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

January 21, 2020

#5E27950-BG13

NMOCD District 1
1625 N. French Dr
Hobbs, New Mexico 88240

SUBJECT: Closure Report for the Madera 19 WB Federal Com 5H Release (1RP-5468), Lea County, New Mexico

To Whom it May Concern:

On behalf of Marathon Oil Permian LLC (Marathon), Souder, Miller & Associates (SMA) has prepared this Closure Report that describes the remediation for a release of liquids related to oil and gas production activities at the Madera 19 WB Federal Com 5H site. The site is in Unit N Section 19, Township 26S, Range 35E, Lea County, New Mexico, on Federal (BLM) land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1, summarizes information regarding the release.

Table 1: Release Information and Closure Criteria			
Name	Madera 19 WB Fed Com 5H	Company	Marathon Oil Permian LLC
API Number	30-025-44901	Location	32.02282908, -103.41060729
Incident Number	1RP-5468		
Estimated Date of Release	04/20/2019	Date Reported to NMOCD	5/8/2019
Land Owner	Federal (BLM)	Reported To	NMOCD
Source of Release	4” Frac fluid hose		
Released Volume	17.81 bbls	Released Material	Frac Fluid
Recovered Volume	12	Net Release	5.81
NMOCD Closure Criteria	>100 feet to groundwater		
SMA Response Dates	January 6, 2020		

1.0 Background

On April 20, 2019, a release was discovered at the Madera 19 WB Fed Com 5H site due to a ruptured 4" transfer hose. Initial response activities were conducted by operator, and included source elimination, site security, containment, and site stabilization activities, which recovered approximately 12 barrels of fluid that was hauled to and disposed of at an approved disposal facility. Figure 1 illustrates the vicinity and site location and Figure 3 illustrates the release location. The C-141 forms are included in Appendix A.

2.0 Site Information and Closure Criteria

The Madera 19 WB Federal Com 5H is located approximately 13 miles west of Bennet, New Mexico on Federal (BLM) land at an elevation of approximately 3,180 feet above mean sea level (amsl).

Based upon NMOSE (Appendix B), depth to groundwater in the area is estimated to be 158 feet below grade surface (bgs). There are no known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 4/22/2019). The nearest significant watercourse is a playa, located approximately 1.33 miles to the southeast. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for groundwater depth of greater than 100 feet bgs.

3.0 Release Characterization Activities and Findings

On June 4, 2019, SMA personnel arrived on site in response to the release associated with Madera 19 WB Federal Com 5H. SMA collected discrete surface samples around the release site and throughout the visibly stained area.

A total of 16 sample locations (SP1-SP16) were investigated using a hand-auger, to depths up to 0.25 feet bgs. A total of 7 samples were collected for laboratory analysis for total chloride using EPA Method 300.0; Ammonia as Nitrogen; mercury using EPA method 7471; arsenic, barium, cadmium, chromium, lead, selenium, and silver using EPA method 6010B; motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015M/D; volatiles using EPA 8260B; pH using EPA method 9040C; methanol and ethanol using EPA method 8315B; and glutaraldehyde using EPA method 8315A. The remaining samples were field screened for chloride using an electrical conductivity (EC) meter. All constituents except for chloride and TPH were below regulatory limits as defined in NMAC 19.15.29 Table 1 and NMED-Risk Assessment Guidance for Site Investigations and Remediation VOL I Mar 7,2019 Table A-1: Soil screening levels (Industrial/Occupational Soil, Noncancer)

On September 10, 2019, SMA personnel returned to the site to determine the vertical extent as reasonably possible while flowback operation were ongoing. Six samples were collected at six inch (6") intervals to depths of 2'-4'. A total of 10 samples were collected for laboratory analysis for total chloride using EPA Method 300.0 and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D. Table 3 itemizes the samples and field-screening results as well as identifying any variances from the typical specification of two samples per boring. Locations for all samples are depicted on Figure 3.

Laboratory samples were collected in accordance with the sampling protocol included in Appendix C. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico (Appendix D).

As summarized in Table 3, results indicate that an area approximately 255 feet by 205 feet by six (6) inches deep has been impacted.

In the workplan dated September 24, 2019 , SMA proposed excavating and removing contaminated soil in the impacted area to approximately six (6) inches bgs. On November 20, 2019, NMOCD and BLM approved the workplan.

4.0 Soil Remediation Summary

In accordance with the approved workplan, on January 6, 2020, SMA returned to the site to guide the excavation of contaminated soil. After approval from area utilities via 811, SMA guided the excavation activities by collecting soil samples for field screening. Samples were screened for chloride using an electrical conductivity (EC) meter. The walls and base were excavated until field screening results indicated that the NMOCD Closure Criteria would be met.

On January 6, 2020, SMA conducted confirmation sampling of the walls and base of the excavation, which measured approximately 125 feet by 115 feet with a maximum depth of 1-foot bgs. Confirmation samples were comprised of five-point composites of the base (BH1-BH4) and walls (SW1-SW3).

Figure 3 shows the extent of the excavation and sample locations. Laboratory results are summarized in Table 3. Laboratory reports are included in Appendix D.

Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported and disposed of at R360 an NMOCD permitted disposal facility.

5.0 Scope and Limitations

The scope of our services included: assessment sampling; verifying release stabilization; regulatory liaison; remediation; and preparing this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Ashley Maxwell or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Ashley Maxwell
Project Scientist

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Surface Water Radius Map
Figure 3: Site and Sample Location Map

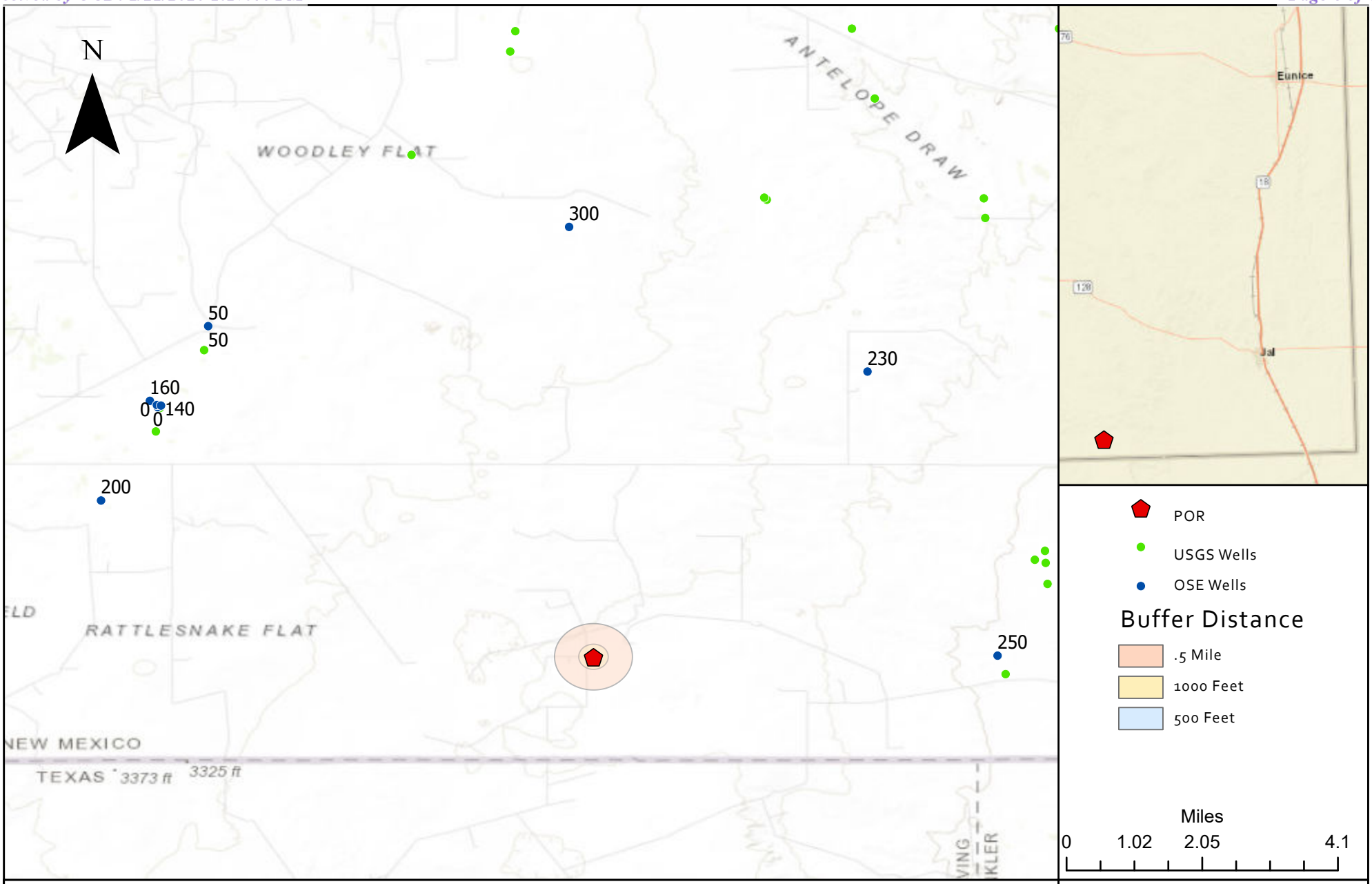
Tables:

Table 2: NMOCD Closure Criteria Justification
Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141
Appendix B: NMOSE Wells Report
Appendix C: Field Notes and Site Photography
Appendix D: Laboratory Analytical Reports

FIGURES



Regional Vicinity & Wellhead Protection Map
Madera 19 WB Federal Com 5H-Marathon Oil
Sec. 19 T26S R35E, Lea County, New Mexico

Figure 1

P:\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

Date Saved: 6/20/2019

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

Drawn Henryetta Price
Date 6/21/2019
Checked
Approved

201 South Halaguena Street
Carlsbad, New Mexico 88221
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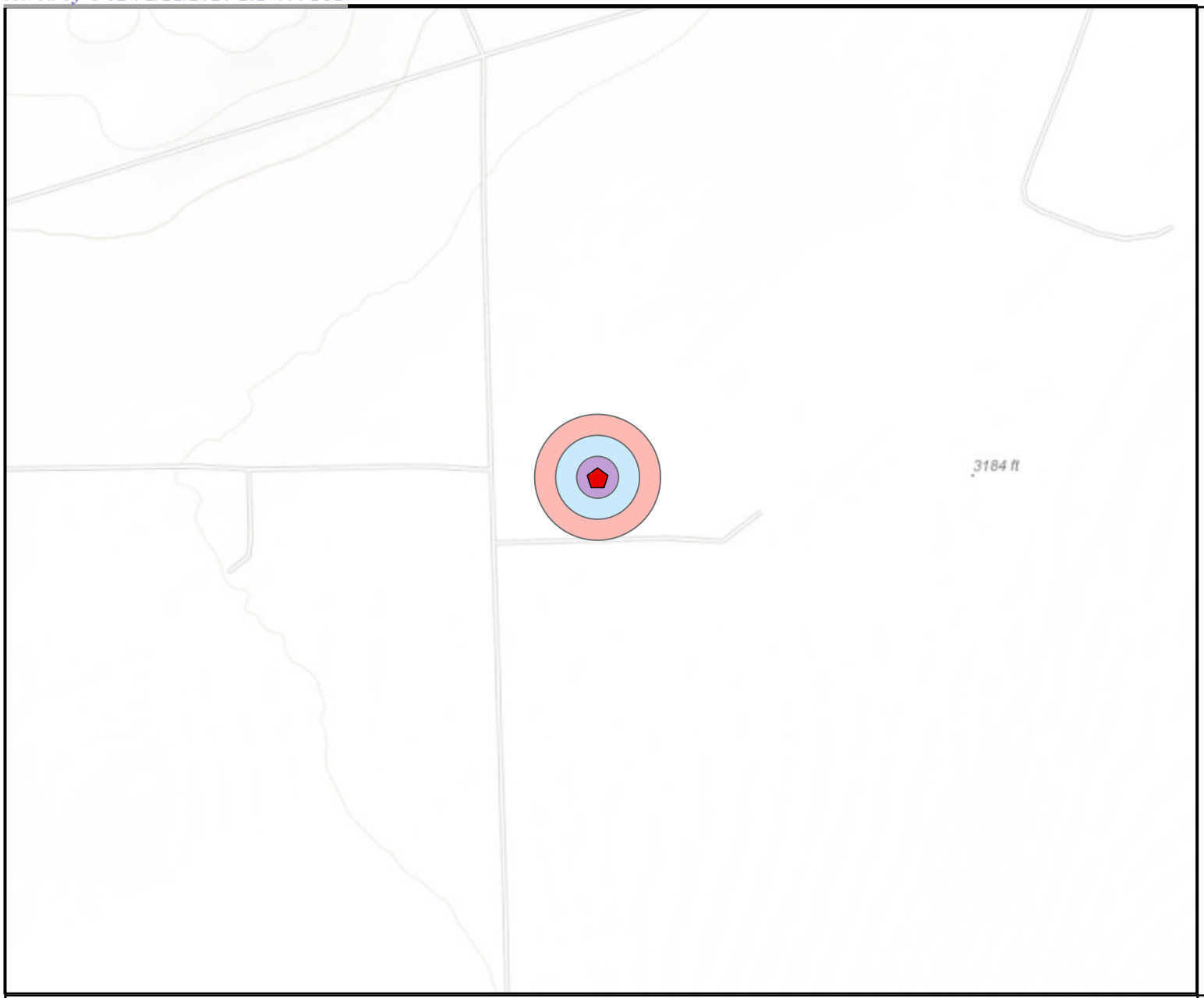

Legend

- Streams Canals
- Springs Seeps
- Rivers
- Flowlines SENM
- NM Wetlands
- Lakes Playas
- FEMA Flood Zones 2011
- Point of Release

Buffer Distance

- 100 Feet
- 200 Feet
- 300 Feet

N

1,000 Feet

Surface Water Protection Map
Madera 19 WB Federal Com 5H - Marathon Oil
UL: N S: 19 T: 26S R: 35E Lea County, New Mexico

Figure 2

P:\5-Marathon 2019 MSA (5E27950)\GIS\ARC\GSMARATHON_MIT.aprx

Date Saved: 1/16/2020

Revisions

By:_____ Date:_____ Descr:_____

By:_____ Date:_____ Descr:_____

Drawn Lynn A. Acosta
Date 1/17/2020
Checked
Approved

SMA

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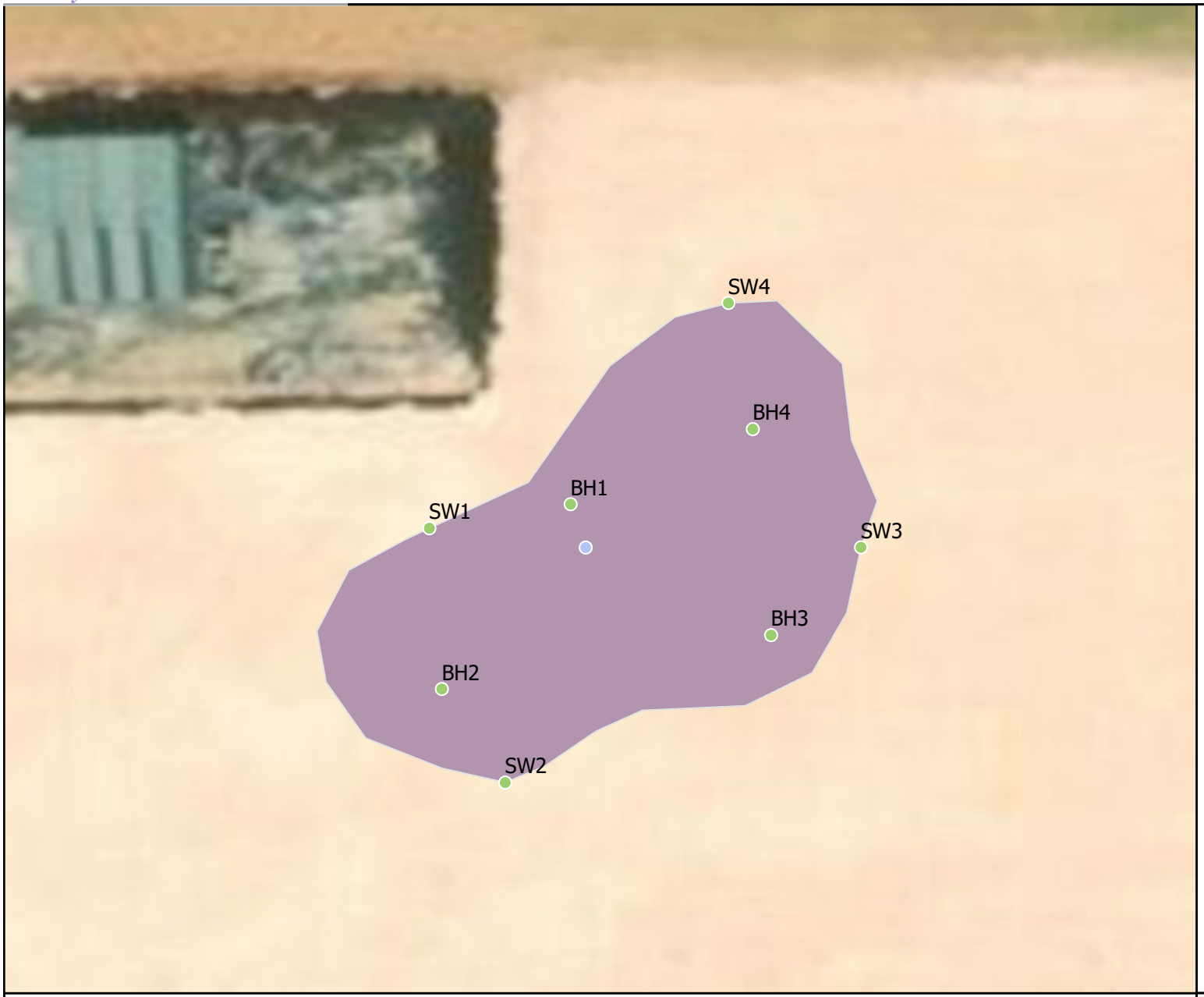

Legend

- Point of Release
- Sample Locations
- 1' Excavation

N

0 17 34 68

Feet

Excavation and Closure Sample Location Map
Madera 19 WB Federal Com 5H- Marathon Oil
Sec 12 T: 26S R: 35E Lea County, New Mexico

Figure 3A

\\192.168.22.10\Projects\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

Date Saved: 1/16/2020

Revisions

By:_____ Date:_____ Descr:_____

By:_____ Date:_____ Descr:_____

Drawn Lynn A. Acosta
Date 1/17/2020
Checked
Approved

SMA

201 South Halagueno Street
Carlsbad, New Mexico 88220
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TABLES

Table 2:
NMOCD Closure Criteria

Marathon Oil Permian LLC
Madera 19 WB Fed Com 005H(1RP-5468)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	158	USGS Water Well Data/ OSE Well Report
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	>1/2 mile	Figure 2
Hortizontal Distance to Nearest Significant Watercourse (ft)	1,530	Figure 2

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		**Closure Criteria (units in mg/kg)**				
		Chloride *numerical limit or background, whichever is greater	**TPH**	**GRO + DRO**	**BTEX**	**Benzene**
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'		20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	No					
<200' from lakebed, sinkhole or playa lake?	No					
Water Well or Water Source						
<500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	No					
<1000' from fresh water well or spring?	No					
Human and Other Areas			100		50	10
<300' from an occupied permanent residence, school, hospital, institution or church?	No					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	No					
<100' from wetland?	No					
within area overlying a subsurface mine	No					
within an unstable area?	No					
within a 100-year floodplain?	No					

Table 3:
Summary of Sample Results

Marathon Oil Permian LLC
Madera 19 WB Federal Com 5H (1RP-5468)

Sample ID	Sample Date	Depth (feet bgs)	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria >100ft			50	10	1000			2,500	20,000
BH1	1/6/2020	1	<0.219	<0.024	<4.9	<9.5	<47	<61.4	200
BH2	1/6/2020	1	<0.217	<0.024	<4.8	<9.7	<48	<62.5	130
BH3	1/6/2020	1	<0.213	<0.024	<4.7	<9.7	<49	<63.4	170
BH4	1/6/2020	1	<0.221	<0.025	<4.9	<9.7	<48	<62.6	180
SW1	1/6/2020	0-1	<0.216	<0.024	<4.8	<9.5	<48	<62.3	220
SW2	1/6/2020	0-1	<0.213	<0.024	<4.7	<9.2	<46	<59.9	260
SW3	1/6/2020	0-1	<0.212	<0.024	<4.7	<9.9	<50	<64.6	190

"--" = Not Analyzed

APPENDIX A
FORM C141

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	**1RP-5468**
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Isaac Castro	Contact Telephone 575-988-0561
Contact email icastro@marathonoil.com	Incident # *(assigned by OCD)*
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 88220	

Location of Release Source

Latitude 32.02282908 Longitude -103.41060729
(NAD 83 in decimal degrees to 5 decimal places)

Site Name MADERA 19 WB FEDERAL COM #005H	Site Type Oil and gas drilling facility
Date Release Discovered 4/20/19	API# *(if applicable)* 30-025-44901

Unit Letter	Section	Township	Range	County
N	19	26S	35E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe)	Volume/Weight Released (provide units) 17.81 bbls of frac fluid	Volume/Weight Recovered (provide units) 12 bbls of frac fluid

Cause of Release

During stage fracturing operations, a 4” transfer hose ruptured allowing approximately 17.81 bbls of frac fluid to be released to the well location. The release remained on location. Standing fluids are being recovered.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	**1RP-5468**
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? This was a major release as defined by NMAC 19.15.29.7(A) based on volume of material released.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Isaac Castro Title: Environmental Professional

Signature: Isaac Castro Date: 9/11/19

email: icastro@marathonoil.com Telephone: 575-988-0561

OCD Only

Received by: _____ Date: _____

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	**1RP-5468**
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	158 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1RP-5468
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Isaac Castro Title: Environmental Professional

Signature: Isaac Castro Date: 9-27-19

email: icastro@marathonoil.com Telephone: 575-988-0561

OCD Only

Received by: Robert Hamlet Date: 11/13/2019

☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Date: 11/13/2019

Incident ID	
District RP	**1RP-5468**
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Melodie Sanjari Title: Environmental Professional

Signature: Melodie Sanjari Date: 1/20/2020

email: msanjari@marathonoil.com Telephone: 575-988-0561

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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
C 02295	CUB	LE	2	2	4	12	26S	33E	639850	3547710*	9238	250	200	50
C 03442 POD1	C	LE	4	1	2	06	26S	34E	641056	3550028	9462	251		
C 02292 POD1	CUB	LE	4	1	2	06	26S	34E	640992	3549987	9485	200	140	60
C 03441 POD1	C	LE	4	1	2	06	26S	34E	640971	3550039	9535	250		
C 02291	CUB	LE	1	1	2	06	26S	34E	640825	3550140*	9711	220	160	60
C 03795 POD1	C	LE	4	4	3	24	26S	35E	658419	3544221	10158	496	250	246
C 02316	CUB	LE	3	4	3	29	25S	34E	642003	3551967*	10212	100	50	50
C 02317	CUB	LE	3	4	3	29	25S	34E	642003	3551967*	10212	100	50	50
CP 01305 POD1	CP	LE		1	4	31	25S	37E	655628	3551065	10273	420	230	190
C 02299	CUB	LE	4	4	2	24	25S	34E	649417	3554478*	10640	350	300	50

Average Depth to Water: **172 feet**

Minimum Depth: **50 feet**

Maximum Depth: **300 feet**

Record Count: 10

UTMNAD83 Radius Search (in meters):

Easting (X): 648266.2 **Northing (Y):** 3543900.2 **Radius:** 11000

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

APPENDIX C
FIELD NOTES
&
SITE PHOTOGRAPHY

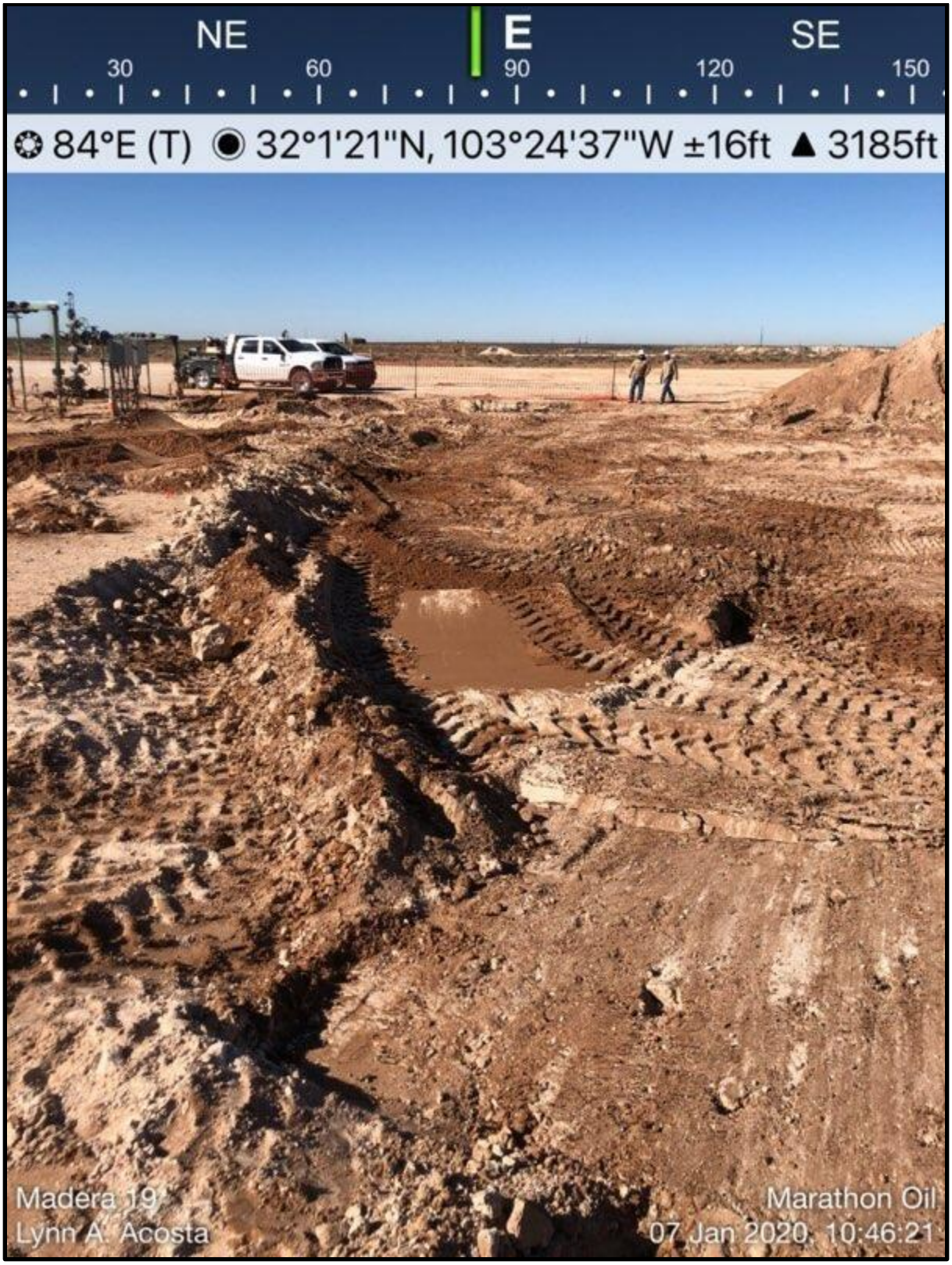
Field Screening

Location Name: Madura 19 WB Fed com 5H

Date: 1-6-2020

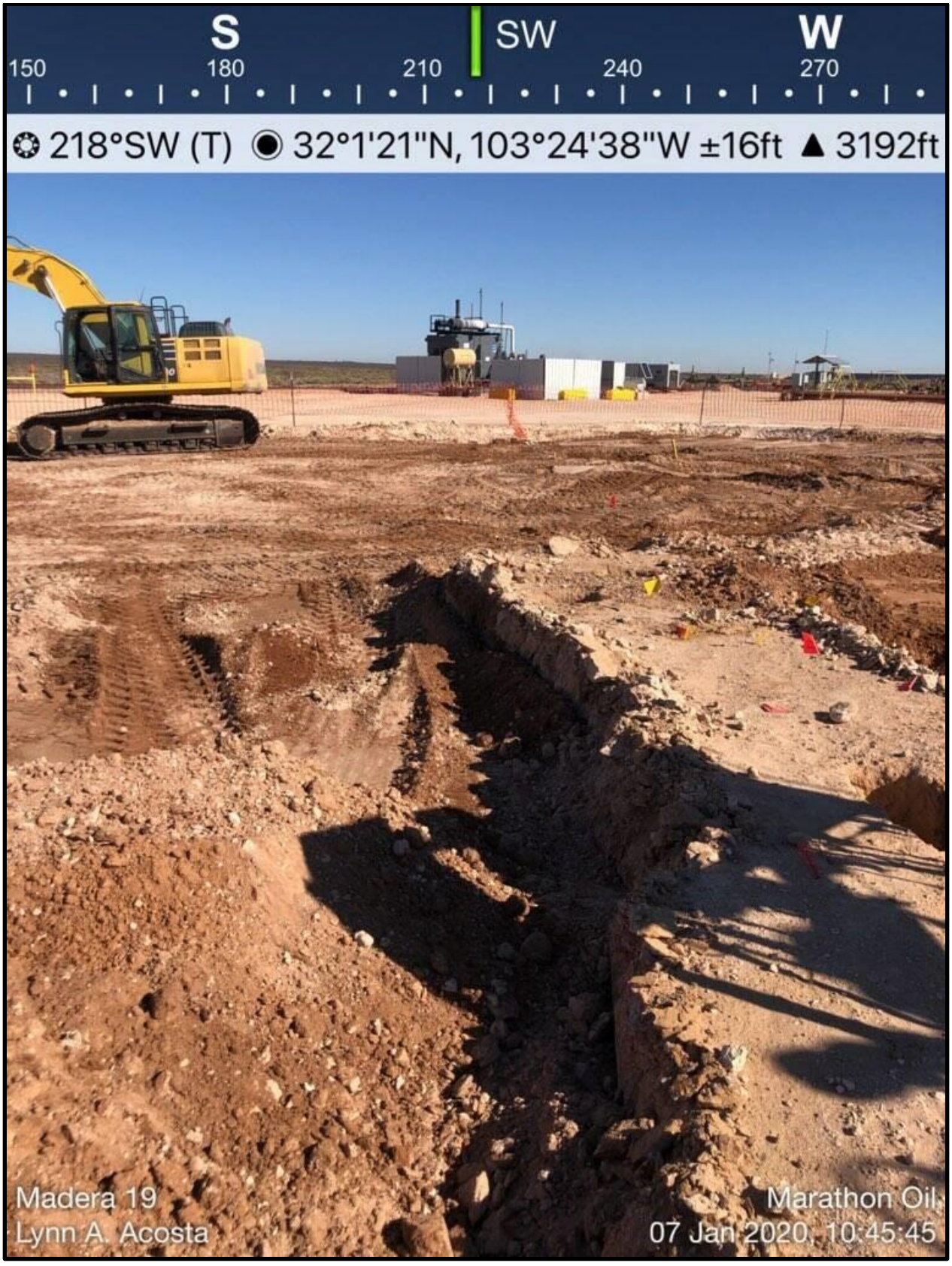
Sample Name:	Soil Type:	Depth (BGS)	Collection Time:	EC (ppm)	Temp (°C)	PID Reading	PF
BH1	Sand	1'	12:12	0.20	16.4	1.4	—
BH2	" "	1'	12:15	0.19	16.4	1.6	—
BH3	" "	1'	12:30	0.22	16.5	2.0	—
BH4	" "	1'	12:50	0.20	16.8	1.8	—
SW1	Caliche / Sand	0-1'	13:05	0.23	16.7	2.2	—
SW2	" "	" "	13:10	0.21	16.7	2.1	—
SW3	" "	" "	13:18	0.20	16.6	1.3	—
SW4	" "	" "	13:23	0.25	16.8	1.5	—

Madera 19 Federal Com 5H
Photo Log



Madera 19 Federal Com 5H
Photo Log

Madera 19 Federal Com 5H
Photo Log



Madera 19 Federal Com 5H
Photo Log

APPENDIX D

LABORATORY ANALYTICAL REPORTS

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

January 15, 2020

Ashley Maxwell

Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL:
FAX

RE: Madera 19 Fed 5 H OrderNo.: 2001228

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 8 sample(s) on 1/8/2020 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH1
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 12:12:00 PM
Lab ID: 2001228-001 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	200	60		mg/Kg	20	1/9/2020 3:49:55 PM	49719
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	1/10/2020 11:42:07 AM	49717
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/10/2020 11:42:07 AM	49717
Surr: DNOP	120	55.1-146		%Rec	1	1/10/2020 11:42:07 AM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/9/2020 12:31:23 PM	49708
Surr: BFB	87.2	66.6-105		%Rec	1	1/9/2020 12:31:23 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 12:31:23 PM	49708
Toluene	ND	0.049		mg/Kg	1	1/9/2020 12:31:23 PM	49708
Ethylbenzene	ND	0.049		mg/Kg	1	1/9/2020 12:31:23 PM	49708
Xylenes, Total	ND	0.097		mg/Kg	1	1/9/2020 12:31:23 PM	49708
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	1/9/2020 12:31:23 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH2
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 12:15:00 PM
Lab ID: 2001228-002 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	130	60		mg/Kg	20	1/9/2020 4:02:20 PM	49719
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	1/10/2020 12:04:00 PM	49717
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/10/2020 12:04:00 PM	49717
Surr: DNOP	117	55.1-146		%Rec	1	1/10/2020 12:04:00 PM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/9/2020 12:55:04 PM	49708
Surr: BFB	84.4	66.6-105		%Rec	1	1/9/2020 12:55:04 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 12:55:04 PM	49708
Toluene	ND	0.048		mg/Kg	1	1/9/2020 12:55:04 PM	49708
Ethylbenzene	ND	0.048		mg/Kg	1	1/9/2020 12:55:04 PM	49708
Xylenes, Total	ND	0.097		mg/Kg	1	1/9/2020 12:55:04 PM	49708
Surr: 4-Bromofluorobenzene	95.7	80-120		%Rec	1	1/9/2020 12:55:04 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH3
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 12:30:00 PM
Lab ID: 2001228-003 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	170	60		mg/Kg	20	1/9/2020 4:14:44 PM	49719
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	1/10/2020 12:26:03 PM	49717
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/10/2020 12:26:03 PM	49717
Surr: DNOP	117	55.1-146		%Rec	1	1/10/2020 12:26:03 PM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/9/2020 1:18:38 PM	49708
Surr: BFB	83.2	66.6-105		%Rec	1	1/9/2020 1:18:38 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 1:18:38 PM	49708
Toluene	ND	0.047		mg/Kg	1	1/9/2020 1:18:38 PM	49708
Ethylbenzene	ND	0.047		mg/Kg	1	1/9/2020 1:18:38 PM	49708
Xylenes, Total	ND	0.095		mg/Kg	1	1/9/2020 1:18:38 PM	49708
Surr: 4-Bromofluorobenzene	94.0	80-120		%Rec	1	1/9/2020 1:18:38 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH4
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 12:50:00 PM
Lab ID: 2001228-004 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	180	60		mg/Kg	20	1/9/2020 4:27:08 PM	49719
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	1/10/2020 12:47:58 PM	49717
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/10/2020 12:47:58 PM	49717
Surr: DNOP	109	55.1-146		%Rec	1	1/10/2020 12:47:58 PM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/9/2020 1:42:12 PM	49708
Surr: BFB	81.3	66.6-105		%Rec	1	1/9/2020 1:42:12 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/9/2020 1:42:12 PM	49708
Toluene	ND	0.049		mg/Kg	1	1/9/2020 1:42:12 PM	49708
Ethylbenzene	ND	0.049		mg/Kg	1	1/9/2020 1:42:12 PM	49708
Xylenes, Total	ND	0.098		mg/Kg	1	1/9/2020 1:42:12 PM	49708
Surr: 4-Bromofluorobenzene	91.6	80-120		%Rec	1	1/9/2020 1:42:12 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 1:05:00 PM
Lab ID: 2001228-005 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	220	60		mg/Kg	20	1/9/2020 4:39:33 PM	49719
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	1/10/2020 1:10:05 PM	49717
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/10/2020 1:10:05 PM	49717
Surr: DNOP	102	55.1-146		%Rec	1	1/10/2020 1:10:05 PM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/9/2020 2:05:49 PM	49708
Surr: BFB	80.6	66.6-105		%Rec	1	1/9/2020 2:05:49 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 2:05:49 PM	49708
Toluene	ND	0.048		mg/Kg	1	1/9/2020 2:05:49 PM	49708
Ethylbenzene	ND	0.048		mg/Kg	1	1/9/2020 2:05:49 PM	49708
Xylenes, Total	ND	0.096		mg/Kg	1	1/9/2020 2:05:49 PM	49708
Surr: 4-Bromofluorobenzene	90.9	80-120		%Rec	1	1/9/2020 2:05:49 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 1:10:00 PM
Lab ID: 2001228-006 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	260	60		mg/Kg	20	1/9/2020 5:16:47 PM	49719
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	1/10/2020 1:32:01 PM	49717
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/10/2020 1:32:01 PM	49717
Surr: DNOP	105	55.1-146		%Rec	1	1/10/2020 1:32:01 PM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/9/2020 2:29:29 PM	49708
Surr: BFB	80.1	66.6-105		%Rec	1	1/9/2020 2:29:29 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 2:29:29 PM	49708
Toluene	ND	0.047		mg/Kg	1	1/9/2020 2:29:29 PM	49708
Ethylbenzene	ND	0.047		mg/Kg	1	1/9/2020 2:29:29 PM	49708
Xylenes, Total	ND	0.095		mg/Kg	1	1/9/2020 2:29:29 PM	49708
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	1/9/2020 2:29:29 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 1:18:00 PM
Lab ID: 2001228-007 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	190	60		mg/Kg	20	1/9/2020 5:29:12 PM	49719
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/10/2020 1:54:05 PM	49717
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/10/2020 1:54:05 PM	49717
Surr: DNOP	103	55.1-146		%Rec	1	1/10/2020 1:54:05 PM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/9/2020 2:53:10 PM	49708
Surr: BFB	82.7	66.6-105		%Rec	1	1/9/2020 2:53:10 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 2:53:10 PM	49708
Toluene	ND	0.047		mg/Kg	1	1/9/2020 2:53:10 PM	49708
Ethylbenzene	ND	0.047		mg/Kg	1	1/9/2020 2:53:10 PM	49708
Xylenes, Total	ND	0.094		mg/Kg	1	1/9/2020 2:53:10 PM	49708
Surr: 4-Bromofluorobenzene	93.0	80-120		%Rec	1	1/9/2020 2:53:10 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001228**
Date Reported: **1/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: Madera 19 Fed 5 H
Collection Date: 1/6/2020 1:23:00 PM
Lab ID: 2001228-008 **Matrix:** SOIL **Received Date:** 1/8/2020 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	270	60		mg/Kg	20	1/10/2020 7:02:08 PM	49749
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	1/10/2020 2:15:55 PM	49717
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/10/2020 2:15:55 PM	49717
Surr: DNOP	100	55.1-146		%Rec	1	1/10/2020 2:15:55 PM	49717
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/9/2020 4:27:57 PM	49708
Surr: BFB	85.5	66.6-105		%Rec	1	1/9/2020 4:27:57 PM	49708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/9/2020 4:27:57 PM	49708
Toluene	ND	0.047		mg/Kg	1	1/9/2020 4:27:57 PM	49708
Ethylbenzene	ND	0.047		mg/Kg	1	1/9/2020 4:27:57 PM	49708
Xylenes, Total	ND	0.095		mg/Kg	1	1/9/2020 4:27:57 PM	49708
Surr: 4-Bromofluorobenzene	96.8	80-120		%Rec	1	1/9/2020 4:27:57 PM	49708

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001228**

15-Jan-20

Client: Souder, Miller & Associates

Project: Madera 19 Fed 5 H

Sample ID: **MB-49719** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **49719** RunNo: **65669**

Prep Date: **1/9/2020** Analysis Date: **1/9/2020** SeqNo: **2256368** Units: **mg/Kg**

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

Sample ID: **LCS-49719** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **49719** RunNo: **65669**

Prep Date: **1/9/2020** Analysis Date: **1/9/2020** SeqNo: **2256369** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Sample ID: **MB-49749** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **49749** RunNo: **65712**

Prep Date: **1/10/2020** Analysis Date: **1/10/2020** SeqNo: **2257076** Units: **mg/Kg**

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

Sample ID: **LCS-49749** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **49749** RunNo: **65712**

Prep Date: **1/10/2020** Analysis Date: **1/10/2020** SeqNo: **2257077** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001228**

15-Jan-20

Client: Souder, Miller & Associates

Project: Madera 19 Fed 5 H

Sample ID: **LCS-49717** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **49717** RunNo: **65691**

Prep Date: **1/9/2020** Analysis Date: **1/10/2020** SeqNo: **2256625** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	63.9	124			
Surr: DNOP	4.8		5.000		95.9	55.1	146			

Sample ID: **MB-49717** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **49717** RunNo: **65691**

Prep Date: **1/9/2020** Analysis Date: **1/10/2020** SeqNo: **2256626** 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		105	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001228**

15-Jan-20

Client: Souder, Miller & Associates

Project: Madera 19 Fed 5 H

Sample ID: **mb-49708**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **49708**	RunNo: **65680**
Prep Date: **1/8/2020**	Analysis Date: **1/9/2020**	SeqNo: **2256104** 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	940		1000		93.6	66.6	105			

Sample ID: **lcs-49708**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **49708**	RunNo: **65680**
Prep Date: **1/8/2020**	Analysis Date: **1/9/2020**	SeqNo: **2256105** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.1	80	120			
Surr: BFB	990		1000		99.3	66.6	105			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001228**

15-Jan-20

Client: Souder, Miller & Associates

Project: Madera 19 Fed 5 H

Sample ID: **mb-49708**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **49708**	RunNo: **65680**
Prep Date: **1/8/2020**	Analysis Date: **1/9/2020**	SeqNo: **2256130** 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	80	120			

Sample ID: **LCS-49708**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **49708**	RunNo: **65680**
Prep Date: **1/8/2020**	Analysis Date: **1/9/2020**	SeqNo: **2256131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.2	80	120			
Toluene	0.93	0.050	1.000	0	93.0	80	120			
Ethylbenzene	0.92	0.050	1.000	0	91.9	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Qualifiers:

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

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: **2001228** RcptNo: **1**

Received By: **Daniel Marquez** **1/8/2020 10:30:00 AM**

Completed By: **Isaiah Ortiz** **1/8/2020 11:21:21 AM** I-OX

Reviewed By: IO 01/08/20

Chain of Custody

1. Is Chain of Custody sufficiently complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

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

Adjusted? _____

Checked by: YG 1/8/20

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good	Not Present			

Chain-of-Custody Record

Client: SMA- Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 5 day turn

Project Name: Madera 19 Fed 5H

Project #:

Project Manager: Ashley Maxwell

Sampler: LAA

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 0.8+0.1=0.9 (°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 Name	Container Type and #	Preservative Type	HEAL No. 2001228	BTEX/ MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
1/6/20	1212	Soil	BH1	4 oz		-001	X	X					X			
	1215		BH2			-002	X	X					X			
	1230		BH3			-003	X	X					X			
	1250		BH4			-004	X	X					X			
	1305		SW1			-005	X	X					X			
	1310		SW2			-006	X	X					X			
	1318		SW3			-007	X	X					X			
	1323		SW4			-008	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					1/7/20	1500
Date: 1/7/20	Time: 1900	Relinquished by:	Received by:	Via: courier	Date 1/8/20	Time 1030

Remarks: Direct Bill: Marathon Oil

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.