-144		%Rec	1	10/18/2016 5:18:18 PM	28072

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1610715**

Date Reported: **10/27/2016**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-0.5

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-002

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	2700	150		mg/Kg	100	10/22/2016 1:44:22 AM	28205

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1610715

Date Reported: 10/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L5-0.5

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-003

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	10/20/2016 3:24:09 PM	28205
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/17/2016 6:07:23 PM	28076
Surr: DNOP	89.3	70-130		%Rec	1	10/17/2016 6:07:23 PM	28076
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/18/2016 5:42:24 PM	28072
Surr: BFB	84.7	68.3-144		%Rec	1	10/18/2016 5:42:24 PM	28072

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1610715

Date Reported: 10/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L6-0.5

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-004

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	10/20/2016 3:36:34 PM	28205
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	10/18/2016 6:06:44 PM	28072
Toluene	ND	0.048		mg/Kg	1	10/18/2016 6:06:44 PM	28072
Ethylbenzene	ND	0.048		mg/Kg	1	10/18/2016 6:06:44 PM	28072
Xylenes, Total	ND	0.096		mg/Kg	1	10/18/2016 6:06:44 PM	28072
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	10/18/2016 6:06:44 PM	28072

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1610715

Date Reported: 10/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L7-0.5

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-005

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	10/20/2016 3:48:58 PM	28205
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/17/2016 6:30:40 PM	28076
Surr: DNOP	101	70-130		%Rec	1	10/17/2016 6:30:40 PM	28076
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/18/2016 6:31:03 PM	28072
Surr: BFB	87.8	68.3-144		%Rec	1	10/18/2016 6:31:03 PM	28072

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1610715**

Date Reported: **10/27/2016**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-1

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-006

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	1900	75		mg/Kg	50	10/22/2016 1:56:47 AM	28205

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1610715

Date Reported: 10/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-1

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-007

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	8100	300		mg/Kg	200	10/25/2016 9:38:54 PM	28232
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	9900	99		mg/Kg	10	10/18/2016 11:13:50 PM	28076
Surr: DNOP	0	70-130	S	%Rec	10	10/18/2016 11:13:50 PM	28076
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	70	50		mg/Kg	10	10/19/2016 7:50:05 PM	28072
Surr: BFB	129	68.3-144		%Rec	10	10/19/2016 7:50:05 PM	28072
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.25	D	mg/Kg	10	10/19/2016 7:50:05 PM	28072
Toluene	ND	0.50	D	mg/Kg	10	10/19/2016 7:50:05 PM	28072
Ethylbenzene	ND	0.50	D	mg/Kg	10	10/19/2016 7:50:05 PM	28072
Xylenes, Total	ND	0.99	D	mg/Kg	10	10/19/2016 7:50:05 PM	28072
Surr: 4-Bromofluorobenzene	108	80-120	D	%Rec	10	10/19/2016 7:50:05 PM	28072

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1610715

Date Reported: 10/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-1.5

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-008

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	1100	30		mg/Kg	20	10/21/2016 1:56:54 PM	28232
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/17/2016 7:16:53 PM	28076
Surr: DNOP	98.5	70-130		%Rec	1	10/17/2016 7:16:53 PM	28076
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/18/2016 6:55:07 PM	28072
Surr: BFB	87.6	68.3-144		%Rec	1	10/18/2016 6:55:07 PM	28072

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1610715

Date Reported: 10/27/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-1

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-009

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	51	30		mg/Kg	20	10/21/2016 2:09:19 PM	28232
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/17/2016 7:39:53 PM	28076
Surr: DNOP	93.1	70-130		%Rec	1	10/17/2016 7:39:53 PM	28076
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/18/2016 7:19:12 PM	28072
Surr: BFB	89.9	68.3-144		%Rec	1	10/18/2016 7:19:12 PM	28072

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1610715**

Date Reported: **10/27/2016**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-2

**Project:** Liatham Fed

**Collection Date:** 10/10/2016 8:50:00 AM

**Lab ID:** 1610715-010

**Matrix:** SOIL

**Received Date:** 10/14/2016 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	2800	150		mg/Kg	100	10/25/2016 9:51:19 PM	28232

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1610715

27-Oct-16

Client: Souder, Miller &amp; Associates

Project: Liatham Fed

Sample ID	MB-28205		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 28205		RunNo: 38119					
Prep Date:	10/20/2016		Analysis Date: 10/20/2016		SeqNo: 1189347		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-28205		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 28205		RunNo: 38119					
Prep Date:	10/20/2016		Analysis Date: 10/20/2016		SeqNo: 1189348		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			

Sample ID	MB-28232		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	28232		RunNo:	38151				
Prep Date:	10/21/2016		Analysis Date:	10/21/2016		SeqNo:	1190570		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-28232		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 28232		RunNo: 38151					
Prep Date:	10/21/2016		Analysis Date: 10/21/2016		SeqNo: 1190571		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.3	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
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#: 1610715

27-Oct-16

Client: Souder, Miller &amp; Associates

Project: Liatham Fed

Sample ID	MB-28076	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 28076			RunNo: 37981					
Prep Date:	10/14/2016	Analysis Date: 10/17/2016			SeqNo: 1184449		Units: 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		85.7	70	130			

Sample ID	LCS-28076		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 28076		RunNo: 38007					
Prep Date:	10/14/2016		Analysis Date: 10/18/2016		SeqNo: 1184792		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.2	62.6	124			
Surr: DNOP	4.4		5.000		88.8	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
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#: 1610715

27-Oct-16

Client: Souder, Miller &amp; Associates

Project: Liatham Fed

Sample ID	MB-28072		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 28072		RunNo: 38021					
Prep Date:	10/14/2016		Analysis Date: 10/18/2016		SeqNo: 1185981		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	68.3	144			

Sample ID	LCS-28072		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 28072		RunNo: 38021					
Prep Date:	10/14/2016		Analysis Date: 10/18/2016		SeqNo: 1185995		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	74.6	123			
Surr: BFB	930		1000		92.8	68.3	144			

### 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  
R RPD outside accepted recovery limits  
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#: 1610715

27-Oct-16

Client: Souder, Miller &amp; Associates

Project: Liatham Fed

Sample ID	MB-28072		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 28072		RunNo: 38021					
Prep Date:	10/14/2016		Analysis Date: 10/18/2016		SeqNo: 1186010		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	0.98		1.000		97.7	80	120			

Sample ID	LCS-28072		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 28072		RunNo: 38021					
Prep Date:	10/14/2016		Analysis Date: 10/18/2016		SeqNo: 1186011		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	92.0	75.2	115			
Toluene	0.93	0.050	1.000	0	93.5	80.7	112			
Ethylbenzene	0.96	0.050	1.000	0	95.9	78.9	117			
Xylenes, Total	2.8	0.10	3.000	0	94.9	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
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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: 1610715

ReptNo: 1

Received by/date:	<u>AS</u>	<u>10/14/16</u>	
Logged By:	Michelle Garcia	10/14/2016 8:45:00 AM	<u>Michelle Garcia</u>
Completed By:	Michelle Garcia	10/14/2016 12:35:34 PM	<u>Michelle Garcia</u>
Reviewed By:	<u>AS</u>	<u>10/14/16</u>	

### Chain of Custody

- |  |   |                             |   |
|--|---|-----------------------------|---|
| 1. Custody seals intact on sample bottles? | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 2. Is Chain of Custody complete?           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| 3. How was the sample delivered?           | <u>UPS</u>                              |                             |   |

### Log In

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

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> 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	1.7	Good	Yes			



# APPENDIX B

## FORM C141 FINAL

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 August 8, 2011

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	BETTS, BOYLE & STONALL	Contact	KYLE BEREND
Address	P.O. Box 1240, GRAHAM, TX 76450	Telephone No.	940-549-0780
Facility Name	LATHAM FEDERAL STORAGE	Facility Type	OIL & PRODUCED WATER STORAGE
Surface Owner		Mineral Owner	BLM
		API No.	30-013-24731

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	15	25S	29E	660	S	530	E	EDDY

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

NATURE OF RELEASE


Type of Release	MINOR	Volume of Release	< 15 bbl	Volume Recovered	NONE
Source of Release	OIL AND PRODUCED WATER	Date and Hour of Occurrence		Date and Hour of Discovery	6/06/16
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	6/09/16 8:00 AM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					

Describe Cause of Problem and Remedial Action Taken.\*

FLUIDS LOST FROM STORAGE TANKS, MAINLY HISTORIC, OLDER THAN 5 YEARS

Describe Area Affected and Cleanup Action Taken.\*  
AFFECTED SOILS EXCAVATED ON LOCATION, PASTURE WAS REMEDIATED  
IN SITU AND THEN RE SEEDING WITH BLM SEED MIXTURE

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

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: KYLE BEREND	Approved by Environmental Specialist:		
Title: REGULATORY ANALYST	Approval Date:	Expiration Date:	
E-mail Address: kberend@bbsoil.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 01/24/17	Phone: 940-549-0780		

\* Attach Additional Sheets If Necessary

# APPENDIX C

## PHOTO DOCUMENTATION



### Showing Initial Impact



Excavation around wellhead (L4)



Excavation on production pad with new berms



Sampling L3 with rebuilt battery in background