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

September 28, 2020

#5E29133-BG52

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

SUBJECT: Remediation Closure Report for the Thistle Unit #032 Release (1RP-08-11-2736), Lea County, New Mexico

To Whom it May Concern:

On behalf of Devon Energy Production Company, 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 Thistle Unit #032 site. The site is in Unit P, Section 33, Township 23S, Range 33E, Lea County, New Mexico, on state 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	Thistle Unit #032	Company	Devon Energy Company
API Number	30-025-40016	Location	32.2543526, -103.5691833
Incident Number	1RP-08-11-2736		
Estimated Date of Release	8/16/2011	Date Reported to NMOCD	08/24/2020
Land Owner	State	Reported To	NMOCD, NMSLO
Source of Release	Centrifuge pump failed to start while rig was tripping and circulating to clean hole. Before drilling hand could restart pump, the pit overflowed into the pasture.		
Released Volume	40 BBLS	Released Material	Drilling Mud
Recovered Volume	40 BBLS	Net Release	0 BBLS
NMOCD Closure Criteria	<50 feet to groundwater		
SMA Response Dates	8/5/2020, 9/8/2020		

1.0 Background

On August 16, 2011, a release was discovered at the Thistle Unit #032H site due to a centrifuge pump failing to start while the drilling rig was active. Before drilling hand could restart pump, the pit overflowed into the pasture. Initial response activities were conducted by Devon personnel, and included source elimination and site containment activities, which recovered approximately 40 barrels of fluid. Figure 1 illustrates the vicinity and site location; Figure 2 illustrates the release location. The C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Thistle Unit #032H is located approximately 25 miles from Jal, New Mexico on State land at an elevation of approximately 3,662 feet above mean sea level (amsl).

Depth to groundwater is estimated to be between 300-400 feet bgs; however, there is no depth to groundwater data withing a 1600-meter radius of the area. The nearest significant watercourse is an unnamed pond, located approximately 5,920 feet to the south east. 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 lack of supportable groundwater data, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of less than 50 feet bgs. 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 August 5, 2020, SMA personnel arrived on site in response to the release associated with Thistle Unit #032H. SMA performed site delineation activities by collecting surface soil samples around the release site, based on figures provided by Devon personnel. Soil samples were field screened for chloride using an electrical conductivity (EC) meter and for hydrocarbon impacts using a calibrated MiniRAE 3000 photoionization detector (PID) equipped with a 10.6 eV lamp.

A total of twelve (12) sample locations (L1-L9 & SW1- SW3) were investigated to determine areas of impacted soil. One sample location (L1) indicated high chloride concentrations, so additional samples were collected from 1, 2 and 3 feet bgs to provide vertical delineation, and samples SW1-SW3 were collected from the surface to provide horizontal delineation. A total of 15 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 16.6 feet by 21 feet by 1 foot deep had been impacted.

On September 8, 2020 SMA returned to the site to guide the excavation of contaminated soil in the area surrounding sample L1. SMA guided the excavation activities by collecting soil samples for field screening, using the methods above. Impacted soil was excavated until field screening results indicated that the NMOCD Closure Criteria would be met. NMOCD was notified on September 5, 2020 that closure samples were expected to be collected in two (2) business days.

Confirmation samples were comprised of five-point composites of the base (CS1) and walls (SW1- SW4).

A total of five (5) samples were collected for laboratory analysis for the laboratory methods listed above. 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).

Figure 3 shows the extent of the excavation and sample locations. 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 Northern Delaware Basin, Jal, NM, 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 at 505-320-9241 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:

Ashley Maxwell
Project Manager

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

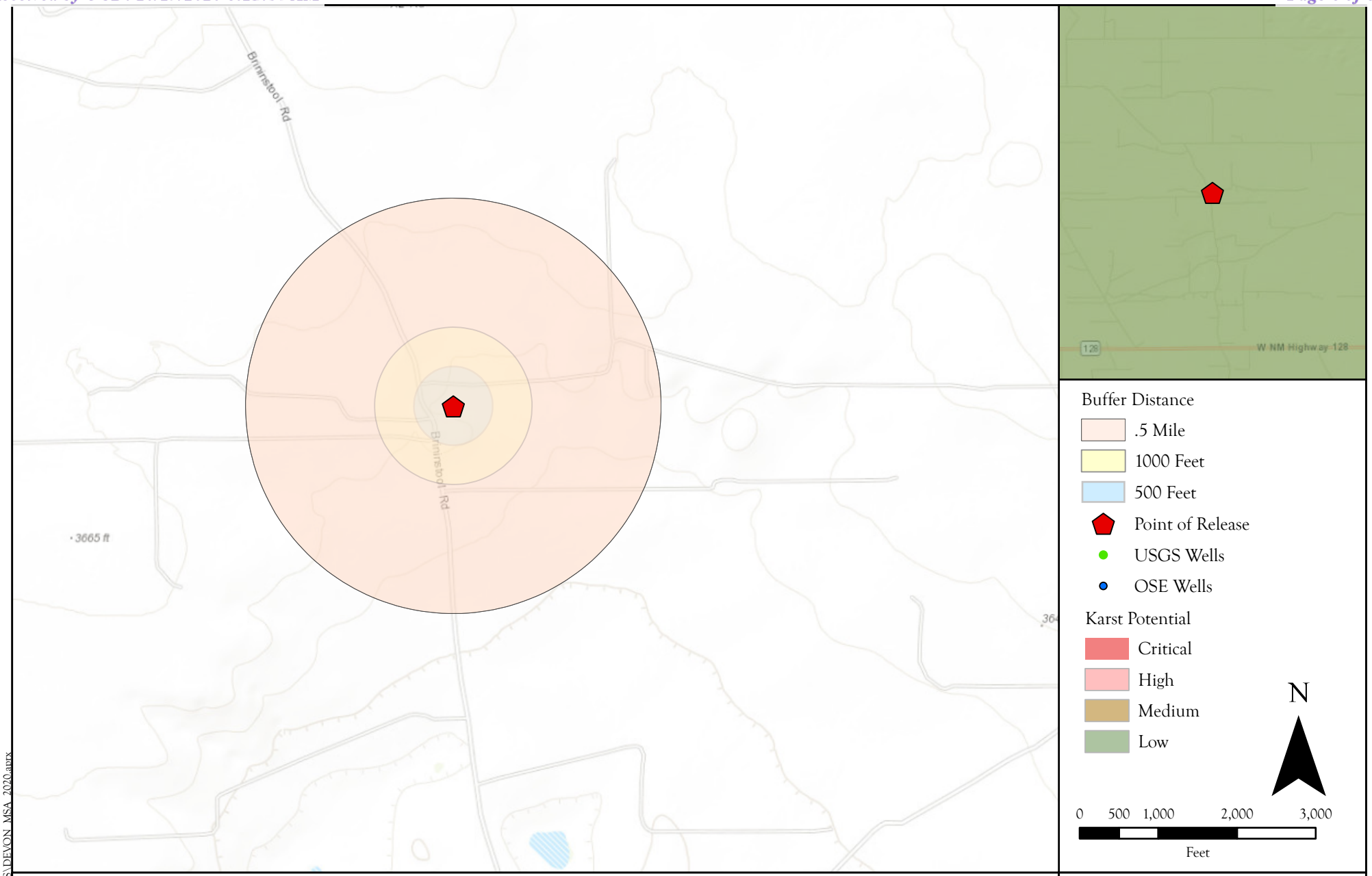
Tables:

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

Appendices:

Appendix A: Form C141
Appendix B: NMOSE Wells Report
Appendix C: Sampling Protocol
Appendix D: Laboratory Analytical Reports
Appendix E: Photo Log

FIGURES



Site Map
Thistle Unit #032H- Devon Energy Production Company
Lea County, New Mexico (32.2543526, -103.5691833)

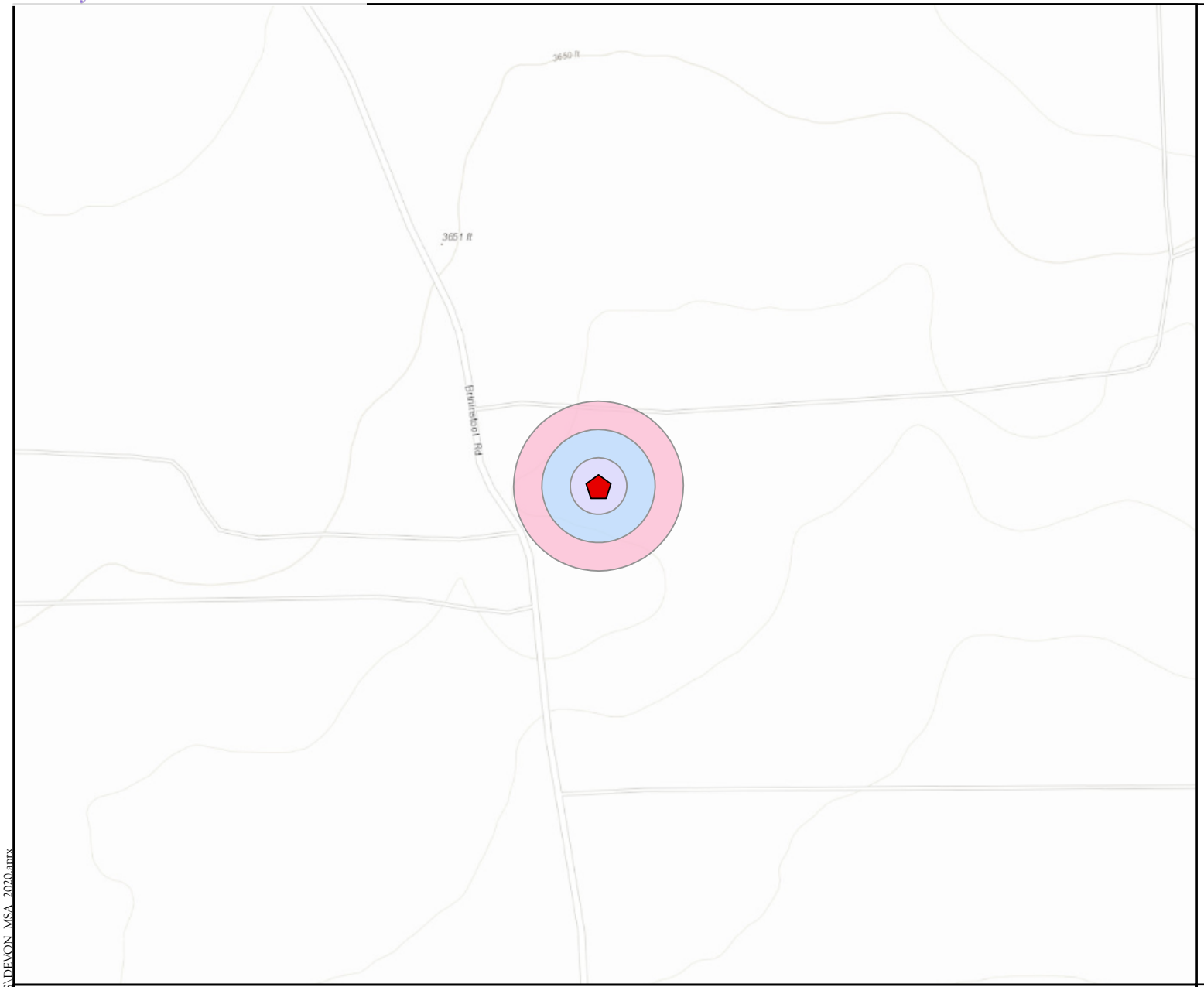
Figure 1

P:\5-Devon MSA 2020 (5E29133)\GIS\DEVON_MSA_2020.aprx
Date Saved: 9/22/2020

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

Drawn Sebastian Orozco
Date 9/23/2020
Checked
Approved

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



Buffer Distance
- 300 Feet
- 200 Feet
- 100 Feet
- Springs & Seeps
- Streams & Canals
- Rivers
- Flowlines SENM
- NM Wetlands
- Lakes & Playas
- FEMA Flood Zones 2011
- Point of Release

N

0 170 340 680 1,020
Feet

Surface Water Protection Map
Thistle Unit #032H- Devon Energy Production Company
Lea County, New Mexico (32.2543526,-103.5691833)

Figure 2

P:\5-Devon MSA 2020 (5E29133)\GIS\DEVON_MSA_2020.aprx
Date Saved: 9/22/2020

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

Drawn Sebastian Orozco
Date 9/23/2020
Checked
Approved

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Legend

1" Excavation

Sample Points

- Closure Samples
- Initial Side Wall Samples
- Initial Soil Samples
- Closure Side Wall Samples

N

0 10 20 40 60

Feet

Site and Sample Location Map
Thistle Unit #032H- Devon Energy Production Company
Lea County, New Mexico (32.2543526, -103.5691833)

Figure 3

P:\5-Devon MSA 2020 (5E29133)\GIS\DEVON_MSA_2020.mxd
Date Saved: 9/25/2020

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

Drawn Sebastian Orozco
Date 9/28/2020
Checked
Approved

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

Table 2:
NMOCD Closure Criteria

Devon Energy
North Thistle 34 State Com 1H

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	300-400	New Mexico Office of the State Engineer
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	N/A	USGS
Hortizontal Distance to Nearest Significant Watercourse (ft)	5,920	USGS

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	X	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	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					
within a 100-year floodplain?	No					

SMA #

Table 3:
Sample Results

Devon Energy
Thistle Unit #032H

Sample ID	Sample Date	Depth of Sample (feet bgs)	Action Taken	Method 8021B		Method 8015D				Method 300.0
				BTEX	Benzene	GRO	DRO	MRO	Total TPH	Cl-
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
NMOCD Reclamation Requirement (0-4 ft)				50	10	--	--	--	100	600
NMOCD Closure Criteria (>4 ft)				50	10					
L1	8/5/2020	Surface	Excavated	<0.222	<0.025	<4.9	<9.5	<47	<61.4	9400
		1		<0.222	<0.025	<4.9	<9.0	<45	<58.9	860
		2	In-Situ	<0.224	<0.025	<5.0	<9.1	<45	<59.1	540
		3		<0.22	<0.024	<4.9	<9.3	<47	<61.2	250
L2		Surface	In-Situ	<0.221	<0.025	<4.9	<9.6	<48	<62.5	<60
L3		Surface		<0.224	<0.025	<5.0	<9.6	<48	<62.6	<60
L4		Surface		<0.217	<0.024	<4.8	<9.1	<46	<59.9	<60
L5		Surface		<0.222	<0.025	<4.9	<8.6	<43	<57.5	<60
L6		Surface		<0.021	<0.025	<4.9	<9.3	<46	<60.2	<60
L7		Surface		<0.222	<0.025	<4.9	<8.5	<43	<56.4	<60
L8		Surface		<0.221	<0.025	<4.9	<8.7	53	53	<60
L9		Surface		<0.22	<0.024	<4.9	<8.5	<43	<56.4	<60
SW1		Surface		<0.224	<0.025	<5.0	<9.8	<49	<63.8	<60
SW2		Surface		<0.225	<0.025	<5.0	<9.7	<49	<63.7	<60
SW3		Surface		<0.221	<0.025	<4.9	<10	<50	<64.9	<60
Closure Samples										
CS1	9/8/2020	1	In-Situ	<0.222	<0.025	<4.9	<9.5	<47	<61.4	120
SW1		0-1		<0.219	<0.024	<4.9	<10	<50	<64.9	160
SW2		0-1		<0.215	<0.024	<4.8	<9.1	<46	<59.9	330
SW3		0-1		<0.224	<0.025	<5.0	<9.8	<49	<63.8	<60
SW4		0-1		<0.220	<0.024	<4.9	<9.6	<48	<62.5	100

SMA #

APPENDIX A
FORM C141

pJXK15 34947038

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Devon Energy	Contact Ralph Montoya
Address P. O. Box 250 Artesia, NM 88211	Telephone No. 575-748-5719
Facility Name Thistle Unit #32H	Facility Type Drilling Well

Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

API 30-025-40016

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	33	23S	33E	150	South	150	East	Lea County, NM

NATURE OF RELEASE

Type of Release Drilling Mud	Volume of Release Est. 40 bbls	Volume Recovered 40 bbls.
Source of Release Drilling Pit Overflowed	Date and Hour of Occurrence 8-16-11 8:45 AM	Date and Hour of Discovery 8-16-11 8:45 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ron Harvey with OCD	
By Whom? Ralph Montoya	Date and Hour 8-17-11 3:40 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

RECEIVED
AUG 24 2011
NMOCD ARTESIA

Describe Cause of Problem and Remedial Action Taken.*
Centrifugal pump failed to start while rig was tripping and circulating to clean hole better, before drilling hand could restart pump the pit overflowed into the pasture.

Describe Area Affected and Cleanup Action Taken.*
Duo-Vis suggests that fluid will not soak in the ground due to water loss properties (*MSDS sheet attached). Duo-Vis and graphite were the only two ingredients in this fresh water mud and are not regarded as dangerous to the environment. Have sent Advance Solids and clean up crew from Carlsbad.

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

Signature: Ralph Montoya	OIL CONSERVATION DIVISION
Printed Name: Ralph Montoya Ralph L Montoya	Approved by ~~District Supervisor~~ ENV ENGNR: Geoffrey Leking
Title: Drilling Superintendent, SENM	Approval Date: 08/25/11 Expiration Date: 10/25/11
Date: Phone: (575) 748-9935	Conditions of Approval: — Attached ☐

* Attach Additional Sheets If Necessary

IRP-08-11-2736

State of New Mexico
Oil Conservation Division

Incident ID	NJXK1534946451
District RP	1RP-2736
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?	300-400 (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	NJXK1534946451
District RP	1RP-2736
Facility ID	
Application ID	

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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 9/28/2020

email: tom.bynum@dvn.com Telephone: 575-748-2663

OCD Only

Received by: _____ Date: _____

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	NJXK1534946451
District RP	1RP-2736
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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 9/28/2020

email: tom.bynum@dvn.com Telephone: 575-748-2663

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: Brittany Hall Date: 01/13/2023

Printed Name: Brittany Hall Title: Environmental Specialist

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02281		CUB	LE	3	4	4	28	23S	33E	634495	3571183*	1679	545	400	145
C 02279		CUB	LE	3	4	3	28	23S	33E	633691	3571173*	1973	650	400	250
C 02280		CUB	LE	3	2	4	28	23S	33E	634489	3571586*	2078	650	400	250
C 02308		CUB	LE	1	3	1	10	24S	33E	634953	3567364*	2170	40	20	20
C 03591 POD1		CUB	LE	2	1	4	05	24S	33E	632731	3568518	2283			
C 02278		CUB	LE	3	4	2	28	23S	33E	634484	3571989*	2479	650	400	250

Average Depth to Water: **324 feet**

Minimum Depth: **20 feet**

Maximum Depth: **400 feet**

Record Count: 6

UTMNAD83 Radius Search (in meters):

Easting (X): 634779.97 **Northing (Y):** 3569527.61 **Radius:** 2500

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

9/21/20 2:39 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

APPENDIX C
SAMPLING PROTOCOL

Type text here

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

Sampling Protocol

The soil samples were collected in laboratory supplied containers in accordance with this sampling protocol, immediately placed on ice and sent under standard chain-of-custody protocols to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis. A total of twenty (20) 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.

Sampling Analysis Field Quality Assurance Procedures

A unique sample numbering was used to identify each sample collected and designated for on-site and off-site laboratory analysis. The purpose of this numbering scheme was to provide a tracking system for the retrieval of analytical and field data on each sample. Sample identification numbers were recorded on sample labels or tags, field notes, chain-of-custody records (COC) and all other applicable documentation used during the project. Sample labels were affixed to all sample containers during sampling activities. Information was recorded on each sample container label at the time of sample collection. The information recorded on the labels were as follows: sample identification number; sample type (discrete or composite); site name and area/location number; analysis to be performed; type of chemical preservative present in container; date and time of sample collection; and sample collector's name and initials. All samples were packed in ice in an approved rigid body container, custody sealed signed and shipped to the appropriate laboratory via insured currier service.

COC procedures implemented for the project provided documentation of the handling of each sample from the time of collection until completion of laboratory analysis. A COC form serves as a legal record of possession of the sample. A sample is considered to be under custody if one or more of the following criteria are met: the sample is in the sampler's possession; the sample is in the sampler's view after being in possession; the sample was in the sampler's possession and then was placed into a locked area to prevent tampering; and/or the sample is in a designated secure area. Custody was documented throughout the project field sampling activities by a chain-of custody form initiated each day during which samples are collected. Container custody seals placed on either individual samples or on the rigid body container were used to ensure that no sample tampering occurs between the time the samples are placed into the containers and the time the containers are opened for analysis at the laboratory. Container custody seals were signed and dated by the individual responsible for completing the COC form contained within the container.

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: clients.hallenvironmental.com

September 16, 2020

Ashley Maxwell

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

RE: Thistle Unit 32H OrderNo.: 2009556

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/10/2020 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 **2009556**
Date Reported: **9/16/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS1
Project: Thistle Unit 32H
Collection Date: 9/8/2020 1:00:00 PM
Lab ID: 2009556-001 **Matrix:** SOIL **Received Date:** 9/10/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	120	60		mg/Kg	20	9/15/2020 12:48:43 AM	55155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	9/11/2020 4:24:37 PM	55083
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/11/2020 4:24:37 PM	55083
Surr: DNOP	102	30.4-154		%Rec	1	9/11/2020 4:24:37 PM	55083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/14/2020 12:28:27 PM	55080
Surr: BFB	93.2	75.3-105		%Rec	1	9/14/2020 12:28:27 PM	55080
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	9/14/2020 12:28:27 PM	55080
Toluene	ND	0.049		mg/Kg	1	9/14/2020 12:28:27 PM	55080
Ethylbenzene	ND	0.049		mg/Kg	1	9/14/2020 12:28:27 PM	55080
Xylenes, Total	ND	0.099		mg/Kg	1	9/14/2020 12:28:27 PM	55080
Surr: 4-Bromofluorobenzene	98.9	80-120		%Rec	1	9/14/2020 12:28:27 PM	55080

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 **2009556**
Date Reported: **9/16/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: Thistle Unit 32H
Collection Date: 9/8/2020 1:05:00 PM
Lab ID: 2009556-002 **Matrix:** SOIL **Received Date:** 9/10/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	160	60		mg/Kg	20	9/15/2020 1:01:07 AM	55155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/11/2020 4:34:23 PM	55083
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/11/2020 4:34:23 PM	55083
Surr: DNOP	91.5	30.4-154		%Rec	1	9/11/2020 4:34:23 PM	55083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/14/2020 12:52:00 PM	55080
Surr: BFB	91.1	75.3-105		%Rec	1	9/14/2020 12:52:00 PM	55080
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/14/2020 12:52:00 PM	55080
Toluene	ND	0.049		mg/Kg	1	9/14/2020 12:52:00 PM	55080
Ethylbenzene	ND	0.049		mg/Kg	1	9/14/2020 12:52:00 PM	55080
Xylenes, Total	ND	0.097		mg/Kg	1	9/14/2020 12:52:00 PM	55080
Surr: 4-Bromofluorobenzene	95.7	80-120		%Rec	1	9/14/2020 12:52:00 PM	55080

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 **2009556**
Date Reported: **9/16/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Thistle Unit 32H
Collection Date: 9/8/2020 1:10:00 PM
Lab ID: 2009556-003 **Matrix:** SOIL **Received Date:** 9/10/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	330	60		mg/Kg	20	9/15/2020 1:13:31 AM	55155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	9/11/2020 4:44:06 PM	55083
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/11/2020 4:44:06 PM	55083
Surr: DNOP	103	30.4-154		%Rec	1	9/11/2020 4:44:06 PM	55083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/14/2020 1:15:22 PM	55080
Surr: BFB	95.2	75.3-105		%Rec	1	9/14/2020 1:15:22 PM	55080
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/14/2020 1:15:22 PM	55080
Toluene	ND	0.048		mg/Kg	1	9/14/2020 1:15:22 PM	55080
Ethylbenzene	ND	0.048		mg/Kg	1	9/14/2020 1:15:22 PM	55080
Xylenes, Total	ND	0.095		mg/Kg	1	9/14/2020 1:15:22 PM	55080
Surr: 4-Bromofluorobenzene	99.3	80-120		%Rec	1	9/14/2020 1:15:22 PM	55080

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 **2009556**
Date Reported: **9/16/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: Thistle Unit 32H
Collection Date: 9/8/2020 1:15:00 PM
Lab ID: 2009556-004 **Matrix:** SOIL **Received Date:** 9/10/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	9/15/2020 1:25:55 AM	55155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/11/2020 4:53:52 PM	55083
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/11/2020 4:53:52 PM	55083
Surr: DNOP	97.0	30.4-154		%Rec	1	9/11/2020 4:53:52 PM	55083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/14/2020 1:38:50 PM	55080
Surr: BFB	94.7	75.3-105		%Rec	1	9/14/2020 1:38:50 PM	55080
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	9/14/2020 1:38:50 PM	55080
Toluene	ND	0.050		mg/Kg	1	9/14/2020 1:38:50 PM	55080
Ethylbenzene	ND	0.050		mg/Kg	1	9/14/2020 1:38:50 PM	55080
Xylenes, Total	ND	0.099		mg/Kg	1	9/14/2020 1:38:50 PM	55080
Surr: 4-Bromofluorobenzene	98.8	80-120		%Rec	1	9/14/2020 1:38:50 PM	55080

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 **2009556**
Date Reported: **9/16/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: Thistle Unit 32H
Collection Date: 9/8/2020 1:20:00 PM
Lab ID: 2009556-005 **Matrix:** SOIL **Received Date:** 9/10/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	100	60		mg/Kg	20	9/15/2020 1:38:20 AM	55155
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	9/11/2020 5:03:35 PM	55083
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/11/2020 5:03:35 PM	55083
Surr: DNOP	95.2	30.4-154		%Rec	1	9/11/2020 5:03:35 PM	55083
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/14/2020 2:49:23 PM	55080
Surr: BFB	91.5	75.3-105		%Rec	1	9/14/2020 2:49:23 PM	55080
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/14/2020 2:49:23 PM	55080
Toluene	ND	0.049		mg/Kg	1	9/14/2020 2:49:23 PM	55080
Ethylbenzene	ND	0.049		mg/Kg	1	9/14/2020 2:49:23 PM	55080
Xylenes, Total	ND	0.098		mg/Kg	1	9/14/2020 2:49:23 PM	55080
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	9/14/2020 2:49:23 PM	55080

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#: **2009556**
16-Sep-20

Client: Souder, Miller & Associates
Project: Thistle Unit 32H

Sample ID: **MB-55155**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **55155**	RunNo: **71850**							
Prep Date: **9/14/2020**	Analysis Date: **9/14/2020**	SeqNo: **2514865**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-55155**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **55155**	RunNo: **71850**							
Prep Date: **9/14/2020**	Analysis Date: **9/14/2020**	SeqNo: **2514866**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
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#: **2009556**

16-Sep-20

Client: Souder, Miller & Associates

Project: Thistle Unit 32H

Sample ID: **LCS-55083**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **55083**	RunNo: **71804**
Prep Date: **9/10/2020**	Analysis Date: **9/11/2020**	SeqNo: **2512449** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	70	130			
Surr: DNOP	5.0		5.000		99.7	30.4	154			

Sample ID: **MB-55083**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **55083**	RunNo: **71804**
Prep Date: **9/10/2020**	Analysis Date: **9/11/2020**	SeqNo: **2512450** 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		109	30.4	154			

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#: **2009556**

16-Sep-20

Client: Souder, Miller & Associates

Project: Thistle Unit 32H

Sample ID: **lcs-54986**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **54986**	RunNo: **71790**
Prep Date: **9/6/2020**	Analysis Date: **9/11/2020**	SeqNo: **2511831** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		116	75.3	105			S

Sample ID: **lcs-55080**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **55080**	RunNo: **71790**
Prep Date: **9/10/2020**	Analysis Date: **9/12/2020**	SeqNo: **2511832** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	75.2	72.5	106			
Surr: BFB	1000		1000		100	75.3	105			

Sample ID: **mb-54986**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **54986**	RunNo: **71790**
Prep Date: **9/6/2020**	Analysis Date: **9/11/2020**	SeqNo: **2511833** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		108	75.3	105			S

Sample ID: **mb-55080**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **55080**	RunNo: **71790**
Prep Date: **9/10/2020**	Analysis Date: **9/12/2020**	SeqNo: **2511834** 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	920		1000		92.4	75.3	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#: **2009556**

16-Sep-20

Client: Souder, Miller & Associates

Project: Thistle Unit 32H

Sample ID: **LCS-55080**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **55080**	RunNo: **71790**
Prep Date: **9/10/2020**	Analysis Date: **9/12/2020**	SeqNo: **2511862** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.6	80	120			
Toluene	0.94	0.050	1.000	0	94.1	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.4	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Sample ID: **mb-55080**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **55080**	RunNo: **71790**
Prep Date: **9/10/2020**	Analysis Date: **9/12/2020**	SeqNo: **2511863** 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	0.99		1.000		99.1	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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Souder, Miller & Associates | Work Order Number: 2009556 | RcptNo: 1

Received By: **Juan Rojas** 9/10/2020 8:00:00 AM

Completed By: **Juan Rojas** 9/10/2020 8:17:34 AM

Reviewed By: SPA 9.10.20

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. 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: JNC 9/10/20

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	2.1	Good				

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

Project Name: Thistle Unit #32H

Project #:

Project Manager: Ashley Maxwell

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.9+0.2=2.1 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2009556	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)
9/8	1:00	Soil	CS1	4oz	Cool	-001										
	1:05		SW1			-002										
	1:10		SW2			-003										
	1:15		SW3			-004										
	1:20		SW4			-005										

Date	Time	Relinquished by	Received by	Via	Date	Time
9/8	2:00	Phil Smith			9/8/20	1000
9/9/20	1910			courier	9/10/20	8:00

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: clients.hallenvironmental.com

August 14, 2020

Ashley Maxwell

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

RE: Thistle unit 32 H OrderNo.: 2008366

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 15 sample(s) on 8/7/2020 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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:00:00 AM
Lab ID: 2008366-001 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	8200	300		mg/Kg	100	8/13/2020 10:30:48 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/11/2020 11:10:01 AM	54307
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/11/2020 11:10:01 AM	54307
Surr: DNOP	69.3	30.4-154		%Rec	1	8/11/2020 11:10:01 AM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 2:10:46 PM	54268
Surr: BFB	104	75.3-105		%Rec	1	8/10/2020 2:10:46 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 2:10:46 PM	54268
Toluene	ND	0.049		mg/Kg	1	8/10/2020 2:10:46 PM	54268
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 2:10:46 PM	54268
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2020 2:10:46 PM	54268
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/10/2020 2:10:46 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-1'
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:02:00 AM
Lab ID: 2008366-002 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	860	60		mg/Kg	20	8/12/2020 5:05:33 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	8/11/2020 11:34:22 AM	54307
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/11/2020 11:34:22 AM	54307
Surr: DNOP	106	30.4-154		%Rec	1	8/11/2020 11:34:22 AM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 3:21:40 PM	54268
Surr: BFB	104	75.3-105		%Rec	1	8/10/2020 3:21:40 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 3:21:40 PM	54268
Toluene	ND	0.049		mg/Kg	1	8/10/2020 3:21:40 PM	54268
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 3:21:40 PM	54268
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2020 3:21:40 PM	54268
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	8/10/2020 3:21:40 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-2'
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:04:00 AM
Lab ID: 2008366-003 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	540	60		mg/Kg	20	8/12/2020 5:42:35 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	8/11/2020 11:58:41 AM	54307
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/11/2020 11:58:41 AM	54307
Surr: DNOP	94.4	30.4-154		%Rec	1	8/11/2020 11:58:41 AM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/10/2020 3:45:21 PM	54268
Surr: BFB	104	75.3-105		%Rec	1	8/10/2020 3:45:21 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 3:45:21 PM	54268
Toluene	ND	0.050		mg/Kg	1	8/10/2020 3:45:21 PM	54268
Ethylbenzene	ND	0.050		mg/Kg	1	8/10/2020 3:45:21 PM	54268
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2020 3:45:21 PM	54268
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	8/10/2020 3:45:21 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-3'
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:06:00 AM
Lab ID: 2008366-004 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	250	60		mg/Kg	20	8/12/2020 5:54:56 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/11/2020 12:22:48 PM	54307
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/11/2020 12:22:48 PM	54307
Surr: DNOP	118	30.4-154		%Rec	1	8/11/2020 12:22:48 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 4:08:59 PM	54268
Surr: BFB	104	75.3-105		%Rec	1	8/10/2020 4:08:59 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/10/2020 4:08:59 PM	54268
Toluene	ND	0.049		mg/Kg	1	8/10/2020 4:08:59 PM	54268
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 4:08:59 PM	54268
Xylenes, Total	ND	0.098		mg/Kg	1	8/10/2020 4:08:59 PM	54268
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	8/10/2020 4:08:59 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:08:00 AM
Lab ID: 2008366-005 **Matrix:** SOIL
Received Date: 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 6:07:17 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/11/2020 12:47:04 PM	54307
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/11/2020 12:47:04 PM	54307
Surr: DNOP	53.5	30.4-154		%Rec	1	8/11/2020 12:47:04 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 4:32:42 PM	54268
Surr: BFB	105	75.3-105		%Rec	1	8/10/2020 4:32:42 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 4:32:42 PM	54268
Toluene	ND	0.049		mg/Kg	1	8/10/2020 4:32:42 PM	54268
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 4:32:42 PM	54268
Xylenes, Total	ND	0.098		mg/Kg	1	8/10/2020 4:32:42 PM	54268
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	8/10/2020 4:32:42 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:10:00 AM
Lab ID: 2008366-006 **Matrix:** SOIL
Received Date: 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 6:19:38 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/11/2020 1:35:43 PM	54307
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/11/2020 1:35:43 PM	54307
Surr: DNOP	48.0	30.4-154		%Rec	1	8/11/2020 1:35:43 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/10/2020 4:56:26 PM	54268
Surr: BFB	103	75.3-105		%Rec	1	8/10/2020 4:56:26 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 4:56:26 PM	54268
Toluene	ND	0.050		mg/Kg	1	8/10/2020 4:56:26 PM	54268
Ethylbenzene	ND	0.050		mg/Kg	1	8/10/2020 4:56:26 PM	54268
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2020 4:56:26 PM	54268
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	8/10/2020 4:56:26 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:12:00 AM
Lab ID: 2008366-007 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Chloride	ND	60		mg/Kg	20	8/12/2020 6:31:59 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	8/11/2020 2:00:04 PM	54307
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/11/2020 2:00:04 PM	54307
Surr: DNOP	58.7	30.4-154		%Rec	1	8/11/2020 2:00:04 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/10/2020 5:20:03 PM	54268
Surr: BFB	102	75.3-105		%Rec	1	8/10/2020 5:20:03 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	8/10/2020 5:20:03 PM	54268
Toluene	ND	0.048		mg/Kg	1	8/10/2020 5:20:03 PM	54268
Ethylbenzene	ND	0.048		mg/Kg	1	8/10/2020 5:20:03 PM	54268
Xylenes, Total	ND	0.097		mg/Kg	1	8/10/2020 5:20:03 PM	54268
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/10/2020 5:20:03 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L5-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:14:00 AM
Lab ID: 2008366-008 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Chloride	ND	60		mg/Kg	20	8/12/2020 6:44:21 PM	54363
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	8/11/2020 3:13:46 PM	54307
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	8/11/2020 3:13:46 PM	54307
Surr: DNOP	70.0	30.4-154		%Rec	1	8/11/2020 3:13:46 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 5:43:40 PM	54268
Surr: BFB	102	75.3-105		%Rec	1	8/10/2020 5:43:40 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	8/10/2020 5:43:40 PM	54268
Toluene	ND	0.049		mg/Kg	1	8/10/2020 5:43:40 PM	54268
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 5:43:40 PM	54268
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2020 5:43:40 PM	54268
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/10/2020 5:43:40 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L6-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:16:00 AM
Lab ID: 2008366-009 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 5:45:20 PM	54379
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/11/2020 3:37:52 PM	54307
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/11/2020 3:37:52 PM	54307
Surr: DNOP	63.3	30.4-154		%Rec	1	8/11/2020 3:37:52 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 6:07:16 PM	54268
Surr: BFB	101	75.3-105		%Rec	1	8/10/2020 6:07:16 PM	54268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 6:07:16 PM	54268
Toluene	ND	0.049		mg/Kg	1	8/10/2020 6:07:16 PM	54268
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 6:07:16 PM	54268
Xylenes, Total	ND	0.098		mg/Kg	1	8/10/2020 6:07:16 PM	54268
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/10/2020 6:07:16 PM	54268

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L7-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:18:00 AM
Lab ID: 2008366-010 **Matrix:** SOIL
Received Date: 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 5:57:44 PM	54379
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	8/11/2020 4:02:20 PM	54307
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	8/11/2020 4:02:20 PM	54307
Surr: DNOP	56.0	30.4-154		%Rec	1	8/11/2020 4:02:20 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 7:18:04 PM	54276
Surr: BFB	103	75.3-105		%Rec	1	8/10/2020 7:18:04 PM	54276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 7:18:04 PM	54276
Toluene	ND	0.049		mg/Kg	1	8/10/2020 7:18:04 PM	54276
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 7:18:04 PM	54276
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2020 7:18:04 PM	54276
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/10/2020 7:18:04 PM	54276

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L8-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:20:00 AM
Lab ID: 2008366-011 **Matrix:** SOIL
Received Date: 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 6:10:09 PM	54379
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	8/11/2020 4:26:26 PM	54307
Motor Oil Range Organics (MRO)	53	43		mg/Kg	1	8/11/2020 4:26:26 PM	54307
Surr: DNOP	93.0	30.4-154		%Rec	1	8/11/2020 4:26:26 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 8:28:32 PM	54276
Surr: BFB	101	75.3-105		%Rec	1	8/10/2020 8:28:32 PM	54276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 8:28:32 PM	54276
Toluene	ND	0.049		mg/Kg	1	8/10/2020 8:28:32 PM	54276
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 8:28:32 PM	54276
Xylenes, Total	ND	0.098		mg/Kg	1	8/10/2020 8:28:32 PM	54276
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	8/10/2020 8:28:32 PM	54276

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L9-Surface
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:20:00 AM
Lab ID: 2008366-012 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 6:22:33 PM	54379
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	8/11/2020 4:50:49 PM	54307
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	8/11/2020 4:50:49 PM	54307
Surr: DNOP	73.4	30.4-154		%Rec	1	8/11/2020 4:50:49 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 10:49:05 PM	54276
Surr: BFB	103	75.3-105		%Rec	1	8/10/2020 10:49:05 PM	54276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/10/2020 10:49:05 PM	54276
Toluene	ND	0.049		mg/Kg	1	8/10/2020 10:49:05 PM	54276
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 10:49:05 PM	54276
Xylenes, Total	ND	0.098		mg/Kg	1	8/10/2020 10:49:05 PM	54276
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	8/10/2020 10:49:05 PM	54276

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 1
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:22:00 AM
Lab ID: 2008366-013 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 6:34:58 PM	54379
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/11/2020 5:15:06 PM	54307
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/11/2020 5:15:06 PM	54307
Surr: DNOP	53.8	30.4-154		%Rec	1	8/11/2020 5:15:06 PM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/10/2020 11:12:32 PM	54276
Surr: BFB	98.9	75.3-105		%Rec	1	8/10/2020 11:12:32 PM	54276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 11:12:32 PM	54276
Toluene	ND	0.050		mg/Kg	1	8/10/2020 11:12:32 PM	54276
Ethylbenzene	ND	0.050		mg/Kg	1	8/10/2020 11:12:32 PM	54276
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2020 11:12:32 PM	54276
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	8/10/2020 11:12:32 PM	54276

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 2
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:24:00 AM
Lab ID: 2008366-014 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 6:47:22 PM	54379
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/12/2020 7:16:41 AM	54307
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/12/2020 7:16:41 AM	54307
Surr: DNOP	95.6	30.4-154		%Rec	1	8/12/2020 7:16:41 AM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/10/2020 11:36:10 PM	54276
Surr: BFB	100	75.3-105		%Rec	1	8/10/2020 11:36:10 PM	54276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 11:36:10 PM	54276
Toluene	ND	0.050		mg/Kg	1	8/10/2020 11:36:10 PM	54276
Ethylbenzene	ND	0.050		mg/Kg	1	8/10/2020 11:36:10 PM	54276
Xylenes, Total	ND	0.10		mg/Kg	1	8/10/2020 11:36:10 PM	54276
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/10/2020 11:36:10 PM	54276

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 **2008366**
Date Reported: **8/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 3
Project: Thistle unit 32 H
Collection Date: 8/5/2020 11:26:00 AM
Lab ID: 2008366-015 **Matrix:** SOIL **Received Date:** 8/7/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/12/2020 6:59:46 PM	54379
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/12/2020 7:40:44 AM	54307
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/12/2020 7:40:44 AM	54307
Surr: DNOP	80.8	30.4-154		%Rec	1	8/12/2020 7:40:44 AM	54307
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/10/2020 11:59:35 PM	54276
Surr: BFB	98.8	75.3-105		%Rec	1	8/10/2020 11:59:35 PM	54276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/10/2020 11:59:35 PM	54276
Toluene	ND	0.049		mg/Kg	1	8/10/2020 11:59:35 PM	54276
Ethylbenzene	ND	0.049		mg/Kg	1	8/10/2020 11:59:35 PM	54276
Xylenes, Total	ND	0.098		mg/Kg	1	8/10/2020 11:59:35 PM	54276
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/10/2020 11:59:35 PM	54276

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#: **2008366**

14-Aug-20

Client: Souder, Miller & Associates

Project: Thistle unit 32 H

Sample ID: **MB-54379** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **54379** RunNo: **71009**

Prep Date: **8/12/2020** Analysis Date: **8/12/2020** SeqNo: **2475242** Units: **mg/Kg**

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

Sample ID: **LCS-54379** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **54379** RunNo: **71009**

Prep Date: **8/12/2020** Analysis Date: **8/12/2020** SeqNo: **2475243** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.6	90	110			

Sample ID: **LCS-54363** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **54363** RunNo: **71037**

Prep Date: **8/12/2020** Analysis Date: **8/12/2020** SeqNo: **2475462** Units: **mg/Kg**

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

Sample ID: **MB-54363** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **54363** RunNo: **71037**

Prep Date: **8/12/2020** Analysis Date: **8/12/2020** SeqNo: **2475463** Units: **mg/Kg**

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

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#: **2008366**

14-Aug-20

Client: Souder, Miller & Associates

Project: Thistle unit 32 H

Sample ID: **LCS-54255** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **54255** RunNo: **70976**

Prep Date: **8/7/2020** Analysis Date: **8/10/2020** SeqNo: **2472908** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	30.4	154			

Sample ID: **MB-54255** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **54255** RunNo: **70976**

Prep Date: **8/7/2020** Analysis Date: **8/11/2020** SeqNo: **2472909** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.7		10.00		56.6	30.4	154			

Sample ID: **LCS-54307** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **54307** RunNo: **70976**

Prep Date: **8/10/2020** Analysis Date: **8/11/2020** SeqNo: **2473721** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.1	70	130			
Surr: DNOP	5.1		5.000		102	30.4	154			

Sample ID: **MB-54307** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **54307** RunNo: **70976**

Prep Date: **8/10/2020** Analysis Date: **8/11/2020** SeqNo: **2473722** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		99.2	30.4	154			

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#: **2008366**
14-Aug-20

Client: Souder, Miller & Associates
Project: Thistle unit 32 H

Sample ID: **mb-54268** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **54268** RunNo: **70938**
Prep Date: **8/7/2020** Analysis Date: **8/9/2020** SeqNo: **2470936** 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	1000		1000		103	75.3	105			

Sample ID: **lcs-54268** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **54268** RunNo: **70938**
Prep Date: **8/7/2020** Analysis Date: **8/9/2020** SeqNo: **2470937** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	81.1	72.5	106			
Surr: BFB	1100		1000		108	75.3	105			S

Sample ID: **mb-54276** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **54276** RunNo: **70956**
Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471833** 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	1000		1000		103	75.3	105			

Sample ID: **lcs-54276** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **54276** RunNo: **70956**
Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471834** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.7	72.5	106			
Surr: BFB	1100		1000		110	75.3	105			S

Sample ID: **2008366-011ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **L8-Surface** Batch ID: **54276** RunNo: **70956**
Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471837** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.9	24.41	0	81.4	61.3	114			
Surr: BFB	1100		976.6		111	75.3	105			S

Sample ID: **2008366-011amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **L8-Surface** Batch ID: **54276** RunNo: **70956**
Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471838** Units: **mg/Kg**

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

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#: **2008366**
14-Aug-20

Client: Souder, Miller & Associates
Project: Thistle unit 32 H

Sample ID: **2008366-011amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **L8-Surface** Batch ID: **54276** RunNo: **70956**
Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471838** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.90	0	87.6	61.3	114	9.30	20	
Surr: BFB	1100		996.0		111	75.3	105	0	0	S

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#: **2008366**
14-Aug-20

Client: Souder, Miller & Associates
Project: Thistle unit 32 H

Sample ID: **mb-54268** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **54268** RunNo: **70938**
Prep Date: **8/7/2020** Analysis Date: **8/9/2020** SeqNo: **2471011** 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		108	80	120			

Sample ID: **LCS-54268** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **54268** RunNo: **70938**
Prep Date: **8/7/2020** Analysis Date: **8/9/2020** SeqNo: **2471012** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.4	80	120			
Toluene	0.96	0.050	1.000	0	95.6	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID: **mb-54276** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **54276** RunNo: **70956**
Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471880** 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		106	80	120			

Sample ID: **LCS-54276** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **54276** RunNo: **70956**
Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471881** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.5	80	120			
Toluene	0.95	0.050	1.000	0	94.9	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.6	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.8	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2008366**

14-Aug-20

Client: Souder, Miller & Associates

Project: Thistle unit 32 H

Sample ID: **2008366-010ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **L7-Surface** Batch ID: **54276** RunNo: **70956**

Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471883** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	0.9970	0	92.3	76.3	120			
Toluene	0.94	0.050	0.9970	0.01123	92.7	78.5	120			
Ethylbenzene	0.94	0.050	0.9970	0	94.4	78.1	124			
Xylenes, Total	2.9	0.10	2.991	0	96.2	79.3	125			
Surr: 4-Bromofluorobenzene	1.1		0.9970		109	80	120			

Sample ID: **2008366-010amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **L7-Surface** Batch ID: **54276** RunNo: **70956**

Prep Date: **8/8/2020** Analysis Date: **8/10/2020** SeqNo: **2471884** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	0.9930	0	88.0	76.3	120	5.24	20	
Toluene	0.91	0.050	0.9930	0.01123	90.6	78.5	120	2.60	20	
Ethylbenzene	0.91	0.050	0.9930	0	91.4	78.1	124	3.65	20	
Xylenes, Total	2.7	0.099	2.979	0	92.0	79.3	125	4.89	20	
Surr: 4-Bromofluorobenzene	1.1		0.9930		109	80	120	0	0	

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

ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Souder, Miller & Associates** Work Order Number: **2008366** RcptNo: **1**

Received By: **Cheyenne Cason** **8/7/2020 8:00:00 AM**

Completed By: **Leah Baca** **8/7/2020 9:29:56 AM** Leah SBaca

Reviewed By: EM 8/7/20

Chain of Custody

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

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: SPA 8-7-20

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	4.1	Good				
2	5.8	Good				
3	5.9	Good				
4	0.3	Good				

Chain-of-Custody Record

Client: SMA

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 Days
☑ Standard ☐ Rush

Project Name: Thistle Unit #32 H

Project #:

Project Manager: Ashley Maxwell

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): (°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. 2008616	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)
8/5	11:00	Soil	L1 - Surface	4oz	Cool	-001										
	11:02		L1 - 1'			-002										
	11:04		L1 - 2'			-003										
	11:06		L1 - 3'			-004										
	11:08		L2 - Surface			-005										
	11:10		L3 - Surface			-006										
	11:12		L4 - Surface			-007										
	11:14		L5 - Surface			-008										
	11:16		L6 - Surface			-009										
	11:18		L7 - Surface			-010										
	11:20		L8 - Surface			-011										
	11:20		L9 - Surface			-013										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
8/6/20	915				8/6/20	915
8/6/20	1900		CMC	Courier	8/7/20	0800

Remarks: Bill Devon

4.1 ± 0 = 4.1
5.8 ± 0 = 5.8
5.9 ± 0 = 5.9
0.3 ± 0 = 0.3

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

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
☑ Standard ☒ Rush

Project Name:

Project #: Thistle unit #321H

Project Manager:

Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 3
Cooler Temp(including CF): see first page (°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. 2008366	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)
8/5	11:22	Soil	SW1	4oz	Cool	-013	1	1					1			
1	11:24	1	SW2	1	1	-014	1	1					1			
1	11:26	1	SW3	1	1	-015	1	1					1			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
8/6/20	915				8/6/20	915
8/6/20	1900			Courier	8/7/20	0806

Remarks:
Bill Devon

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

APPENDIX E
PHOTO LOG


S
SW
W
210
270
240°SW (T)
32.254916, -103.568724 ±3m
1085 m
08 Sep 2020, 12:12:29

W NW N

270 300 330 0

316°NW (T) 32.254887, -103.568733 ±2m 1083 m

08 Sep 2020, 12:12:37

W 270 300 NW 330 N 0

305°NW (T) 32.254892, -103.568716 ±1m 1083 m

08 Sep 2020, 12:12:53

S 180 210 SW 240 W 270

227°SW (T) 32.254967, -103.5687 ±1m 1083 m

08 Sep 2020, 12:13:09

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 10719

CONDITIONS

Operator:	OGRID:
Pima Environmental Services, LLC 5614 N Lovington Hwy Hobbs, NM 88240	329999
	Action Number: 10719
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	1/13/2023