Souder, Miller & Associates♦201 S. Halagueno St.♦Carlsbad, NM 88220
(575) 689-8801

October 2, 2017

#5E26442-BG2

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

SUBJECT: SOIL REMEDIATION WORK PLAN FOR THE INCIDENT AT THE LOCO HILLS 4 FEDERAL #4 RELEASE, EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher,

On behalf of Mewbourne Oil Company (Mewbourne), Souder, Miller & Associates (SMA) has prepared this WORK PLAN that describes the assessment, initial delineation and proposed remediation for a release associated with the Loco Hills 4 Federal #4 release. The site is in UNIT A, SECTION 4, TOWNSHIP 18S, RANGE 29E, NMPM, Eddy County, New Mexico, on State land. Figure 1 illustrates the vicinity and location of the site.

Table 1, below, summarizes information regarding the release.

Table 1: Release information and Site Ranking	
Name	Loco Hills 4 Federal #4
Company	Mewbourne Oil Company
RP Number	2RP-4344
API Number	30-015-31024
Location	32.7809601°, -104.0743942°
Estimated Date of Release	8/7/2017
Date Reported to NMOCD	8/8/2017
Land Owner	Private
Reported To	Mike Bratcher
Source of Release	Lighting Strike
Released Material	Oil
Released Volume	10 bbls
Recovered Volume	5 bbls
Net Release	5 bbls
Nearest Waterway	14.6 Miles from Pecos River
Depth to Groundwater	Estimated to be less than 100’
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	10
SMA Response Dates	Initial: 9/4/2017

1.0 Background

The tank battery was struck by lighting causing a release into a lined secondary containment and south of containment. Mist affected 60' by 20' south of the tank battery. A vacuum truck recovered all standing liquid within the secondary containment. The battery tanks and secondary containment was removed after release. The southern area was burned from the fire at the battery.

2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 14 miles east of the Pecos River, with an elevation of approximately 3,532 feet above sea level. SMA searched the New Mexico State Engineer's Office (NMOSE) online water well database for water wells in the vicinity of the release. Three wells are located within a three-mile radius of the site. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be less than 100 feet below ground surface (bgs).

Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Below in Table 2 are the remediation standards and the site ranking for this location. Justification for this site ranking is found in Figure 1 and Appendix B.

Table 2.

Soil Remediation 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

Depth to Groundwater	NMOCD Numeric Rank
< 50 BGS = 20	
50' to 99' = 10	10
>100' = 0	
Distance to Nearest Surface Water	**NMOCD Numeric Rank**
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
Well Head Protection	**NMOCD Numeric Rank**
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
Total Site Ranking	**10**

3.0 Release Characterization

On September 4, 2017 after receiving 811 clearance, SMA field personnel assessed the release area. Soil samples were field-screened using an EC meter. Samples were collected to characterize and delineate the release. 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 analyses including chlorides by Method 300.0, volatile organics (BTEX) by Method 8021B, and MRO, DRO, and GRO by EPA Method 8015D. Sample locations are depicted on Figure 2. All field screening and laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

4.0 Soil Remediation Workplan

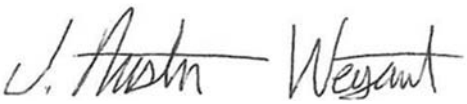
SMA will begin the excavation of affected soils, with approval from area utilities owners via 811 and NMOCD. SMA will continuously guide the excavation activities by collecting composite soil samples for field screening with a mobile titration unit (EPA 4500) and a calibrated PID. Excavation will occur to depths of three feet bgs around L3 shown in Figure 2 to sufficiently remove the impacted materials to NMOCD requirements. Affected soils will be removed from the area before closure samples are collected at the final depth of excavation and from the sidewalls. Approximately 82 cubic yards of contaminated soil are projected to be removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil will be transported for proper disposal at Lea Land, near Carlsbad, NM, an NMOCD permitted disposal facility.

5.0 Scope and Limitations

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, regulatory liaison, and preparation of this work 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 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES



Austin Weyant
Project Scientist

Reviewed by:

Jennifer Knowlton, PE
Senior Engineer II

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Site and Sample Location Map

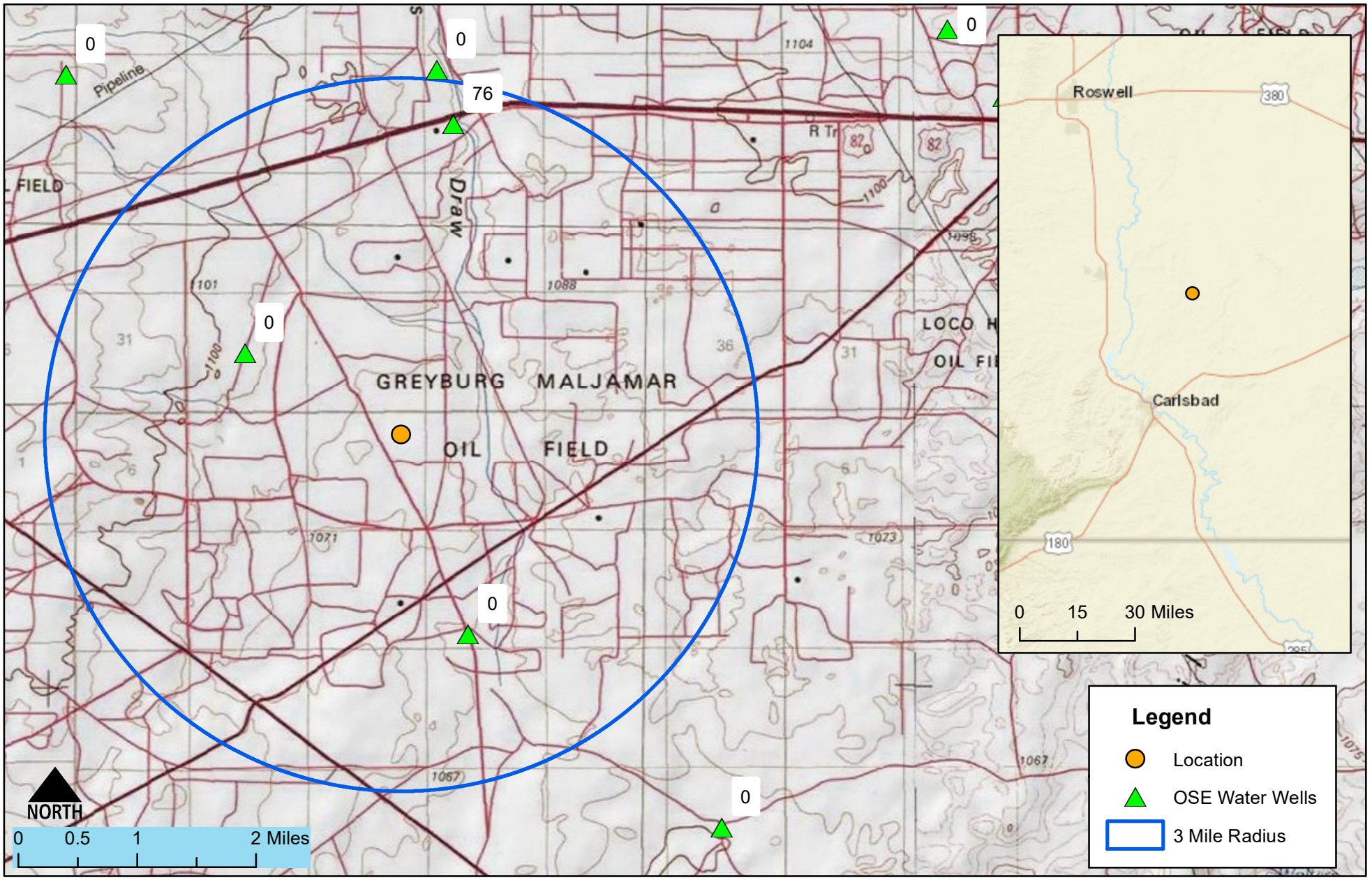
Tables:

Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141 Initial and Final
Appendix B: NMOSE Wells Report
Appendix C: Laboratory Analytical Reports

FIGURE 1
VICINITY AND NMOSE DATA MAP



Vicinity and Well Head Protection Map
Loco Hills 4 Federal #4- Mewbourne
S:4 T18S R29E, New Mexico

Figure 1

Document: C:\Users\lcm.CBO\Documents\GIS DATA\MAPS\loco hill mew.mxd

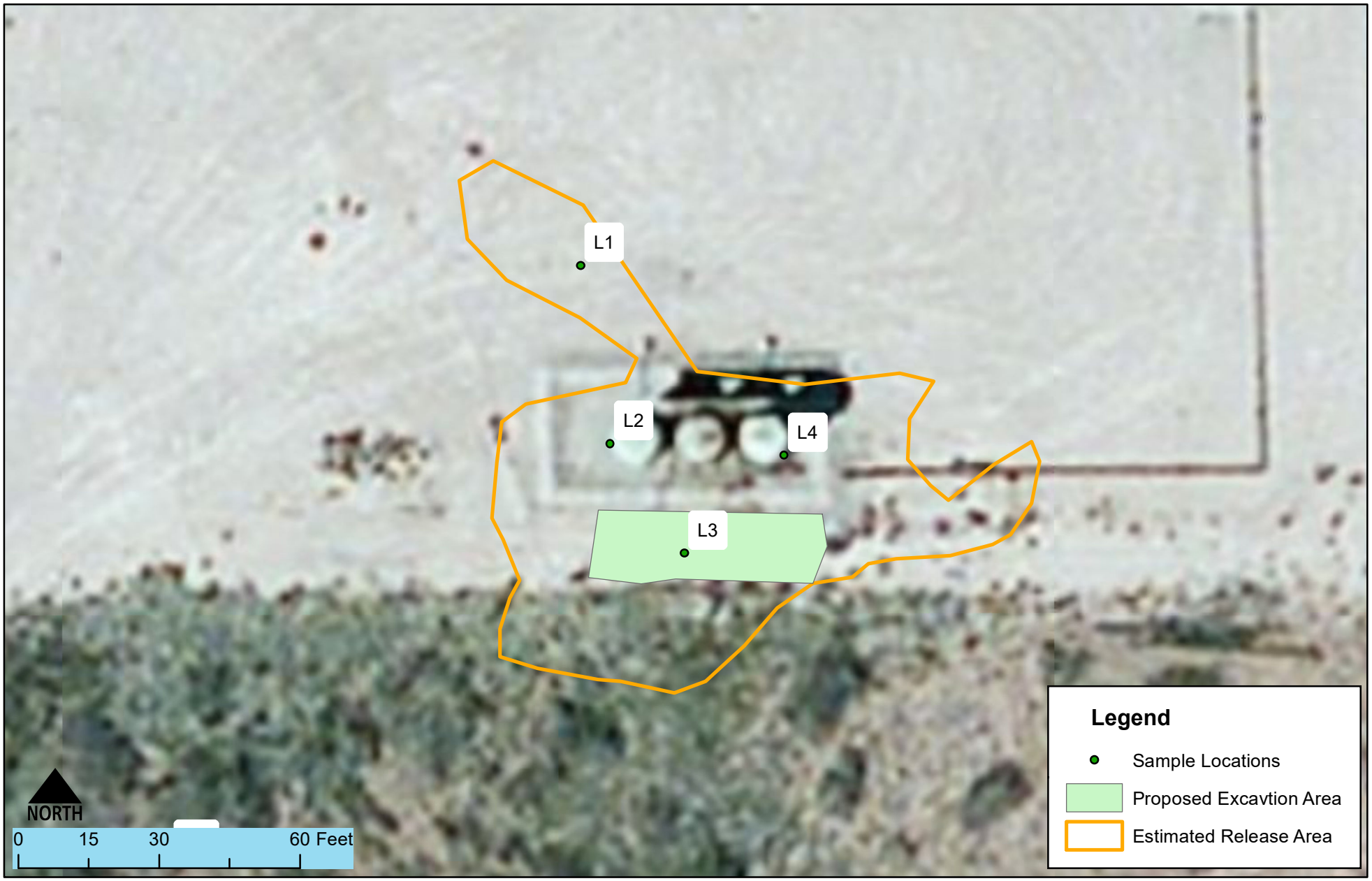
Date Saved: 9/25/2017

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

Drawn Lucas Middleton
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
Loco Hills 4 Federal #4- Mewbourne
S:4 T18S R29E, New Mexico

Figure 2

Revisions
By: Date: Descr:
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Date Saved: 9/25/2017

Document: C:\Users\lcm.CBO\Documents\GIS DATA\MAPS\loco hill mew figure 2.mxd

TABLE 3
SUMMARY SAMPLE RESULTS

Loco Hills 4 Federal #4

Table 3

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Proposed Action	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 10				50 mg/Kg	10 mg/Kg				5000 mg/Kg		
L1	9/4/2017	0.5	in-situ	<0.097	<0.024	31	4300	5000	9331	<132	58
	9/4/2017	2	in-situ	--	--	<4.9	<9.5	<47	<47	<132	--
L2	9/4/2017	0.5	in-situ	<0.10	<0.025	49	11,000	13,000	24049	--	<30
	9/4/2017	2	in-situ	--	--	<4.7	18	<49	<49	<132	--
L3	9/4/2017	0.5	in-situ	0.46	<0.024	18	3300	1800	5118	--	2300
	9/4/2017	2	in-situ	--	--	99	11000	6000	17099	267	--
	9/4/2017	4	in-situ	--	--	--	--	--	--	141	140
	9/4/2017	10	in-situ	--	--	--	--	--	--	<132	160
L4	9/4/2017	0.5	in-situ	<0.096	<0.024	<4.8	43	69	112	--	--
	9/4/2017	2	in-situ	--	--	--	--		--	187	--
BG	9/4/2017	2	in-situ	--	--	<4.8	<9.5	<47	<47	--	--

"--" = Not Analyzed

APPENDIX A
FORM C141 INITIAL

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 14 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-141
Revised August 8, 2011

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

Release Notification and Corrective Action

nAB1722836266

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Mewbourne Oil Company 14744	Contact: Zack Thomas
Address: PO Box 5270 Hobbs NM 88241	Telephone No. 575-393-5905
Facility Name: Loco Hills 4 Federal #4	Facility Type: Producing Oil Well

Surface Owner: Private	Mineral Owner: BLM	API No. 30-015-31024

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	4	18S	29E	990'	North	990'	East	Eddy

Latitude 32.7809601 **Longitude** -104.0743942

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: estimated 10 bbls oil	Volume Recovered: 5 bbls oil
Source of Release: Tank Battery	Date and Hour of Occurrence 8-7-17	Date and Hour of Discovery 8-8-17 7:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher, NMOCD	
By Whom? Zack Thomas	Date and Hour 8-8-17 12:00 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.*

Lightning struck tank battery causing fire. Well was shut-in and all separation equipment isolated. Loco Hills Fire Department was dispatched to put out fire.

Describe Area Affected and Cleanup Action Taken.*

Affected area- Tank secondary containment. Vacuum truck used to recover all standing fluid inside secondary containment. Mist affected a 60' x 20' area south of tanks.

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: Z. Thomas

Printed Name: Zack Thomas

Title: Environmental Rep.

E-mail Address: zthomas@mewbourne.com

Date: 8-9-17 Phone: 575-602-2188

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By

Approval Date: 8/15/17 Expiration Date: N/A

Conditions of Approval: See Attached

Attached ☐ 2RP-4344

* Attach Additional Sheets If Necessary

www.emnrd.state.nm.us
Current forms are available on our website and should be used when filing regulatory documents.

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 8/14/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4344 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 9/14/2017. 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

APPENDIX B
NMOSE WELLS REPORT

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	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 11807 POD1		ED	1	2	3	22	17S	29E	587360	3631585	4256	131	76	55

Average Depth to Water: **76 feet**

Minimum Depth: **76 feet**

Maximum Depth: **76 feet**

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 586680.83 **Northing (Y):** 3627384 **Radius:** 5000

APPENDIX C

LABORATORY ANALYTICAL REPORTS

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

Bratcher, Mike, EMNRD

From: Zack Thomas <zthomas@mewbourne.com>
Sent: Monday, August 14, 2017 10:34 AM
To: Bratcher, Mike, EMNRD; Tucker, Shelly
Subject: Lightning Strikes
Attachments: C141- Aries 20 Fed Battery (8-7-17) Initial & Final.pdf; C141- Loco Hills 4 Federal #4 (8-7-17) Initial.pdf

Guys,

Attached are the C141's for last week's battery fires due to lightning.

The Aries battery does not have its own API #. It services the Aries 20 Fed #1, #2, #3, and #4 wells but sits on the same location as the Santo Nino 19 #2 (API: 30-015-28328). All fluid stayed inside line secondary containment which was un damaged during event.

The Loco Hills secondary containment was not lined so a remediation work plan proposal will be submitted asap.

If there are any questions or concerns please feel free to call/email. Thanks

Zack Thomas
Environmental Rep.
Mewbourne Oil Company
PO Box 5270
Hobbs, NM 88241 US

Phone: (575) 393-5905 | Fax: (575) 397-6252
(575) 602-2188
Email: zthomas@Mewbourne.com

MEWBOURNE
OIL COMPANY

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

September 20, 2017

Austin Weyant

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

RE: Loco Hills OrderNo.: 1709406

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 10 sample(s) on 9/8/2017 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 qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-0.5
Project: Loco Hills
Collection Date: 9/4/2017 9:32:00 AM
Lab ID: 1709406-001 **Matrix:** SOIL **Received Date:** 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	58	30		mg/Kg	20	9/13/2017 4:30:55 PM	33825
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	4300	99		mg/Kg	10	9/12/2017 10:08:53 PM	33795
Motor Oil Range Organics (MRO)	6000	490		mg/Kg	10	9/12/2017 10:08:53 PM	33795
Surr: DNOP	0	70-130	S	%Rec	10	9/12/2017 10:08:53 PM	33795
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	31	4.8		mg/Kg	1	9/12/2017 11:59:15 PM	33771
Surr: BFB	315	54-150	S	%Rec	1	9/12/2017 11:59:15 PM	33771
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/12/2017 11:59:15 PM	33771
Toluene	ND	0.048		mg/Kg	1	9/12/2017 11:59:15 PM	33771
Ethylbenzene	ND	0.048		mg/Kg	1	9/12/2017 11:59:15 PM	33771
Xylenes, Total	1.3	0.097		mg/Kg	1	9/12/2017 11:59:15 PM	33771
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	9/12/2017 11:59:15 PM	33771

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-.2
Project: Loco Hills
Collection Date: 9/4/2017 9:32:00 AM
Lab ID: 1709406-002
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	9/12/2017 10:33:52 PM	33795
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/12/2017 10:33:52 PM	33795
Surr: DNOP	111	70-130		%Rec	1	9/12/2017 10:33:52 PM	33795
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/13/2017 12:22:45 AM	33771
Surr: BFB	99.1	54-150		%Rec	1	9/13/2017 12:22:45 AM	33771

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-0.5
Project: Loco Hills
Collection Date: 9/4/2017 10:32:00 AM
Lab ID: 1709406-003 **Matrix:** SOIL **Received Date:** 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	9/13/2017 4:43:19 PM	33825
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	11000	980		mg/Kg	100	9/13/2017 1:35:03 PM	33795
Motor Oil Range Organics (MRO)	13000	4900		mg/Kg	100	9/13/2017 1:35:03 PM	33795
Surr: DNOP	0	70-130	S	%Rec	100	9/13/2017 1:35:03 PM	33795
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	49	5.0		mg/Kg	1	9/13/2017 12:46:11 AM	33771
Surr: BFB	353	54-150	S	%Rec	1	9/13/2017 12:46:11 AM	33771
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	9/13/2017 12:46:11 AM	33771
Toluene	ND	0.050		mg/Kg	1	9/13/2017 12:46:11 AM	33771
Ethylbenzene	0.15	0.050		mg/Kg	1	9/13/2017 12:46:11 AM	33771
Xylenes, Total	2.8	0.10		mg/Kg	1	9/13/2017 12:46:11 AM	33771
Surr: 4-Bromofluorobenzene	114	66.6-132		%Rec	1	9/13/2017 12:46:11 AM	33771

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-2
Project: Loco Hills
Collection Date: 9/4/2017 10:32:00 AM
Lab ID: 1709406-004
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	18	9.8		mg/Kg	1	9/14/2017 10:15:57 AM	33824
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/14/2017 10:15:57 AM	33824
Surr: DNOP	95.2	70-130		%Rec	1	9/14/2017 10:15:57 AM	33824
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/13/2017 2:19:47 AM	33771
Surr: BFB	94.4	54-150		%Rec	1	9/13/2017 2:19:47 AM	33771

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-0.5
Project: Loco Hills
Collection Date: 9/4/2017 9:50:00 AM
Lab ID: 1709406-005
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2300	75		mg/Kg	50	9/15/2017 2:10:02 AM	33825
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	3300	94		mg/Kg	10	9/12/2017 11:48:50 PM	33795
Motor Oil Range Organics (MRO)	1800	470		mg/Kg	10	9/12/2017 11:48:50 PM	33795
Surr: DNOP	0	70-130	S	%Rec	10	9/12/2017 11:48:50 PM	33795
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	18	4.8		mg/Kg	1	9/13/2017 2:43:07 AM	33771
Surr: BFB	208	54-150	S	%Rec	1	9/13/2017 2:43:07 AM	33771
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/13/2017 2:43:07 AM	33771
Toluene	ND	0.048		mg/Kg	1	9/13/2017 2:43:07 AM	33771
Ethylbenzene	ND	0.048		mg/Kg	1	9/13/2017 2:43:07 AM	33771
Xylenes, Total	0.46	0.096		mg/Kg	1	9/13/2017 2:43:07 AM	33771
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	9/13/2017 2:43:07 AM	33771

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-2
Project: Loco Hills
Collection Date: 9/4/2017 9:51:00 AM
Lab ID: 1709406-006
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	11000	500		mg/Kg	50	9/13/2017 1:57:11 PM	33795
Motor Oil Range Organics (MRO)	6000	2500		mg/Kg	50	9/13/2017 1:57:11 PM	33795
Surr: DNOP	0	70-130	S	%Rec	50	9/13/2017 1:57:11 PM	33795
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	99	4.7		mg/Kg	1	9/13/2017 3:06:33 AM	33771
Surr: BFB	687	54-150	S	%Rec	1	9/13/2017 3:06:33 AM	33771

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-4
Project: Loco Hills
Collection Date: 9/4/2017 10:00:00 AM
Lab ID: 1709406-007
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	140	30		mg/Kg	20	9/13/2017 5:08:09 PM	33825

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-10
Project: Loco Hills
Collection Date: 9/4/2017 10:10:00 AM
Lab ID: 1709406-008
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	160	30		mg/Kg	20	9/13/2017 5:20:33 PM	33825

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-0.5
Project: Loco Hills
Collection Date: 9/4/2017 10:20:00 AM
Lab ID: 1709406-009
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	43	10		mg/Kg	1	9/13/2017 1:12:52 PM	33795
Motor Oil Range Organics (MRO)	69	50		mg/Kg	1	9/13/2017 1:12:52 PM	33795
Surr: DNOP	92.1	70-130		%Rec	1	9/13/2017 1:12:52 PM	33795
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/13/2017 1:56:45 PM	33771
Surr: BFB	104	54-150		%Rec	1	9/13/2017 1:56:45 PM	33771
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/13/2017 1:56:45 PM	33771
Toluene	ND	0.048		mg/Kg	1	9/13/2017 1:56:45 PM	33771
Ethylbenzene	ND	0.048		mg/Kg	1	9/13/2017 1:56:45 PM	33771
Xylenes, Total	ND	0.096		mg/Kg	1	9/13/2017 1:56:45 PM	33771
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	9/13/2017 1:56:45 PM	33771

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-2
Project: Loco Hills
Collection Date: 9/4/2017 10:20:00 AM
Lab ID: 1709406-010
Matrix: SOIL
Received Date: 9/8/2017 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	9/13/2017 1:03:51 AM	33795
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/13/2017 1:03:51 AM	33795
Surr: DNOP	78.1	70-130		%Rec	1	9/13/2017 1:03:51 AM	33795
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/13/2017 3:53:30 AM	33771
Surr: BFB	97.6	54-150		%Rec	1	9/13/2017 3:53:30 AM	33771

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709406**

20-Sep-17

Client: Souder, Miller & Associates

Project: Loco Hills

Sample ID	**MB-33825**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**33825**	RunNo:	**45622**					
Prep Date:	**9/12/2017**	Analysis Date:	**9/13/2017**	SeqNo:	**1447246**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.50								

Sample ID	**LCS-33825**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**33825**	RunNo:	**45622**					
Prep Date:	**9/12/2017**	Analysis Date:	**9/13/2017**	SeqNo:	**1447247**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	13.7	1.50	15.00	0	91.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709406**

20-Sep-17

Client: Souder, Miller & Associates

Project: Loco Hills

Sample ID	**LCS-33795**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**33795**		RunNo:	**45555**				
Prep Date:	**9/11/2017**	Analysis Date:	**9/12/2017**		SeqNo:	**1444957**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.2	73.2	114			
Surr: DNOP	4.5		5.000		90.5	70	130			

Sample ID	**MB-33795**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**33795**		RunNo:	**45555**				
Prep Date:	**9/11/2017**	Analysis Date:	**9/12/2017**		SeqNo:	**1444960**	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	9.6		10.00		95.8	70	130			

Sample ID	**LCS-33824**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**33824**		RunNo:	**45619**				
Prep Date:	**9/12/2017**	Analysis Date:	**9/14/2017**		SeqNo:	**1447143**	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	99.0	73.2	114			
Surr: DNOP	4.7		5.000		94.3	70	130			

Sample ID	**MB-33824**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**33824**		RunNo:	**45619**				
Prep Date:	**9/12/2017**	Analysis Date:	**9/14/2017**		SeqNo:	**1447144**	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	9.8		10.00		98.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709406**

20-Sep-17

Client: Souder, Miller & Associates

Project: Loco Hills

Sample ID	**MB-33771**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445361**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		98.4	54	150			

Sample ID	**LCS-33771**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445362**	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	98.5	76.4	125			
Surr: BFB	1100		1000		107	54	150			

Sample ID	**1709406-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**L1-.2**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445365**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.9	24.34	0	107	77.8	128			
Surr: BFB	1100		973.7		111	54	150			

Sample ID	**1709406-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**L1-.2**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445366**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.9	24.68	0	105	77.8	128	0.515	20	
Surr: BFB	1000		987.2		105	54	150	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709406**

20-Sep-17

Client: Souder, Miller & Associates

Project: Loco Hills

Sample ID	**MB-33771**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445395**	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	1.1		1.000		107	66.6	132			

Sample ID	**LCS-33771**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445396**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.0	80	120			
Toluene	0.98	0.050	1.000	0	97.8	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	66.6	132			

Sample ID	**1709406-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**L1-0.5**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445398**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	0.9930	0	89.6	80.9	132			
Toluene	0.93	0.050	0.9930	0	93.8	79.8	136			
Ethylbenzene	1.0	0.050	0.9930	0	105	79.4	140			
Xylenes, Total	4.2	0.099	2.979	1.277	97.6	78.5	142			
Surr: 4-Bromofluorobenzene	1.1		0.9930		114	66.6	132			

Sample ID	**1709406-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**L1-0.5**	Batch ID:	**33771**	RunNo:	**45568**					
Prep Date:	**9/8/2017**	Analysis Date:	**9/12/2017**	SeqNo:	**1445399**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9728	0	92.4	80.9	132	0.936	20	
Toluene	0.93	0.049	0.9728	0	95.8	79.8	136	0.141	20	
Ethylbenzene	1.0	0.049	0.9728	0	105	79.4	140	1.85	20	
Xylenes, Total	4.2	0.097	2.918	1.277	99.1	78.5	142	0.414	20	
Surr: 4-Bromofluorobenzene	1.1		0.9728		110	66.6	132	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1709406 RcptNo: 1

Received By: Sophia Campuzano 9/8/2017 9:05:00 AM

Completed By: Ashley Gallegos 9/8/2017 11:02:20 AM

Reviewed By: ENM 9/8/17

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	2.9	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: 5 day turn
☐ Standard ☐ Rush

Project Name: Loco Hills

Project #:

Project Manager: Austin Weyant

Sampler: JAW

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.9

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. 1709406	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)
SRC 09/08/17																		
09/04/17	9:32	Soil	L1-0.5	4oz		-001	X		X					X				
	9:32		L1-2			-002			X									
	10:32		L2-0.5			-003	X		X					X				
	10:32		L2-2			-004			X									
	9:50		L3-0.5			-005	X		X					X				
	9:51		L3-2			-006			X									
	10:00		L3-4			-007								X				
	10:10		L3-10			-008								X				
	10:20		L4-0.5			-009	X		X									
↓	10:20		L4-2			-010			X									

Date	Time	Relinquished by:	Received by:	Date	Time
9/7/17			Sophie Cox	09/08/17	0905
Date:	Time:	Relinquished by:	Received by:	Date	Time

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.

Courier