Souder, Miller & Associates ♦ 201 S. Halagueno ♦ Carlsbad, NM 88221
(575) 689-7040

February 20, 2017

#5B25425-BG2

NMOCD District II
Mike Bratcher
811 S. First St.
Eddy, NM 88210

SUBJECT: CLOSURE REPORT FOR INCIDENT 2RP-4088, CHAMA 3 FEDERAL #001H, UNIT I SECTION 3-T18S-R23E NMPM, API# 30-015-36007, EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher:

On behalf of Remnant Oil Operating, LLC, Souder Miller & Associates is pleased to submit a closure report summarizing the soil remediation for the release site located at the Chama 3 Federal #001H in Eddy County, New Mexico. The purpose of this report is to obtain closure approval from the New Mexico Oil Conservation Division (NMOCD) for the remediation of the release that occurred on Bureau of Land Management Lands on January 15, 2017.

Souder, Miller & Associates (SMA) responded at the request of Remnant Oil, to assess and delineate the release of production water associated with the Chama 3 Federal #001H well location. The release was initially reported to NMOCD by Remnant Oil, on January 15, 2017 and was a result of lightning striking the produced water tank. The table below summarizes information regarding the release. Results of the assessment, delineation, and remediation are described in the following report.

Table 1: Release information and Site Ranking

Name	Chama 3 Federal #001H				
Company	Remnant Oil Operating, LLC				
Location	Incident Number	API Number	Section, Township, Range		
	2RP-4088	30-015-36007	NE/SE (Unit I)	Section 03	T18S, R23E NMPM
Estimated Date of Release	January 15, 2017				
Date Reported to NMOCD	January 15, 2017				
Reported by	Carie Stoker				
Land Owner	Bureau of Land Management				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Water tank				
Released Material	Produced water				

Released Volume	Estimated 100 bbls
Recovered Volume	130 bbls (Additional 30 bbls recovered due to water used by firetrucks to put out fire. It was also raining during the incident)
Nearest Waterway	Location is approximately 1 mile from the Rio Penasco River
Depth to Groundwater	Approximately 425'
Nearest Domestic Water Source	Nearest well is approximately 1 mile from location
NMOCD Ranking	0

Attached is a copy of the C-141 initial and 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

J. Austin Weyant

Austin Weyant
Project Scientist

Reviewed by:

Cynthia Gray, CHMM
Senior Scientist

FINAL CLOSURE FOR INCIDENT 2RP-4088

REMNANT OIL OPERATING, LLC

CHAMA 3 FEDERAL #001H
UL I, SECTION 03, T18S R23E, NMPM
API #30-015-36007
EDDY COUNTY, NM

Prepared for:
Remnant Oil Operating, LLC
PO Box 5375
Midland, TX 79704
(432) 644-7659

Prepared by:
Souder, Miller & Associates
201 S. Halagueno
Carlsbad, NM 88221
575-689-704

April 18, 2017
SMA Reference
5B25425 BG2

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1.0 Introduction

On behalf of Remnant Oil Operating, LLC, Souder, Miller & Associates (SMA) has prepared this report that describes the assessment, delineation and subsequent mitigation for a release associated with the Chama 3 Federal #001H location API# 30-015-36007. The site is located in Section 3, Township 18S, Range 23E NMPM, Eddy County, New Mexico, on Bureau of Land Management lands. Figure 1 illustrates the vicinity and location of the site.

2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 16 miles southwest of Artesia, with an elevation of approximately 3,939 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be 425 feet below ground surface (bgs).

SMA searched the New Mexico State Engineer's Office (NMOSE) online water well database for water wells in the vicinity of the release. Twenty-six (26) wells are located within a three mile radius of the site. The NMOSE water column data is included in appendix C. 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 0 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 5000 ppm total petroleum hydrocarbons (TPH). Table 1 illustrates site ranking rationale.

3.0 Assessment and Initial Results

On January 30, 2017 after receiving 811 clearance, SMA field personnel assessed the remediated release area onsite with a gas powered auger. The potentially affected area was found to be approximately 4055 square feet. The site delineation samples were taken to depths of about one foot bgs. All Location Samples meet the recommended remediation action levels for BTEX and TPH. On March 27, 2017, following the breakdown of the battery, SMA field personnel returned to the location to collect further samples utilizing a backhoe. Samples L6, L7, and L8 reached refusal at 4' to 5' bgs due to a thick rock layer. On March 30, 2017, SMA was back on location to guide excavation and obtain vertical delineation to satisfy the NMOCD C-141 Conditions of Approval. The lined battery had been damaged by the fire and will be rebuilt by Remnant Oil Operating LLC. Specific sample locations for all samples are depicted on Figure 2 (Sample Location Map) along with sampling details. All samples were collected and processed according to NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for Benzene and Total BTEX using EPA Method 8021B, DRO and GRO by EPA Method 8015D, and total Chlorides using EPA Method 300.0.

4.0 Soil Remediation Summary

SMA carefully guided excavation of the affected soils, with approval from area utility owners via 811.

The area on the pad and beneath the battery was excavated to a depth of two feet, including sample locations L4, L5, L6, L7, and L8.

Sample locations L1, L2, and L3 all follow along the drainage ditch that was excavated to a depth of 1.5 feet. Due to safety concerns around an existing pipeline, L1, L2, and L3 could not be easily delineated or further excavated. SMA was able to move to the side of the pipeline at L3 to achieve vertical delineation to satisfy NMOCD's conditions of approval.

Sidewall samples were collected and field screened with a mobile EC unit. All sidewall samples and bottom hole samples meet Recommended Remediation Action Levels per the NMOCD Guidelines except for L1, which could not be further remediated due to safety concerns. On March 30, 2017 NMOCD granted permission to backfill the location. All contaminated soils were transported for proper disposal at an NMOCD permitted facility.

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 0: 10 ppm (mg/kg) Benzene, 50 ppm total BTEX, and 5000 ppm TPH

No further remedial activities are recommended. Soil sample locations are illustrated in Figure 2. A summary of laboratory analytical results is included in Table 2. Laboratory reports are included in Appendix A.

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 plan. 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:

SOUDER, MILLER & ASSOCIATES

Austin Weyant
Project Scientist

Reviewed by:

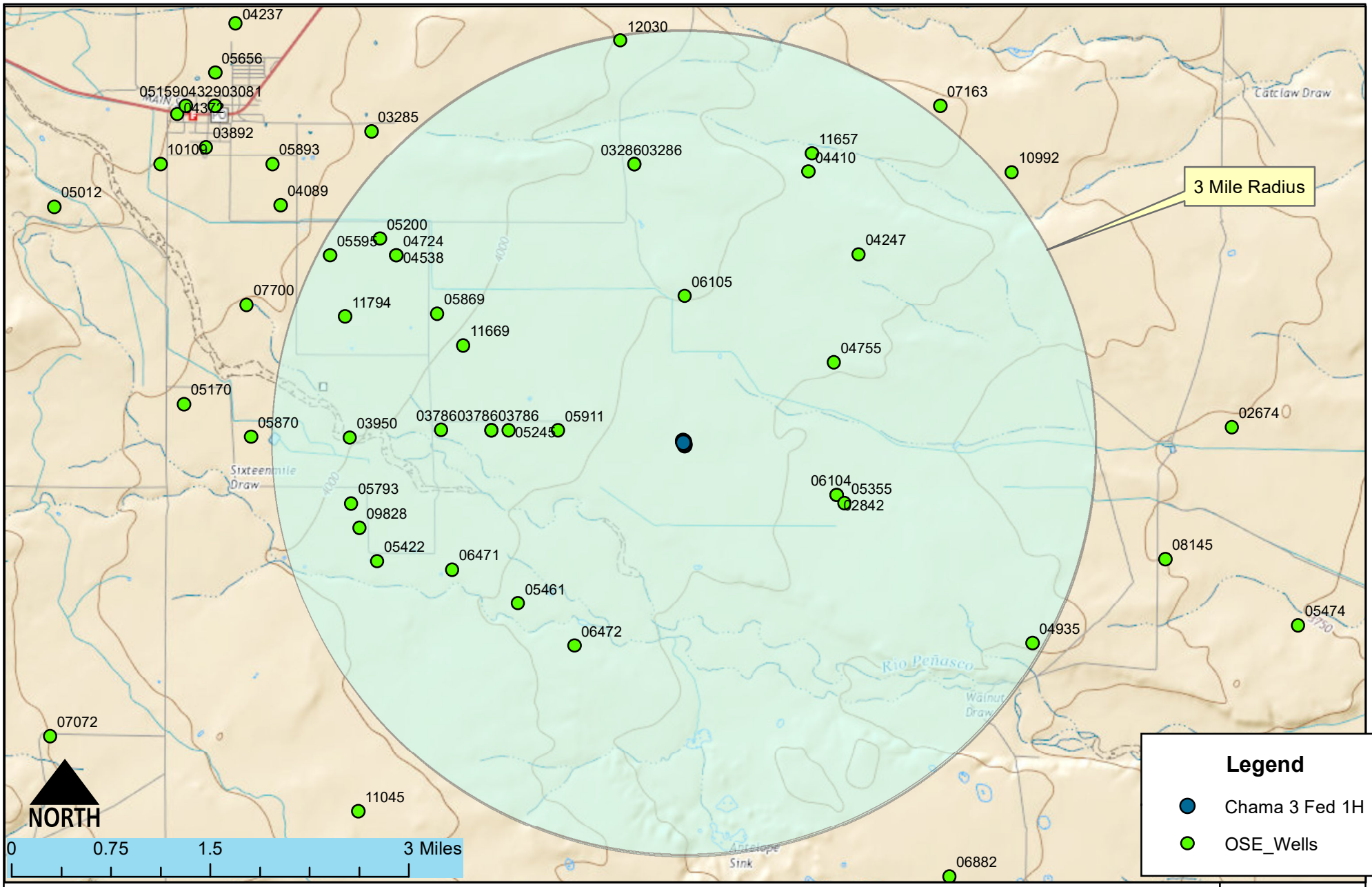
Cynthia Gray, CHMM
Senior Scientist

Figures:

Tables:

Appendices:

FIGURE 1
VICINITY MAP



Detailed Site and Sample Map
Chama 3 Fed #1H- Remnant Oil Operating
Hope, New Mexico

Figure 1

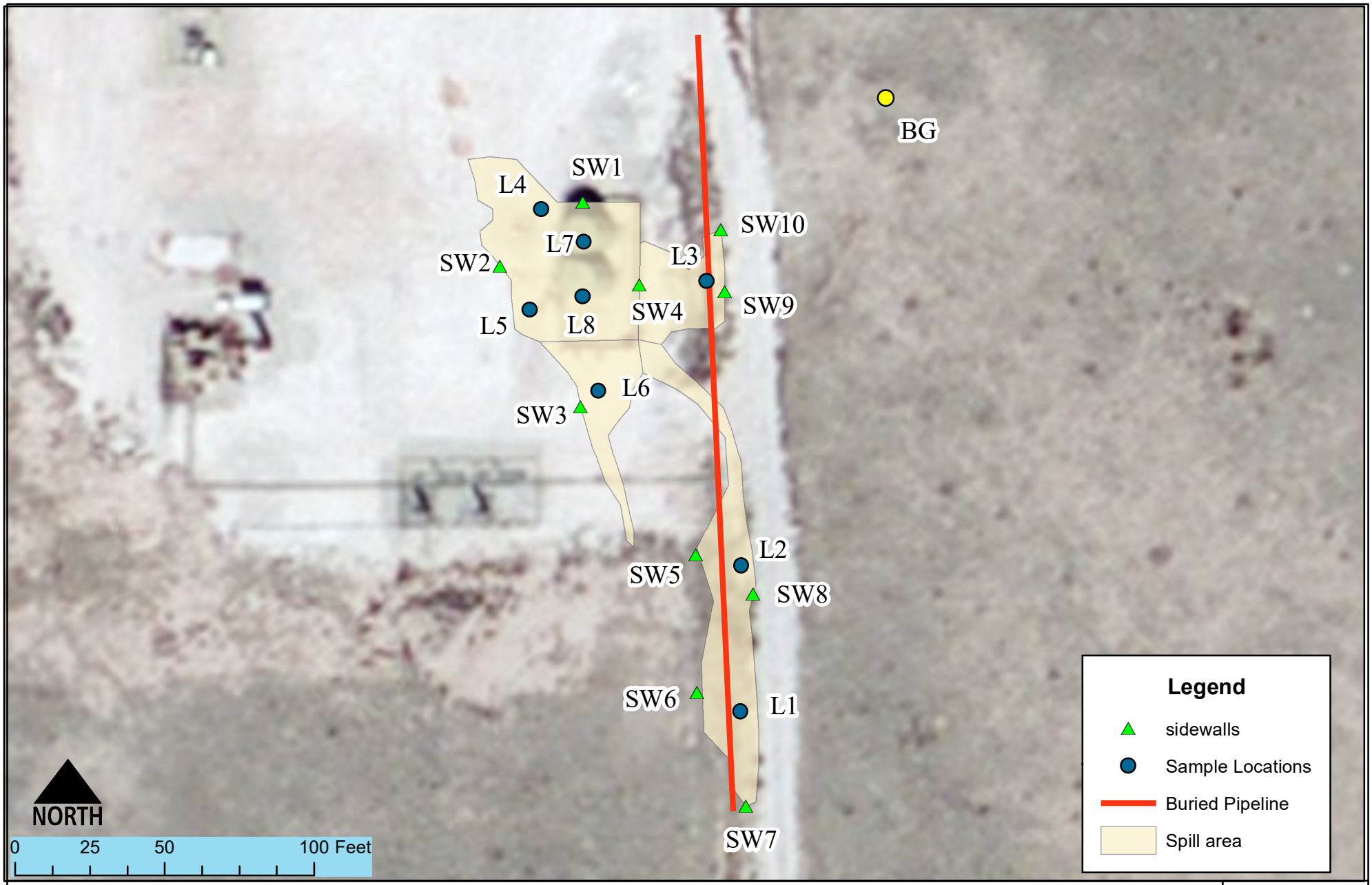
Date Saved: 2/19/2017

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Heather Patterson
Checked
Approved

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

FIGURE 2
SITE AND SAMPLE LOCATION MAP



Site and Sample Location Map
Chama 3 Fed #1H- Remnant Oil Operating
S 3 T18S R23E New Mexico

Figure 2

Date Saved: 3/30/2017

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
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www.soudermiller.com
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TABLE 1

RELEASE INFORMATION AND SITE RANKING

Remnant Oil Operating LLC
Table 1: Site Ranking

Chama 3 Fed 1H
Battery Fire
1/15/2017

Site Ranking Determination Table

Depth to Groundwater	NMOCD Numeric Rank for this Site	Source for Ranking	Notes
< 50 BGS = 20		USGS Topo Maps; Google Earth , NMOSE database	depth to ground water is estimated 425'
50' to 99' = 10			
>100' = 0	0		
Ranking Criteria for Horizontal Distance to Nearest Surface Water	**NMOCD Numeric Rank for this Site**	**Source for Ranking**	**Notes**
< 200' = 20		USGS Topo Maps; Google Earth ; ArcMap	Location is approximately 1 mile from the Rio Penasco River
200' - 1000' = 10			
>1000' = 0	0		
Ranking Criteria for Horizontal Distance to a Water Well or Water Source	**NMOCD Numeric Rank for this Site**	**Source for Ranking**	**Notes**
<1000' from a water source? <200' from a private domestic water source? YES OR NO to BOTH. YES = 20, NO = 0		NM State Engineer Water Well Database	Nearest well is approximatly 1 mile from location
	0		
Total Site Ranking	**0**		
Soil Remedation Standards	**0 to 9**	**10 to 19**	**>19**
Benzene	**10 PPM**	**10 PPM**	**10 PPM**
BTEX	**50 PPM**	**50 PPM**	**50 PPM**
TPH	**5000 PPM**	**1000 PPM**	**100 PPM**

TABLE 2

SUMMARY OF SAMPLING RESULTS

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action Taken	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Field Screens (ppm)	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 0				50 mg/Kg	10 mg/Kg				5000 mg/Kg		
L1	1/30/2017	1'	excavated	<0.093	<0.023	<4.7	23	140	167.7	--	**1700**
		1.5'	in-situ	--	--	--	--	--	--	**2265**	**2600**
L2	1/30/2017	1'	excavated	<0.093	<0.023	<4.6	<9.7	56	70.3	--	950
	3/9/2017	1.5'	in-situ	--	--	--	--	--	--	404	660
L3	1/30/2017	1'	excavated	<0.096	<0.024	25	220	840	1,085	**3527**	**3700**
	3/30/2017	2'	in-situ	--	--	--	--	--	--	118	620
	3/30/2017	6'	in-situ	--	--	--	--	--	--	164	--
	3/30/2017	10'	in-situ	--	--	--	--	--	--	130	90
L4	3/9/2017	1'	excavated	<0.092	<0.023	<4.5	<9.7	<49	<63	--	75
L5	3/9/2017	0.5'	excavated	<0.094	<0.024	<4.7	<9.6	79	93	--	**1200**
L6	3/9/2017	0.5'	excavated	<0.10	<0.025	<5.0	180	1,100	1,285	--	**1600**
	3/27/2017	2'	in-situ	--	--	--	--	--	--	107	--
	3/27/2017	4'	in-situ	--	--	--	--	--	--	27	--
	3/27/2017	5'	in-situ	--	--	--	--	--	--	84	<30
L7	3/27/2017	2'	in-situ	--	--	--	--	--	--	84	<30
	3/27/2017	4.5'	in-situ	--	--	--	--	--	--	64	<30
L8	3/27/2017	0.5'	excavated	<0.092	<0.023	<4.6	26	200	230.6	369	210
	3/27/2017	2'	in-situ	--	--	--	--	--	--	164	--
	3/27/2017	4'	in-situ	--	--	--	--	--	--	50	31
SW1	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	29	--
SW2	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	461	--
SW3	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	232	--
SW4	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	27	--
SW5	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	335	--
SW6	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	472	--
SW7	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	369	--
SW8	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	278	--

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action Taken	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Field Screens (ppm)	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 0				50 mg/Kg	10 mg/Kg				5000 mg/Kg		
SW9	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	506	--
SW10	3/30/2017	sidewall	in-situ	--	--	--	--	--	--	369	--
BG	3/30/2017	0.5'	in-situ	--	--	--	--	--	--	0	--

"--" = 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

February 16, 2017

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

RE: Chama OrderNo.: 1702473

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 6 sample(s) on 2/9/2017 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 or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-1'
Project: Chama
Collection Date: 1/30/2017 11:30:00 AM
Lab ID: 1702473-001
Matrix: SOIL
Received Date: 2/9/2017 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1700	75		mg/Kg	50	2/15/2017 11:25:11 AM	30220
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	23	9.5		mg/Kg	1	2/10/2017 4:20:51 PM	30134
Motor Oil Range Organics (MRO)	140	47		mg/Kg	1	2/10/2017 4:20:51 PM	30134
Surr: DNOP	111	70-130		%Rec	1	2/10/2017 4:20:51 PM	30134
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/10/2017 6:20:32 PM	30145
Surr: BFB	98.1	54-150		%Rec	1	2/10/2017 6:20:32 PM	30145
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	2/10/2017 6:20:32 PM	30145
Toluene	ND	0.047		mg/Kg	1	2/10/2017 6:20:32 PM	30145
Ethylbenzene	ND	0.047		mg/Kg	1	2/10/2017 6:20:32 PM	30145
Xylenes, Total	ND	0.093		mg/Kg	1	2/10/2017 6:20:32 PM	30145
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	2/10/2017 6:20:32 PM	30145

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-1'
Project: Chama
Collection Date: 1/30/2017 11:30:00 AM
Lab ID: 1702473-002
Matrix: SOIL
Received Date: 2/9/2017 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	950	30		mg/Kg	20	2/14/2017 11:47:42 AM	30220
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/10/2017 4:44:22 PM	30134
Motor Oil Range Organics (MRO)	56	48		mg/Kg	1	2/10/2017 4:44:22 PM	30134
Surr: DNOP	109	70-130		%Rec	1	2/10/2017 4:44:22 PM	30134
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/10/2017 6:43:56 PM	30145
Surr: BFB	88.0	54-150		%Rec	1	2/10/2017 6:43:56 PM	30145
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	2/10/2017 6:43:56 PM	30145
Toluene	ND	0.046		mg/Kg	1	2/10/2017 6:43:56 PM	30145
Ethylbenzene	ND	0.046		mg/Kg	1	2/10/2017 6:43:56 PM	30145
Xylenes, Total	ND	0.093		mg/Kg	1	2/10/2017 6:43:56 PM	30145
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	2/10/2017 6:43:56 PM	30145

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-1'
Project: Chama
Collection Date: 1/30/2017 11:30:00 AM
Lab ID: 1702473-003
Matrix: SOIL
Received Date: 2/9/2017 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	3100	150		mg/Kg	100	2/15/2017 11:37:36 AM	30220
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	220	92		mg/Kg	10	2/10/2017 5:07:40 PM	30134
Motor Oil Range Organics (MRO)	840	460		mg/Kg	10	2/10/2017 5:07:40 PM	30134
Surr: DNOP	0	70-130	S	%Rec	10	2/10/2017 5:07:40 PM	30134
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	25	4.8		mg/Kg	1	2/10/2017 7:07:22 PM	30145
Surr: BFB	218	54-150	S	%Rec	1	2/10/2017 7:07:22 PM	30145
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	2/10/2017 7:07:22 PM	30145
Toluene	ND	0.048		mg/Kg	1	2/10/2017 7:07:22 PM	30145
Ethylbenzene	ND	0.048		mg/Kg	1	2/10/2017 7:07:22 PM	30145
Xylenes, Total	ND	0.096		mg/Kg	1	2/10/2017 7:07:22 PM	30145
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	2/10/2017 7:07:22 PM	30145

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-1'
Project: Chama
Collection Date: 1/30/2017 11:30:00 AM
Lab ID: 1702473-004
Matrix: SOIL
Received Date: 2/9/2017 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	75	30		mg/Kg	20	2/14/2017 12:12:31 PM	30220
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/10/2017 5:31:07 PM	30134
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/10/2017 5:31:07 PM	30134
Surr: DNOP	108	70-130		%Rec	1	2/10/2017 5:31:07 PM	30134
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/10/2017 7:30:41 PM	30145
Surr: BFB	90.3	54-150		%Rec	1	2/10/2017 7:30:41 PM	30145
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	2/10/2017 7:30:41 PM	30145
Toluene	ND	0.046		mg/Kg	1	2/10/2017 7:30:41 PM	30145
Ethylbenzene	ND	0.046		mg/Kg	1	2/10/2017 7:30:41 PM	30145
Xylenes, Total	ND	0.092		mg/Kg	1	2/10/2017 7:30:41 PM	30145
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	2/10/2017 7:30:41 PM	30145

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L5-6"
Project: Chama
Collection Date: 1/30/2017 11:30:00 AM
Lab ID: 1702473-005
Matrix: SOIL
Received Date: 2/9/2017 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1200	30		mg/Kg	20	2/14/2017 12:49:45 PM	30220
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/10/2017 5:54:25 PM	30134
Motor Oil Range Organics (MRO)	79	48		mg/Kg	1	2/10/2017 5:54:25 PM	30134
Surr: DNOP	109	70-130		%Rec	1	2/10/2017 5:54:25 PM	30134
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/10/2017 7:54:05 PM	30145
Surr: BFB	87.2	54-150		%Rec	1	2/10/2017 7:54:05 PM	30145
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	2/10/2017 7:54:05 PM	30145
Toluene	ND	0.047		mg/Kg	1	2/10/2017 7:54:05 PM	30145
Ethylbenzene	ND	0.047		mg/Kg	1	2/10/2017 7:54:05 PM	30145
Xylenes, Total	ND	0.094		mg/Kg	1	2/10/2017 7:54:05 PM	30145
Surr: 4-Bromofluorobenzene	99.5	80-120		%Rec	1	2/10/2017 7:54:05 PM	30145

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L6-6"
Project: Chama
Collection Date: 1/30/2017 11:30:00 AM
Lab ID: 1702473-006
Matrix: SOIL
Received Date: 2/9/2017 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1600	75		mg/Kg	50	2/15/2017 11:50:00 AM	30220
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **MAB**	
Diesel Range Organics (DRO)	180	99		mg/Kg	10	2/10/2017 1:39:54 PM	30132
Motor Oil Range Organics (MRO)	1100	490		mg/Kg	10	2/10/2017 1:39:54 PM	30132
Surr: DNOP	0	70-130	S	%Rec	10	2/10/2017 1:39:54 PM	30132
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/10/2017 8:17:23 PM	30145
Surr: BFB	96.9	54-150		%Rec	1	2/10/2017 8:17:23 PM	30145
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	2/10/2017 8:17:23 PM	30145
Toluene	ND	0.050		mg/Kg	1	2/10/2017 8:17:23 PM	30145
Ethylbenzene	ND	0.050		mg/Kg	1	2/10/2017 8:17:23 PM	30145
Xylenes, Total	ND	0.10		mg/Kg	1	2/10/2017 8:17:23 PM	30145
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	2/10/2017 8:17:23 PM	30145

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1702473**

16-Feb-17

Client: Souder, Miller & Associates

Project: Chama

Sample ID	**MB-30220**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**30220**	RunNo:	**40714**					
Prep Date:	**2/14/2017**	Analysis Date:	**2/14/2017**	SeqNo:	**1276607**	Units:	**mg/Kg**			

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

Sample ID	**LCS-30220**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**30220**	RunNo:	**40714**					
Prep Date:	**2/14/2017**	Analysis Date:	**2/14/2017**	SeqNo:	**1276608**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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#: **1702473**

16-Feb-17

Client: Souder, Miller & Associates

Project: Chama

Sample ID **MB-30132**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30132**	RunNo: **40642**
Prep Date: **2/9/2017**	Analysis Date: **2/10/2017**	SeqNo: **1273486** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.1		10.00		90.9	70	130			

Sample ID **LCS-30132**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **30132**	RunNo: **40642**
Prep Date: **2/9/2017**	Analysis Date: **2/10/2017**	SeqNo: **1273579** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.9	63.8	116			
Surr: DNOP	4.5		5.000		90.3	70	130			

Sample ID **LCS-30134**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **30134**	RunNo: **40644**
Prep Date: **2/9/2017**	Analysis Date: **2/10/2017**	SeqNo: **1274158** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.5	63.8	116			
Surr: DNOP	4.6		5.000		92.5	70	130			

Sample ID **MB-30134**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30134**	RunNo: **40644**
Prep Date: **2/9/2017**	Analysis Date: **2/10/2017**	SeqNo: **1274159** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		98.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1702473**

16-Feb-17

Client: Souder, Miller & Associates

Project: Chama

Sample ID	**MB-30145**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**30145**	RunNo:	**40653**					
Prep Date:	**2/9/2017**	Analysis Date:	**2/10/2017**	SeqNo:	**1274052**	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	880		1000		88.3	54	150			

Sample ID	**LCS-30145**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**30145**	RunNo:	**40653**					
Prep Date:	**2/9/2017**	Analysis Date:	**2/10/2017**	SeqNo:	**1274053**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.5	76.4	125			
Surr: BFB	950		1000		95.1	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1702473**

16-Feb-17

Client: Souder, Miller & Associates

Project: Chama

Sample ID **MB-30145**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **30145**	RunNo: **40653**
Prep Date: **2/9/2017**	Analysis Date: **2/10/2017**	SeqNo: **1274068** Units: **mg/Kg**

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

Sample ID **LCS-30145**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **30145**	RunNo: **40653**
Prep Date: **2/9/2017**	Analysis Date: **2/10/2017**	SeqNo: **1274069** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.6	75.2	115			
Toluene	0.99	0.050	1.000	0	98.9	80.7	112			
Ethylbenzene	1.0	0.050	1.000	0	101	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	101	79.2	115			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1702473 RcptNo: 1

Received by/date: AG 02/09/17

Logged By: Andy Jansson 2/9/2017 9:40:00 AM

Completed By: Andy Jansson 02/09/17

Reviewed By: AG 02/09/17

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address: on file

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name: Chama

Project #:

Project Manager: Austin Wegner

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1702473	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
1/30/17	11:30		L1-1'	4oz g 1	ice	-001	X		X					+								
1/30/17	11:30		L2-1'			-002	X		X					X								
1/30/17	11:30		L3-1'			-003	X		X					X								
			L4-1'			-004	X		X					X								
			L5-6"			-005	X		X					X								
			L6-6"			-006	X		X					X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
2/8/17	0845			2/8/17	0845
2/8/17	1900			02/09/17	0940

Remarks:

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

April 11, 2017

Austin Weyant

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

RE: Chama 3 Fed 1H OrderNo.: 1703E17

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 5 sample(s) on 3/29/2017 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 or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1703E17**
Date Reported: **4/11/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L7-2
Project: Chama 3 Fed 1H
Collection Date: 3/27/2017 9:00:00 AM
Lab ID: 1703E17-001 **Matrix:** SOIL **Received Date:** 3/29/2017 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/29/2017 12:22:11 PM	30970

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L7-4.5
Project: Chama 3 Fed 1H
Collection Date: 3/27/2017 9:15:00 AM
Lab ID: 1703E17-002
Matrix: SOIL
Received Date: 3/29/2017 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/29/2017 12:34:35 PM	30970

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L8-0.5
Project: Chama 3 Fed 1H
Collection Date: 3/27/2017 9:30:00 AM
Lab ID: 1703E17-003 **Matrix:** SOIL **Received Date:** 3/29/2017 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	210	30		mg/Kg	20	3/29/2017 12:47:00 PM	30970
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	26	9.2		mg/Kg	1	3/30/2017 9:03:32 PM	30969
Motor Oil Range Organics (MRO)	200	46		mg/Kg	1	3/30/2017 9:03:32 PM	30969
Surr: DNOP	106	70-130		%Rec	1	3/30/2017 9:03:32 PM	30969
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/30/2017 1:59:39 PM	30956
Surr: BFB	79.2	54-150		%Rec	1	3/30/2017 1:59:39 PM	30956
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.092		mg/Kg	1	3/30/2017 1:59:39 PM	30956
Benzene	ND	0.023		mg/Kg	1	3/30/2017 1:59:39 PM	30956
Toluene	ND	0.046		mg/Kg	1	3/30/2017 1:59:39 PM	30956
Ethylbenzene	ND	0.046		mg/Kg	1	3/30/2017 1:59:39 PM	30956
Xylenes, Total	ND	0.092		mg/Kg	1	3/30/2017 1:59:39 PM	30956
Surr: 4-Bromofluorobenzene	89.9	66.6-132		%Rec	1	3/30/2017 1:59:39 PM	30956

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L8-4
Project: Chama 3 Fed 1H
Collection Date: 3/27/2017 10:00:00 AM
Lab ID: 1703E17-004
Matrix: SOIL
Received Date: 3/29/2017 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	31	30		mg/Kg	20	3/29/2017 12:59:24 PM	30970

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L6-5
Project: Chama 3 Fed 1H
Collection Date: 3/27/2017 10:45:00 AM
Lab ID: 1703E17-005
Matrix: SOIL
Received Date: 3/29/2017 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	3/29/2017 1:11:49 PM	30970

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703E17**

11-Apr-17

Client: Souder, Miller & Associates

Project: Chama 3 Fed 1H

Sample ID	**MB-30970**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**30970**	RunNo:	**41738**					
Prep Date:	**3/29/2017**	Analysis Date:	**3/29/2017**	SeqNo:	**1310982**	Units:	**mg/Kg**			

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

Sample ID	**LCS-30970**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**30970**	RunNo:	**41738**					
Prep Date:	**3/29/2017**	Analysis Date:	**3/29/2017**	SeqNo:	**1310983**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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#: **1703E17**

11-Apr-17

Client: Souder, Miller & Associates

Project: Chama 3 Fed 1H

Sample ID **1703E17-003AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **L8-0.5**	Batch ID: **30969**	RunNo: **41755**
Prep Date: **3/29/2017**	Analysis Date: **3/30/2017**	SeqNo: **1311671** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.5	47.39	25.65	66.4	51.6	130			
Surr: DNOP	5.4		4.739		114	70	130			

Sample ID **1703E17-003AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **L8-0.5**	Batch ID: **30969**	RunNo: **41755**
Prep Date: **3/29/2017**	Analysis Date: **3/30/2017**	SeqNo: **1311672** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	51.55	25.65	52.6	51.6	130	7.88	20	
Surr: DNOP	5.6		5.155		108	70	130	0	0	

Sample ID **LCS-30969**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **30969**	RunNo: **41755**
Prep Date: **3/29/2017**	Analysis Date: **3/30/2017**	SeqNo: **1311683** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	101	63.8	116			
Surr: DNOP	5.2		5.000		104	70	130			

Sample ID **MB-30969**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30969**	RunNo: **41755**
Prep Date: **3/29/2017**	Analysis Date: **3/30/2017**	SeqNo: **1311684** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703E17**

11-Apr-17

Client: Souder, Miller & Associates

Project: Chama 3 Fed 1H

Sample ID	**MB-30956**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**PBS**	Batch ID:	**30956**	RunNo:	**41768**
Prep Date:	**3/29/2017**	Analysis Date:	**3/30/2017**	SeqNo:	**1311406** 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	780		1000		78.0	54	150			

Sample ID	**LCS-30956**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**LCSS**	Batch ID:	**30956**	RunNo:	**41768**
Prep Date:	**3/29/2017**	Analysis Date:	**3/30/2017**	SeqNo:	**1311407** 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	108	76.4	125			
Surr: BFB	830		1000		83.2	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703E17**

11-Apr-17

Client: Souder, Miller & Associates

Project: Chama 3 Fed 1H

Sample ID **MB-30956**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **30956**	RunNo: **41768**
Prep Date: **3/29/2017**	Analysis Date: **3/30/2017**	SeqNo: **1311441** 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	0.88		1.000		87.7	66.6	132			

Sample ID **LCS-30956**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **30956**	RunNo: **41768**
Prep Date: **3/29/2017**	Analysis Date: **3/30/2017**	SeqNo: **1311442** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.86	0.10	1.000	0	86.3	66.5	120			
Benzene	0.99	0.025	1.000	0	99.2	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	0.84		1.000		84.4	66.6	132			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1703E17 RcptNo: 1

Received by/date: AS 03/29/17

Logged By: **Lindsay Mangin** 3/29/2017 9:45:00 AM

Completed By: **Lindsay Mangin** 3/29/2017 9:53:57 AM

Reviewed By: SRC 03/29/17

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
Std. Turn TPH, BTEX
☐ Standard ☒ Rush Chlorides

Project Name:
Chama 3 Fed #1H

Project #:

Project Manager:
Austin Wegant

Sampler:
On Ice: ☑ Yes ☐ No
Sample Temperature: 2.6°C

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1703E17	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
3/27/17	9am	Soil	L7-2	4oz		-001								X								
	9:15		L7-4.5			-002								X								
	9:30		L8-0.5			-003	X		X					X								
	10:00		L8-4			-004								X								
	10:45		L6-5			-005								X								

Date	Time	Relinquished by:	Received by:	Date	Time
3/28/17	1400	Austin Wegant			
			3/28/17	1600	
3/28/17	1900				
			3/29/17	0945	

Remarks:

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

April 12, 2017

Austin Weyant

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

RE: Chama 3 Fed 1 OrderNo.: 1704070

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/4/2017 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 or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Chama 3 Fed 1
Lab Order: 1704070

Lab ID: 1704070-001 **Collection Date:** 3/30/2017 10:50:00 AM
Client Sample ID: L3-2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	620	30		mg/Kg	20	4/7/2017 11:25:43 PM	31145

Lab ID: 1704070-002 **Collection Date:** 3/30/2017 11:10:00 AM
Client Sample ID: L3-10 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	90	30		mg/Kg	20	4/8/2017 12:27:46 AM	31145

Lab ID: 1704070-003 **Collection Date:** 3/30/2017 12:25:00 PM
Client Sample ID: L1-1.5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2600	150		mg/Kg	100	4/11/2017 4:39:32 AM	31145

Lab ID: 1704070-004 **Collection Date:** 3/30/2017 12:25:00 PM
Client Sample ID: L2-1.5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	660	30		mg/Kg	20	4/8/2017 12:52:35 AM	31145

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704070**

12-Apr-17

Client: Souder, Miller & Associates

Project: Chama 3 Fed 1

Sample ID	**MB-31145**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**31145**	RunNo:	**41969**					
Prep Date:	**4/7/2017**	Analysis Date:	**4/7/2017**	SeqNo:	**1318800**	Units:	**mg/Kg**			

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

Sample ID	**LCS-31145**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**31145**	RunNo:	**41969**					
Prep Date:	**4/7/2017**	Analysis Date:	**4/7/2017**	SeqNo:	**1318801**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.8	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1704070 RcptNo: 1

Received By: Andy Jansson 4/4/2017 9:50:00 AM

Completed By: Lindsay Mangin 4/4/2017 10:23:32 AM

Reviewed By: 04/04/17

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: eMail Phone Fax In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

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

Chain-of-Custody Record

Client: SMA

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: Chama 3 Fed 1

Project #:

Project Manager: Austin Weyant

Sampler: Heatle Patterson

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.1°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1704070	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
3/30/17	10:50	Soil	L3-2	4 oz		-001								X								
"	11:10	"	L3-10	"	"	-002								X								
"	12:25	"	L1-1.5	"	"	-003								X								
"	12:25		L2-1.5			-004								X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
				4/3/17	1330
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/3/17	1900			04/04/17	0950

Remarks:

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.

APPENDIX B
FORM C141 INITIAL AND FINAL

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 19 2017

RECEIVED

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-1
Revised August 8, 20

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMA

Release Notification and Corrective Action

nAB1702443626 370922 **OPERATOR** ☒ Initial Report ☐ Final Repo

Name of Company REMNANT OIL OPERATING, LLC	Contact CARIE STOKER
Address PO BOX 5375, MIDLAND, TX 79704	Telephone No. 432 664 7659
Facility Name CHAMA 3 FEDERAL	Facility Type: BATTERY

Surface Owner FEDERAL	Mineral Owner FEDERAL	API No. 30-015-36007

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	03	18S	23E	1880	S	660	E	EDDY

Latitude 32.7749977 **Longitude** -104.6727142

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: **EST** 100 bbls	Volume Recovered: 130 bbls *(see note
Source of Release: Water tank	Date and Hour of Occurrence: 1/15/17	Date and Hour of Discovery 01/15/2017
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? EMAIL SENT TO MIKE BRATCHER & JIM AMOS	
By Whom? CARIE STOKER	Date and Hour 1/15/17 5:49 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Cause of problem: Lightning strike
Remedial Action Taken: Vacuum truck dispatched to recover standing fluids: * an additional 30 bbls of fluid was recovered-this was due to the water being used by the firetrucks to put out the fire; it was also raining during the incident

Describe Area Affected and Cleanup Action Taken.

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: Carie Stoker	OIL CONSERVATION DIVISION Signed By Mike Bratcher Approved by Environmental Specialist:	
Printed Name: CARIE STOKER		
Title: REGULATORY AFFAIR COORDINATOR	Approval Date: 1/23/17	Expiration Date: N/A
E-mail Address: carie@stokeroilfield.com	Conditions of Approval: See attached	Attached ☐
Date: 01/19/2017 Phone: 432 664 7659		

* Attach Additional Sheets If Necessary

2RP-4088

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 1/19/17 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4088 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 2 office in Artesia on or before 2/19/17. 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_6 thru C_{36}), 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_6 thru C_{36}), 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

APPENDIX C
OSE WATER COLUMN DATA

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 05911		CH	2	2	4	04	18S	23E	529157	3626490*	1505	1275	436	839
RA 06105		ED	2	2	4	34	17S	23E	530686	3628131*	1746	560	510	50
RA 02842		ED	1	1	1	12	18S	23E	532543	3625725*	1996	510		
RA 06104		ED	1	1	1	12	18S	23E	532543	3625725*	1996	591	545	46
RA 04755		ED	1	1	1	01	18S	23E	532504	3627337*	2076	600		
RA 05245		ED	1	1	4	04	18S	23E	528553	3626490*	2108	564		
RA 05355		ED		1	1	12	18S	23E	532644	3625626*	2125	578	550	28
RA 03786		ED	2	2	3	04	18S	23E	528345	3626488*	2316	520	443	77
RA 05461		ED		3	4	09	18S	23E	528681	3624384*	2813	400		
RA 06472		ED	3	1	1	15	18S	23E	529371	3623873*	2823	580	460	120
RA 03786 2		ED	1	1	3	04	18S	23E	527737	3626487*	2923	520	443	77
RA 04247		CH			1	36	17S	23E	532794	3628649*	3111	555		
RA 05869		ED	3	1	3	33	17S	23E	527676	3627900*	3345	515	485	30
RA 03286		ED	1	1	4	27	17S	23E	530066	3629731*	3397	496	430	66
RA 03286 REPAR		ED	1	1	4	27	17S	23E	530066	3629731*	3397	496	430	66
RA 04410		ED		2	4	26	17S	23E	532175	3629651*	3600	548	488	60
RA 11657 POD1		ED	4	4	2	26	17S	23E	532221	3629876	3824	525	322	203
RA 04410 CLW318831	O	ED		4	2	26	17S	23E	532173	3630053*	3968	566	66	500
RA 05422		ED	1	1	4	08	18S	23E	526969	3624886*	3982	508	443	65
RA 03950		ED		2	3	05	18S	23E	526623	3626387*	4035	537	480	57
RA 09828		ED	2	4	1	08	18S	23E	526749	3625289*	4060	504		
RA 05793		ED		2	1	08	18S	23E	526645	3625587*	4092	510	510	0
RA 04538		ED			2	32	17S	23E	527176	3628602*	4128	500		
RA 04724		ED			2	32	17S	23E	527176	3628602*	4128	570		
RA 05595		ED			1	32	17S	23E	526371	3628597*	4824	551	515	36
RA 04935		ED	3	1	2	18	18S	24E	534938	3623944*	4926	600	475	125

***UTM location was derived from PLSS - see Help**

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin	Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
														Average Depth to Water:	**446 feet**
														Minimum Depth:	**66 feet**
														Maximum Depth:	**550 feet**

Record Count: 26

UTMNAD83 Radius Search (in meters):

Easting (X): 530658.9 **Northing (Y):** 3626385.14 **Radius:** 5000