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

November 23, 2019

#5E27950 BG14

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

SUBJECT: Remediation Closure Report for the Green Frog Cafe Federal #001H (1RP-5511), Lea County, New Mexico

To Whom it May Concern:

On behalf of Marathon Oil Permian LLC, Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to oil and gas production activities at the Green Frog Cafe Federal #001H site. The site is in Unit B, Section 18, Township 20S, Range 33E, Lea County, New Mexico, on federal land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1 summarizes release information and Closure Criteria.

Table 1: Release Information and Closure Criteria			
Name	Green Frog Cafe Federal #001H	Company	Marathon Oil Permian LLC
API Number	30-025-40828	Location	32.5781898 -103.7015533
Incident Number	1RP-5511		
Estimated Date of Release	5/6/2019	Date Reported to NMOCD	5/6/2019
Land Owner	Federal	Reported To	NMOCD & BLM
Source of Release	Equipment failure; flare		
Released Volume	0.97 bbls out of flare	Released Material	Crude oil
Recovered Volume	--	Net Release	0.97 bbls
NMOCD Closure Criteria	>100 feet to groundwater		
SMA Response Dates	5/7/2019, 6/13/2019		

1.0 Background

On May 6, 2019, a release was discovered at the Green Frog Cafe Federal #001H site due to equipment failure. The heater treater shut in the well, the recycle pump failed and fluids continued to fill the scrubber, resulting in 0.97 bbls of crude oil being released out of the flare, igniting a small fire around the flare line. Initial response activities were conducted by the operator and included; extinguishing the fire, source elimination, and site security. Figures 1 and 2 illustrate the vicinity and site location. Figure 3 illustrates the release location. The C-141 forms are included in Appendix A.

2.0 Site Information and Closure Criteria

The Green Frog Cafe Federal #001H is located approximately 30 miles east of Carlsbad, New Mexico on Federal (BLM) land at an elevation of approximately 3,528 feet above mean sea level (amsl).

Depth to groundwater in the area is estimated to be 129 feet below grade surface (bgs). There is one (1) known water source within ½-mile of the location, according to the USGS National Water Information System and the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 1/18/2019)(Appendix B). The nearest significant watercourse is the Laguna Gatuna Salt Playa, located approximately 433 feet to the east. Figure 2 illustrates the site with 100, 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 a groundwater depth of greater than 100 feet bgs. The site has been restored to meet the standards of Table I of 19.15.29.12 NMAC. In addition to meeting the Closure Criteria, the top four (4) feet of impacted areas off the well pad meet the Reclamation requirement of 19.15.29.13(D)(1).

Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Release Characterization and Remediation Activities

On May 7, 2019, SMA personnel arrived on site in response to the release associated with the Green Frog Cafe Federal #001H. SMA performed site delineation activities by collecting soil samples around the release site and throughout the visibly stained area.

A total of (4) four sample locations (L1-L4) were investigated using a hand-auger, to depths up to 6 inches bgs. A total of four samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

As summarized in Table 3, results indicated that an area approximately 40 feet by 10 feet has been impacted around the flare.

On June 13, 2019, SMA returned to the site to guide the excavation of contaminated soil. SMA guided the excavation activities by collecting soil samples for field screening. Samples were screened for hydrocarbon impacts using a calibrated MiniRAE 3000 photoionization detector (PID) equipped with a 10.6 eV lamp. The walls and base were excavated until field screening results indicated that the NMOCD Closure Criteria would be met. NMOCD was notified on June 11, 2019 that closure samples were expected to be collected in two (2) business days.

On June 13, 2019, SMA conducted confirmation sampling of the walls and base of the excavation, which measured approximately 400 square feet. The impacted area was excavated to a depth of 0.5 feet bgs.

Confirmation samples were composed of five-point composites of the base (CS1-CS4) and walls (CSW1-CSW4).

A total of eight (8) confirmation samples were collected for laboratory analysis for total chloride using EPA Method 300.0; BTEX using EPA Method 8260B; and MRO, DRO, and GRO by EPA Method 8015D. 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).

Figure 3 shows the extent of the excavation and sample locations. All 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 an NMOCD permitted disposal facility.

4.0 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 Heather Patterson at 575-200-5343 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

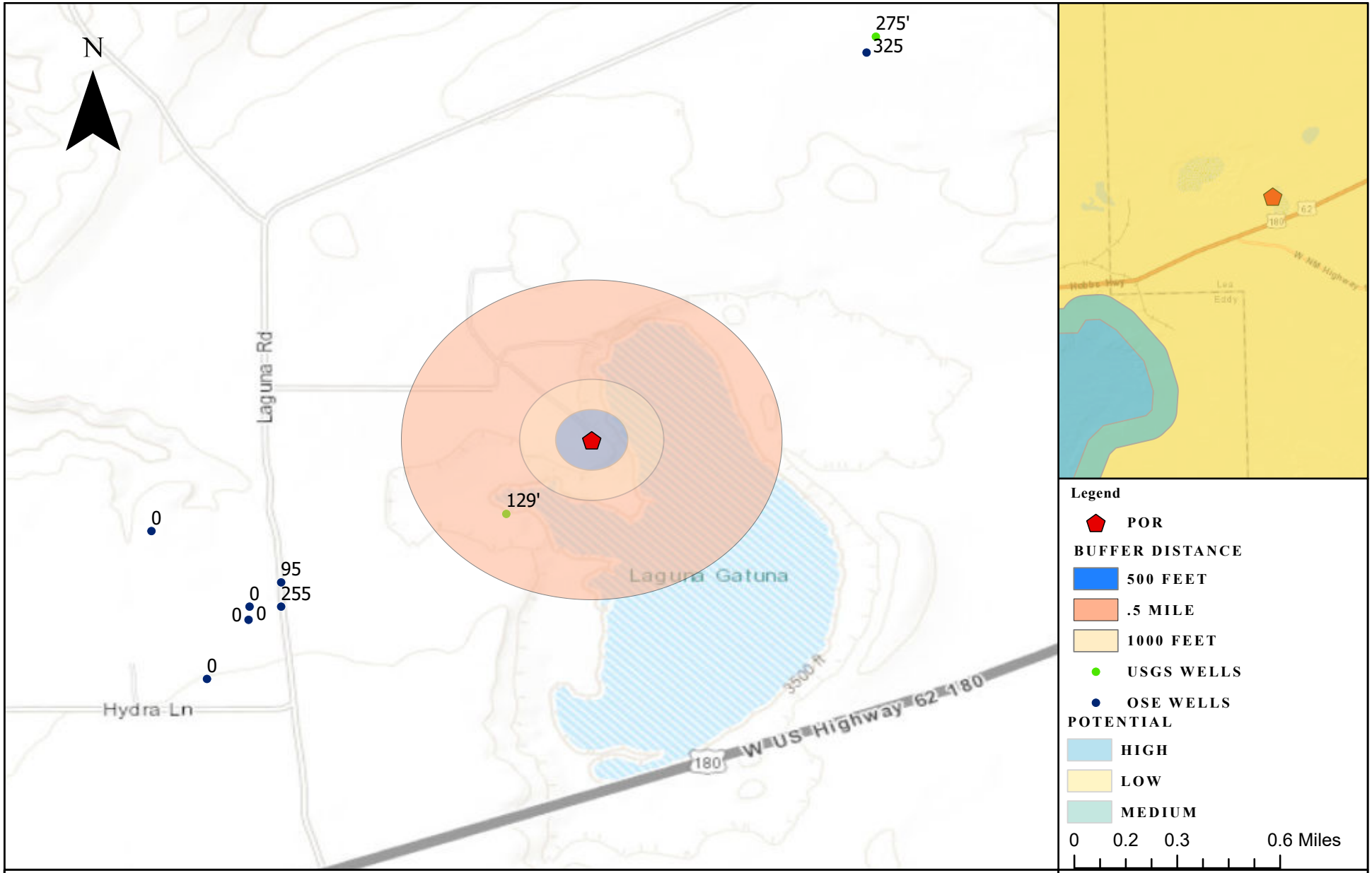
Tables:

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

Appendices:

Appendix A: C141 Forms
Appendix B: NMOSE Wells Report
Appendix C: Photo Documentation and Field Notes
Appendix D: Laboratory Analytical Reports

FIGURES



Regional Vicinity & Wellhead Protection Map
Green Frog Cafe Federal #001H - Marathon Oil
UL: B S: 18 T: 20S R: 33E Lea County, New Mexico

Figure 1

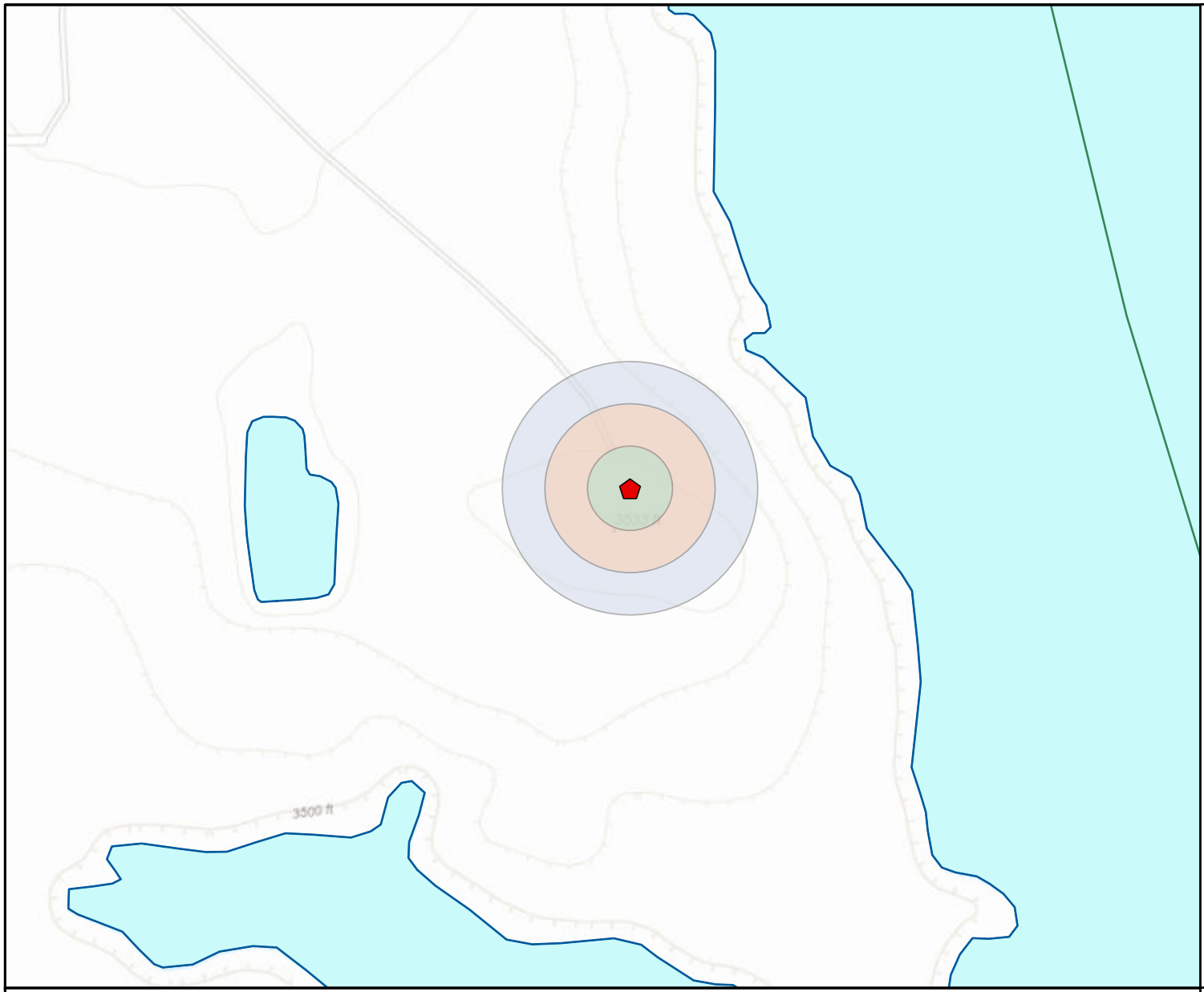
\\192.168.22.10\Projects\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

Date Saved: 11/20/2019

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

Drawn LAA
Date 11/22/2019
Checked
Approved

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



Legend

- Point of Release

Buffer Distance

- 100 Feet
- 200 Feet
- 300 Feet
- Streams Canals
- Rivers
- Flowlines_SENM
- NM Wetlands
- Lakes_Playas
- FEMA_Flood_Zones_2011

N

0 112.5 225 450 US Feet

Surface Water Protection Map
Green Frog Cafe Federal #001H - Marathon Oil
UL: B S: 18 T: 20S R: 33E, Lea County, New Mexico

Figure 2

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Date 11/22/2019
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Approved

SMA

201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689-7040
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LEGEND

- Sample Locations
- Closure Samples
- Pipeline
- 0.5' Excavation

N

0 19 38 76

Feet

Site and Sample Location Map
Green Frog Cafe Federal #001H - Marathon Oil LLC
UL: B S: 18 T: 20S R: 33E Lea County, New Mexico

Figure 3

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Date Saved: 11/20/2019

Revisions

By:_____ Date:_____ Descr:_____

By:_____ Date:_____ Descr:_____

Drawn LAA
Date 11/23/2019
Checked
Approved

SMA

201 South Halagueno Street
Carlsbad, New Mexico 88220
(575) 689-7040
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TABLES

Table 2:
NMOCD Closure Criteria

Marathon Oil Permian LLC
Green Frog Cafe Federal #001H (1RP-5511)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	145-163	NMOSE & USGS (Appendix B)
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	433	Laguna Gatuna to the east
Hortizontal Distance to Nearest Significant Watercourse (ft)	433	Laguna Gatuna to the east

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'	x	20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	no	600	100		50	10
<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						
<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; low karst					
within a 100-year floodplain?	no					

Table 3:
Summary of Sample Results

Marathon Oil Permian LLC
Green Frog Cafe Federal #001H (1RP-5511)

Sample ID	Sample Date	Depth (feet bgs)	Action	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				50	10	1000			2,500	20,000
Initial Sampling										
L1	5/7/2019	Surface	excavate	0.507	<0.024	**7.8**	**2,600**	**1,400**	**4,007.8**	490
L2	5/7/2019	Surface	excavate	0.14	<0.025	<5.0	920	810	1,730	82
L3	5/7/2019	Surface	excavate	1.4	<0.025	**20**	**1,100**	790	1,910	530
L4	5/7/2019	Surface	excavate	0.13	<0.025	<4.9	340	270	610	93
Confirmation Sampling										
CS1	6/13/2019	0.5	in-situ	<0.221	<0.025	<4.9	<9.8	<49	<63.7	1400
CS2	6/13/2019	0.5	in-situ	<0.222	<0.025	<4.9	52	58	110	62
CS3	6/13/2019	0.5	in-situ	<0.221	<0.025	<4.9	<9.5	<47	<61.4	<60
CS4	6/13/2019	0.5	in-situ	<0.220	<0.024	<4.9	150	120	270	<60
CSW1	6/13/2019	0.5	in-situ	<0.217	<0.024	<4.8	37	72	<113.8	90
CSW2	6/13/2019	0.5	in-situ	<0.225	<0.025	<5.0	<9.8	<49	<63.8	1400
CSW3	6/13/2019	0.5	in-situ	<0.219	<0.024	<4.9	15	<49	15	160
CSW4	6/13/2019	0.5	in-situ	<0.217	<0.025	<4.8	51	<49	51	660
BG-1	6/13/2019	0.5	in-situ	-	-	-	-	-	-	<60
	6/13/2019	2	in-situ	-	-	-	-	-	-	130
	6/13/2019	4	in-situ	-	-	-	-	-	-	380
BG-2	6/13/2019	0.5	in-situ	-	-	-	-	-	-	<60
	6/13/2019	2	in-situ	-	-	-	-	-	-	1200
	6/13/2019	4	in-situ	-	-	-	-	-	-	390

"--" = Not Analyzed

APPENDIX A
C141 FORMS

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	NAB1915028224
District RP	1RP-5511
Facility ID	
Application ID	pAB1915027889

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Callie Karrigan	Contact Telephone 575-297-0956
Contact email cnkarrigan@marathonoil.com	Incident # *(assigned by OCD)*
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 8220	

Location of Release Source

Latitude 32.5781898 Longitude -103.7015533
(NAD 83 in decimal degrees to 5 decimal places)

Site Name GREEN FROG CAFE FEDERAL #001H	Site Type Oil and gas drilling facility
Date Release Discovered 5/6/19	API# *(if applicable)* 30-025-40828

Unit Letter	Section	Township	Range	County
B	18	20S	33E	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) 0.97 bbls	Volume Recovered (bbls) 0
☐ 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)	Volume/Weight Recovered (provide units)

Cause of Release

This morning at approximately 10:00 am, the heater treater hi-leveled and shut the well in. The recycle pump did not turn off and fluids continued to fill the gas scrubber and hp flare knock out and sent fluid to the flare. Approximately 0.97 barrels of oil was released out the flare, igniting a small fire around the flare pit.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915028224
District RP	1RP-5511
Facility ID	
Application ID	pAB1915027889

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? Release resulted in a small fire around the perimeter of the flare pit
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? District 1 email, Jim Amos and Jim Griswold via email on 5/6/19 at 7:49 pm	

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:
There were no standing fluids associated with this incident.

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: Callie Karrigan Title: Environmental Professional

Signature: Callie Karrigan Date: 5/8/19

email: cnkarrigan@marathonoil.com Telephone: 575-297-0956

OCD Only

Received by: _____ Date: _____

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915028224
District RP	1RP-5511
Facility ID	
Application ID	pAB1915027889

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?	129 (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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915028224
District RP	1RP-5511
Facility ID	
Application ID	pAB1915027889

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: 7-16-19

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

OCD Only

Received by: Cristina Eads Date: 01/14/2020

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915028224
District RP	1RP-5511
Facility ID	
Application ID	pAB1915027889

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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915028224
District RP	1RP-5511
Facility ID	
Application ID	pAB1915027889

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: Isaac Castro Title: Environmental Professional

Signature: Isaac Castro Date: 7-16-19

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

OCD Only

Received by: Cristina Eads Date: 01/14/2020

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: Cristina Eads Date:

Printed Name: Cristina Eads Title: 01/14/2020

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 Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 00317	CP	LE	3	4	3	05	20S	33E	623054	3607235*	1861	680	325	355
L 07023	L	LE	2	3	3	32	19S	33E	622840	3609047*	2789	262	185	77

Average Depth to Water: **255 feet**

Minimum Depth: **185 feet**

Maximum Depth: **325 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 621256.7 **Northing (Y):** 3606750.2 **Radius:** 3000

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

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 323429103421601

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 323429103421601 20S.33E.18.12322

Lea County, New Mexico
Latitude 32°34'29", Longitude 103°42'16" NAD27
Land-surface elevation 3,503 feet above NAVD88
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source o measure
1968-03-19		D	249.88			2		U		
1972-09-25		D	245.58			2		U		
1976-01-13		D	129.54			2		U		
1977-01-07		D	129.46			2		U		
1989-01-05		D	130.07			2		U		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Questions about sites/data?
Feedback on this web site

Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

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U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2019-07-25 13:00:33 EDT
1.93 0.62 nadww01

APPENDIX C
PHOTO DOCUMENTATION & FIELD NOTES

Photo Log

Photo Taken June 13, 2019

Facing northwest

32.57820, -103.70104

Field Screening

Location Name: Black Mirage

Date: 6-13-19

Sample Name:	Collection Time:	EC (mS)	Temp (°C)	PID Reading /PF	Soil Color	Primary Soil Type	Moisture Level	Other Remarks/Notes:
L1-1	846	1.79	23.8	1.5	Light Dark; ~~Tan~~ Brown; Gray Olive; Yellow Red	Gravel Rock; ~~Sand~~ Silt; Clay	~~Dry~~ Moist Wet	
L4-1	910	0.25	23.8	1.2	Light Dark; Tan ~~Brown~~; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	~~Dry~~ Moist Wet	
BG1-2	1003	8.44	24.9	4.1	Light Dark; Tan ~~Brown~~; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	~~Dry~~ Moist Wet	
BG1-0.5	1002	6.11	25.1	4.8	Light Dark; ~~Tan~~ ~~Brown~~; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	~~Dry~~ Moist Wet	
BG1-4	1007	1.36	25.0	1.9	Light Dark; ~~Tan~~ ~~Brown~~; ~~Gray~~ Olive; Yellow Red	Gravel Rock; ~~Sand~~ Silt; Clay	~~Dry~~ Moist Wet	Caliche
BG2-0.5	1050	0.12	27.7	1.3	Light Dark; Tan ~~Brown~~; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	~~Dry~~ Moist Wet	
BG2-2	1051	1.49	27.5	0.4	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
BG2-4	1054	1.72	27.5	0.7	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CS4-0.5	1202	—	—	0.8	Light Dark; Tan ~~Brown~~; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	~~Dry~~ Moist Wet	

Field Screening

Location Name: Black Horse

Date: 6.13.19

Sample Name:	Collection Time:	EC (mS)	Temp (°C)	PID Reading /PF	Soil Color	Primary Soil Type	Moisture Level	Other Remarks/Notes:
CSW1	1208	–	–	0.9	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CS1	1215	–	–	1.6	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CSW2	1221	–	–	2.8	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
SP1	1225	–	–	0.7	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CS2	1256	–	–	21.3	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CS3	1257	–	–	18.5	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CSW3	1259	–	–	12.1	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CSW4	1302			0.3	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	
CSW5	1304			1.9	Light Dark; Tan Brown; Gray Olive; Yellow Red	Gravel Rock; Sand Silt; Clay	Dry Moist Wet	

SMA Field Screening

Location Name:

Date:

Sample Name:	*Collection Time:*	*EC (mS)*	*Temp (°C)*	*PID Reading /PF*	*Soil Color*	*Primary Soil Type*	*Moisture Level*	*Other Remarks/Notes:*
CSW6	1328	–	–	7.3	Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
CSW7	1320	–	–	14.2	Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
CSW8	1323	–	–	24.1	Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
CSW9	1339	–	–	21.5	Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
SP2	1413	–	–	31	Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	

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

May 16, 2019

Heather Patterson

Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-8801
FAX:

RE: Black Horse OrderNo.: 1905534

Dear Heather Patterson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 5/10/2019 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 **1905534**
Date Reported: **5/16/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-0.5
Project: Black Horse
Collection Date: 5/7/2019 12:03:00 PM
Lab ID: 1905534-001 **Matrix:** SOIL **Received Date:** 5/10/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	490	60		mg/Kg	20	5/14/2019 1:07:17 PM	44902
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	2600	99		mg/Kg	10	5/14/2019 9:24:59 AM	44879
Motor Oil Range Organics (MRO)	1400	500		mg/Kg	10	5/14/2019 9:24:59 AM	44879
Surr: DNOP	0	70-130	S	%Rec	10	5/14/2019 9:24:59 AM	44879
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	7.8	4.8		mg/Kg	1	5/14/2019 2:07:11 AM	44846
Surr: BFB	142	73.8-119	S	%Rec	1	5/14/2019 2:07:11 AM	44846
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	5/14/2019 2:07:11 AM	44846
Toluene	ND	0.048		mg/Kg	1	5/14/2019 2:07:11 AM	44846
Ethylbenzene	0.097	0.048		mg/Kg	1	5/14/2019 2:07:11 AM	44846
Xylenes, Total	0.41	0.097		mg/Kg	1	5/14/2019 2:07:11 AM	44846
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	5/14/2019 2:07:11 AM	44846

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 **1905534**
Date Reported: **5/16/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-0.5
Project: Black Horse
Collection Date: 5/7/2019 12:21:00 PM
Lab ID: 1905534-002 **Matrix:** SOIL **Received Date:** 5/10/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	82	60		mg/Kg	20	5/14/2019 1:19:41 PM	44902
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	920	97		mg/Kg	10	5/14/2019 10:11:48 AM	44879
Motor Oil Range Organics (MRO)	810	480		mg/Kg	10	5/14/2019 10:11:48 AM	44879
Surr: DNOP	0	70-130	S	%Rec	10	5/14/2019 10:11:48 AM	44879
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/14/2019 2:29:58 AM	44846
Surr: BFB	102	73.8-119		%Rec	1	5/14/2019 2:29:58 AM	44846
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/14/2019 2:29:58 AM	44846
Toluene	ND	0.050		mg/Kg	1	5/14/2019 2:29:58 AM	44846
Ethylbenzene	ND	0.050		mg/Kg	1	5/14/2019 2:29:58 AM	44846
Xylenes, Total	0.14	0.10		mg/Kg	1	5/14/2019 2:29:58 AM	44846
Surr: 4-Bromofluorobenzene	95.1	80-120		%Rec	1	5/14/2019 2:29:58 AM	44846

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 **1905534**
Date Reported: **5/16/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-0.5
Project: Black Horse
Collection Date: 5/7/2019 12:24:00 PM
Lab ID: 1905534-003 **Matrix:** SOIL **Received Date:** 5/10/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	530	60		mg/Kg	20	5/14/2019 1:32:06 PM	44902
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1100	97		mg/Kg	10	5/14/2019 10:56:06 AM	44879
Motor Oil Range Organics (MRO)	790	480		mg/Kg	10	5/14/2019 10:56:06 AM	44879
Surr: DNOP	0	70-130	S	%Rec	10	5/14/2019 10:56:06 AM	44879
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	20	4.9		mg/Kg	1	5/14/2019 2:52:40 AM	44846
Surr: BFB	308	73.8-119	S	%Rec	1	5/14/2019 2:52:40 AM	44846
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/14/2019 2:52:40 AM	44846
Toluene	ND	0.049		mg/Kg	1	5/14/2019 2:52:40 AM	44846
Ethylbenzene	0.30	0.049		mg/Kg	1	5/14/2019 2:52:40 AM	44846
Xylenes, Total	1.1	0.099		mg/Kg	1	5/14/2019 2:52:40 AM	44846
Surr: 4-Bromofluorobenzene	125	80-120	S	%Rec	1	5/14/2019 2:52:40 AM	44846

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 **1905534**
Date Reported: **5/16/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-0.5
Project: Black Horse
Collection Date: 5/7/2019 12:38:00 PM
Lab ID: 1905534-004 **Matrix:** SOIL **Received Date:** 5/10/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	93	60		mg/Kg	20	5/14/2019 1:44:31 PM	44902
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	340	9.9		mg/Kg	1	5/14/2019 10:46:52 PM	44879
Motor Oil Range Organics (MRO)	270	49		mg/Kg	1	5/14/2019 10:46:52 PM	44879
Surr: DNOP	94.6	70-130		%Rec	1	5/14/2019 10:46:52 PM	44879
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/14/2019 3:15:19 AM	44846
Surr: BFB	101	73.8-119		%Rec	1	5/14/2019 3:15:19 AM	44846
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/14/2019 3:15:19 AM	44846
Toluene	ND	0.049		mg/Kg	1	5/14/2019 3:15:19 AM	44846
Ethylbenzene	ND	0.049		mg/Kg	1	5/14/2019 3:15:19 AM	44846
Xylenes, Total	0.13	0.099		mg/Kg	1	5/14/2019 3:15:19 AM	44846
Surr: 4-Bromofluorobenzene	94.9	80-120		%Rec	1	5/14/2019 3:15:19 AM	44846

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#: **1905534**

16-May-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **MB-44902**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **44902**	RunNo: **59859**							
Prep Date: **5/14/2019**	Analysis Date: **5/14/2019**	SeqNo: **2019990**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44902**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **44902**	RunNo: **59859**							
Prep Date: **5/14/2019**	Analysis Date: **5/14/2019**	SeqNo: **2019991**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	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#: **1905534**

16-May-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **LCS-44879**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44879**	RunNo: **59853**
Prep Date: **5/13/2019**	Analysis Date: **5/14/2019**	SeqNo: **2018947** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.9	63.9	124			
Surr: DNOP	4.6		5.000		91.9	70	130			

Sample ID: **MB-44879**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44879**	RunNo: **59853**
Prep Date: **5/13/2019**	Analysis Date: **5/14/2019**	SeqNo: **2018948** 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	11		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **1905534**

16-May-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **MB-44846**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44846**	RunNo: **59831**
Prep Date: **5/10/2019**	Analysis Date: **5/13/2019**	SeqNo: **2018468** 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	930		1000		92.8	73.8	119			

Sample ID: **LCS-44846**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44846**	RunNo: **59831**
Prep Date: **5/10/2019**	Analysis Date: **5/13/2019**	SeqNo: **2018469** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.8	80.1	123			
Surr: BFB	1100		1000		107	73.8	119			

Sample ID: **MB-44827**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44827**	RunNo: **59832**
Prep Date: **5/9/2019**	Analysis Date: **5/13/2019**	SeqNo: **2018531** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	840		1000		83.9	73.8	119			

Sample ID: **LCS-44827**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44827**	RunNo: **59832**
Prep Date: **5/9/2019**	Analysis Date: **5/13/2019**	SeqNo: **2018532** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	980		1000		97.8	73.8	119			

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#: **1905534**

16-May-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **MB-44846** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **44846** RunNo: **59831**

Prep Date: **5/10/2019** Analysis Date: **5/13/2019** SeqNo: **2018511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		90.0	80	120			

Sample ID: **LCS-44846** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **44846** RunNo: **59831**

Prep Date: **5/10/2019** Analysis Date: **5/13/2019** SeqNo: **2018512** 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	89.0	80	120			
Toluene	0.92	0.050	1.000	0	92.1	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.0	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.1	80	120			

Sample ID: **MB-44827** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **44827** RunNo: **59832**

Prep Date: **5/9/2019** Analysis Date: **5/13/2019** SeqNo: **2018567** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.87		1.000		86.7	80	120			

Sample ID: **LCS-44827** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **44827** RunNo: **59832**

Prep Date: **5/9/2019** Analysis Date: **5/13/2019** SeqNo: **2018568** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		97.7	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: 1905534 RcptNo: 1

Received By: Erin Melendrez 5/10/2019 8:50:00 AM

Completed By: Yazmine Garduno 5/10/2019 10:15:40 AM

Reviewed By: ENM 5/10/19
LB JJC 5-10-19

Chain of Custody

1. Is Chain of Custody 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. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
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: JJC 5-10-19

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	3.8	Good	Yes			

Chain-of-Custody Record

Client: SMT

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: 5 day turn
☒ Standard ☐ Rush

Project Name: Black Horse

Project #:

Project Manager: Heather Patterson

Sampler: HMP

On Ice: ☒ Yes ☐ No

# of Coolers: 1 (CF=-0.1)

Cooler Temp(including CF): 3.8°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. 1905534	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)
5/7/19	12:03	Soil	L1-0.5	4oz		-001	X	X					X			
	12:21		L2-0.5			-002	X	X					X			
	12:24		L3-0.5			-003	X	X					X			
	12:38		L4-0.5			-004	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-8-19	8:00				5/8/19	1900
5/8/19	1900			Courier	5/10/19	0850

Remarks:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

June 24, 2019

Heather Patterson

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

RE: Black Horse OrderNo.: 1906850

Dear Heather Patterson:

Hall Environmental Analysis Laboratory received 14 sample(s) on 6/15/2019 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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG1-0.5
Project: Black Horse
Collection Date: 6/13/2019 10:02:00 AM
Lab ID: 1906850-001 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/21/2019 4:54:30 PM	45732

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG1-2
Project: Black Horse
Collection Date: 6/13/2019 10:03:00 AM
Lab ID: 1906850-002 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	130	60		mg/Kg	20	6/21/2019 5:06:54 PM	45732

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG1-4
Project: Black Horse
Collection Date: 6/13/2019 10:07:00 AM
Lab ID: 1906850-003 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	380	60		mg/Kg	20	6/21/2019 4:42:37 PM	45735

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG2-0.5
Project: Black Horse
Collection Date: 6/13/2019 10:50:00 AM
Lab ID: 1906850-004 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/21/2019 4:55:02 PM	45735

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG2-2
Project: Black Horse
Collection Date: 6/13/2019 10:52:00 AM
Lab ID: 1906850-005 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1200	59		mg/Kg	20	6/21/2019 5:32:15 PM	45735

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BG2-4
Project: Black Horse
Collection Date: 6/13/2019 10:54:00 AM
Lab ID: 1906850-006 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	390	60		mg/Kg	20	6/21/2019 5:44:40 PM	45735

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS1
Project: Black Horse
Collection Date: 6/13/2019 12:15:00 PM
Lab ID: 1906850-007 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1400	60		mg/Kg	20	6/21/2019 6:08:57 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2019 5:46:11 PM	45621
Surr: BFB	109	70-130		%Rec	1	6/18/2019 5:46:11 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/18/2019 8:15:03 PM	45634
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/18/2019 8:15:03 PM	45634
Surr: DNOP	117	70-130		%Rec	1	6/18/2019 8:15:03 PM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	6/18/2019 5:46:11 PM	45621
Toluene	ND	0.049		mg/Kg	1	6/18/2019 5:46:11 PM	45621
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2019 5:46:11 PM	45621
Xylenes, Total	ND	0.098		mg/Kg	1	6/18/2019 5:46:11 PM	45621
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%Rec	1	6/18/2019 5:46:11 PM	45621
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	6/18/2019 5:46:11 PM	45621
Surr: Dibromofluoromethane	115	70-130		%Rec	1	6/18/2019 5:46:11 PM	45621
Surr: Toluene-d8	94.8	70-130		%Rec	1	6/18/2019 5:46:11 PM	45621

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS2
Project: Black Horse
Collection Date: 6/13/2019 12:56:00 PM
Lab ID: 1906850-008 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	62	60		mg/Kg	20	6/21/2019 6:21:22 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2019 6:14:54 PM	45621
Surr: BFB	110	70-130		%Rec	1	6/18/2019 6:14:54 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	52	9.9		mg/Kg	1	6/18/2019 10:45:28 AM	45634
Motor Oil Range Organics (MRO)	58	50		mg/Kg	1	6/18/2019 10:45:28 AM	45634
Surr: DNOP	139	70-130	S	%Rec	1	6/18/2019 10:45:28 AM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	6/18/2019 6:14:54 PM	45621
Toluene	ND	0.049		mg/Kg	1	6/18/2019 6:14:54 PM	45621
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2019 6:14:54 PM	45621
Xylenes, Total	ND	0.099		mg/Kg	1	6/18/2019 6:14:54 PM	45621
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%Rec	1	6/18/2019 6:14:54 PM	45621
Surr: 4-Bromofluorobenzene	98.7	70-130		%Rec	1	6/18/2019 6:14:54 PM	45621
Surr: Dibromofluoromethane	116	70-130		%Rec	1	6/18/2019 6:14:54 PM	45621
Surr: Toluene-d8	93.4	70-130		%Rec	1	6/18/2019 6:14:54 PM	45621

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS3
Project: Black Horse
Collection Date: 6/13/2019 12:57:00 PM
Lab ID: 1906850-009 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/21/2019 6:33:46 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2019 6:43:31 PM	45621
Surr: BFB	109	70-130		%Rec	1	6/18/2019 6:43:31 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/18/2019 8:39:30 PM	45634
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/18/2019 8:39:30 PM	45634
Surr: DNOP	126	70-130		%Rec	1	6/18/2019 8:39:30 PM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	6/18/2019 6:43:31 PM	45621
Toluene	ND	0.049		mg/Kg	1	6/18/2019 6:43:31 PM	45621
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2019 6:43:31 PM	45621
Xylenes, Total	ND	0.098		mg/Kg	1	6/18/2019 6:43:31 PM	45621
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%Rec	1	6/18/2019 6:43:31 PM	45621
Surr: 4-Bromofluorobenzene	97.8	70-130		%Rec	1	6/18/2019 6:43:31 PM	45621
Surr: Dibromofluoromethane	115	70-130		%Rec	1	6/18/2019 6:43:31 PM	45621
Surr: Toluene-d8	94.5	70-130		%Rec	1	6/18/2019 6:43:31 PM	45621

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS4
Project: Black Horse
Collection Date: 6/13/2019 12:02:00 PM
Lab ID: 1906850-010 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	6/21/2019 7:10:59 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2019 7:12:06 PM	45621
Surr: BFB	108	70-130		%Rec	1	6/18/2019 7:12:06 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	150	9.4		mg/Kg	1	6/18/2019 11:50:05 AM	45634
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	6/18/2019 11:50:05 AM	45634
Surr: DNOP	122	70-130		%Rec	1	6/18/2019 11:50:05 AM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	6/18/2019 7:12:06 PM	45621
Toluene	ND	0.049		mg/Kg	1	6/18/2019 7:12:06 PM	45621
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2019 7:12:06 PM	45621
Xylenes, Total	ND	0.098		mg/Kg	1	6/18/2019 7:12:06 PM	45621
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%Rec	1	6/18/2019 7:12:06 PM	45621
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	6/18/2019 7:12:06 PM	45621
Surr: Dibromofluoromethane	114	70-130		%Rec	1	6/18/2019 7:12:06 PM	45621
Surr: Toluene-d8	92.2	70-130		%Rec	1	6/18/2019 7:12:06 PM	45621

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW1
Project: Black Horse
Collection Date: 6/13/2019 12:08:00 PM
Lab ID: 1906850-011 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	90	60		mg/Kg	20	6/21/2019 7:23:24 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/18/2019 7:40:39 PM	45621
Surr: BFB	111	70-130		%Rec	1	6/18/2019 7:40:39 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	37	9.7		mg/Kg	1	6/18/2019 12:38:17 PM	45634
Motor Oil Range Organics (MRO)	72	49		mg/Kg	1	6/18/2019 12:38:17 PM	45634
Surr: DNOP	110	70-130		%Rec	1	6/18/2019 12:38:17 PM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	6/18/2019 7:40:39 PM	45621
Toluene	ND	0.048		mg/Kg	1	6/18/2019 7:40:39 PM	45621
Ethylbenzene	ND	0.048		mg/Kg	1	6/18/2019 7:40:39 PM	45621
Xylenes, Total	ND	0.097		mg/Kg	1	6/18/2019 7:40:39 PM	45621
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%Rec	1	6/18/2019 7:40:39 PM	45621
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	6/18/2019 7:40:39 PM	45621
Surr: Dibromofluoromethane	114	70-130		%Rec	1	6/18/2019 7:40:39 PM	45621
Surr: Toluene-d8	93.6	70-130		%Rec	1	6/18/2019 7:40:39 PM	45621

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW2
Project: Black Horse
Collection Date: 6/13/2019 12:21:00 PM
Lab ID: 1906850-012 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1400	60		mg/Kg	20	6/21/2019 7:35:49 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/18/2019 8:09:16 PM	45621
Surr: BFB	112	70-130		%Rec	1	6/18/2019 8:09:16 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/18/2019 9:03:58 PM	45634
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/18/2019 9:03:58 PM	45634
Surr: DNOP	167	70-130	S	%Rec	1	6/18/2019 9:03:58 PM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	6/18/2019 8:09:16 PM	45621
Toluene	ND	0.050		mg/Kg	1	6/18/2019 8:09:16 PM	45621
Ethylbenzene	ND	0.050		mg/Kg	1	6/18/2019 8:09:16 PM	45621
Xylenes, Total	ND	0.10		mg/Kg	1	6/18/2019 8:09:16 PM	45621
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	6/18/2019 8:09:16 PM	45621
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	6/18/2019 8:09:16 PM	45621
Surr: Dibromofluoromethane	117	70-130		%Rec	1	6/18/2019 8:09:16 PM	45621
Surr: Toluene-d8	92.9	70-130		%Rec	1	6/18/2019 8:09:16 PM	45621

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW3
Project: Black Horse
Collection Date: 6/13/2019 1:20:00 PM
Lab ID: 1906850-013 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	160	60		mg/Kg	20	6/21/2019 7:48:13 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2019 8:37:46 PM	45621
Surr: BFB	109	70-130		%Rec	1	6/18/2019 8:37:46 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	15	9.8		mg/Kg	1	6/18/2019 1:19:49 PM	45634
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/18/2019 1:19:49 PM	45634
Surr: DNOP	105	70-130		%Rec	1	6/18/2019 1:19:49 PM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	6/18/2019 8:37:46 PM	45621
Toluene	ND	0.049		mg/Kg	1	6/18/2019 8:37:46 PM	45621
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2019 8:37:46 PM	45621
Xylenes, Total	ND	0.097		mg/Kg	1	6/18/2019 8:37:46 PM	45621
Surr: 1,2-Dichloroethane-d4	98.3	70-130		%Rec	1	6/18/2019 8:37:46 PM	45621
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	6/18/2019 8:37:46 PM	45621
Surr: Dibromofluoromethane	116	70-130		%Rec	1	6/18/2019 8:37:46 PM	45621
Surr: Toluene-d8	92.3	70-130		%Rec	1	6/18/2019 8:37:46 PM	45621

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 **1906850**
Date Reported: **6/24/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW4
Project: Black Horse
Collection Date: 6/13/2019 1:39:00 PM
Lab ID: 1906850-014 **Matrix:** SOIL **Received Date:** 6/15/2019 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	660	60		mg/Kg	20	6/21/2019 8:00:37 PM	45745
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/18/2019 9:06:13 PM	45621
Surr: BFB	110	70-130		%Rec	1	6/18/2019 9:06:13 PM	45621
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	51	9.8		mg/Kg	1	6/18/2019 1:43:52 PM	45634
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/18/2019 1:43:52 PM	45634
Surr: DNOP	151	70-130	S	%Rec	1	6/18/2019 1:43:52 PM	45634
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	6/18/2019 9:06:13 PM	45621
Toluene	ND	0.048		mg/Kg	1	6/18/2019 9:06:13 PM	45621
Ethylbenzene	ND	0.048		mg/Kg	1	6/18/2019 9:06:13 PM	45621
Xylenes, Total	ND	0.097		mg/Kg	1	6/18/2019 9:06:13 PM	45621
Surr: 1,2-Dichloroethane-d4	97.9	70-130		%Rec	1	6/18/2019 9:06:13 PM	45621
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	6/18/2019 9:06:13 PM	45621
Surr: Dibromofluoromethane	117	70-130		%Rec	1	6/18/2019 9:06:13 PM	45621
Surr: Toluene-d8	93.5	70-130		%Rec	1	6/18/2019 9:06:13 PM	45621

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#: **1906850**

24-Jun-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **MB-45735** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **45735** RunNo: **60840**
Prep Date: **6/21/2019** Analysis Date: **6/21/2019** SeqNo: **2059612** Units: **mg/Kg**

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

Sample ID: **MB-45732** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **45732** RunNo: **60839**
Prep Date: **6/21/2019** Analysis Date: **6/21/2019** SeqNo: **2059650** Units: **mg/Kg**

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

Sample ID: **LCS-45732** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **45732** RunNo: **60839**
Prep Date: **6/21/2019** Analysis Date: **6/21/2019** SeqNo: **2059651** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.3	90	110			

Sample ID: **MB-45745** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **45745** RunNo: **60839**
Prep Date: **6/21/2019** Analysis Date: **6/21/2019** SeqNo: **2059680** Units: **mg/Kg**

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

Sample ID: **LCS-45745** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **45745** RunNo: **60839**
Prep Date: **6/21/2019** Analysis Date: **6/21/2019** SeqNo: **2059681** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906850**

24-Jun-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **MB-45634**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45634**	RunNo: **60743**
Prep Date: **6/17/2019**	Analysis Date: **6/18/2019**	SeqNo: **2055584** 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	15		10.00		148	70	130			S

Sample ID: **LCS-45634**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45634**	RunNo: **60743**
Prep Date: **6/17/2019**	Analysis Date: **6/18/2019**	SeqNo: **2055586** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	10	50.00	0	123	63.9	124			
Surr: DNOP	6.4		5.000		128	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **1906850**

24-Jun-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **lcs-45621**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **45621**	RunNo: **60734**
Prep Date: **6/17/2019**	Analysis Date: **6/18/2019**	SeqNo: **2055220** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	70	130			
Toluene	0.98	0.050	1.000	0	98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.3	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		115	70	130			
Surr: Toluene-d8	0.48		0.5000		95.9	70	130			

Sample ID: **mb-45621**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **45621**	RunNo: **60734**
Prep Date: **6/17/2019**	Analysis Date: **6/18/2019**	SeqNo: **2055221** 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: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.8	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: Toluene-d8	0.47		0.5000		94.5	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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906850**

24-Jun-19

Client: Souder, Miller & Associates

Project: Black Horse

Sample ID: **lcs-45621**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **45621**	RunNo: **60734**
Prep Date: **6/17/2019**	Analysis Date: **6/18/2019**	SeqNo: **2055246** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.3	70	130			
Surr: BFB	550		500.0		110	70	130			

Sample ID: **mb-45621**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **45621**	RunNo: **60734**
Prep Date: **6/17/2019**	Analysis Date: **6/18/2019**	SeqNo: **2055247** 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	550		500.0		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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: **1906850** RcptNo: **1**

Received By: **Thom Maybee** **6/15/2019 10:15:00 AM**

Completed By: **Leah Baca** **6/17/2019 8:18:55 AM** Leah Baca

Reviewed By: DAD 6/17/19

Chain of Custody

1. Is Chain of Custody 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. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
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: JJC 6-17-19

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	4.6	Good	Yes			

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: 5 day turn
☐ Standard ☐ **Rush**_____

Project Name: Black Horse

Project #:

Project Manager: Heather Patterson

Sampler: LAA HAP

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.3 + 0.3 = 4.6c

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. 1906850	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)
6/13/19	10:02	Soil	BG1 - 0.5	4oz		-001							X			
	1003		BG1 - 2			-002							X			
	1007		BG1 - 4			-003							X			
	1050		BG2 - 0.5			-004							X			
	1052		BG2 - 2			-005							X			
	1054		BG2 - 4			-006							X			
	1215		CS1			-007	X	X					X			
	1256		CS2			-008	X	X					X			
	1257		CS3			-009	X	X					X			
	1202		CS4			-010	X	X					X			
	1208		CSW1			-011	X	X					X			
	1221		CSW2			-012	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/13/19	5:00				6/14/19	0900
6/14/19	1900			courier	6-15-19	10.15

Remarks: Marathon

Pg 1 of 2

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.

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: 5 day turn
☐ Standard ☐ **Rush**

Project Name: Black Horse

Project #:

Project Manager: Heather Patterson

Sampler: LAA HAP

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.3 + 0.3 = 4.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1906850	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)
6/13/19	1320	Soil	CSW3	4 oz		-013	X	X					X			
"	1339	"	CSW4	"		-014	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/14/19	0900				6/14/19	0900
6/14/19	1900			Via: Courier	6-15-19	10.15

Remarks: pg 2 of 2

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.