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

July 8, 2020

#5E29133-BG14

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

SUBJECT: Remediation Closure Report for the North Thistle 34 State Com #1H Release (1RP-4302), Lea County, New Mexico

To Whom It May Concern:

On behalf of Devon Energy Production Company (Devon), 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 North Thistle 34 State Com #1H site. The site is in Unit M, Section 34, Township 22S, 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	North Thistle 34 State Com #1H	Company	Devon Energy Production Company
API Number	30-025-42465	Location	32.341787316 -103.56725354
Incident Number	1RP-4302		
Estimated Date of Release	May 16, 2016	Date Reported to NMOCD	May 16, 2016
Land Owner	State	Reported To	NMOCD
Source of Release	Water tanks struck by lightning		
Released Volume	725 BBLS	Released Material	Produced Water
Recovered Volume	725 BBLS	Net Release	0 BBLS
NMOCD Closure Criteria	<50 feet to groundwater		
SMA Response Dates	5/27/2020		

1.0 Background

On May 16, 2016, a release was discovered at the North Thistle 34 State Com #1H site due to water tanks being stuck by lightning. Initial response activities were conducted by Devon Energy, which included source elimination, containment, and site stabilization activities, which recovered approximately 725 barrels of fluid from the lined containment. Figure 1 illustrates the vicinity and site location, Figure 2 illustrates the release location. The C-141 form is included in Appendix A.

Site Information and Closure Criteria

The North Thistle 34 State Com #1H is located approximately 25 miles southwest of Eunice, New Mexico on State land at an elevation of approximately 3,567 feet above mean sea level (amsl).

Based upon New Mexico Office of the State Engineer (Appendix B), there is no depth to groundwater information within a 3,800 meter radius in the area, and SMA has therefore not made a determination. There are no known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 6/29/2020). The nearest significant watercourse is unnamed intermittent stream, located approximately 6,113 feet to the southeast of the release. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of less than 50 feet bgs. Based on soil samples collected the meets the standards of Table I of 19.15.29.12 NMAC

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

3.0 Release Characterization and Remediation Activities

On May 27, 2020, SMA personnel arrived on site in response to the release associated with North Thistle 34 State Com #1H. Devon has removed the tank battery since the release, so no equipment was in the area of the release. SMA performed site delineation activities by collecting soil samples from the entire area of the previously-located tank battery.

A total of thirteen (13) sample locations (SL1-SL13) were investigated by collecting surface samples from each location. The 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. 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 a Hall Environmental representative. (Appendix D).

Figure 3 shows the extent of the former tank battery and sample locations. All laboratory results are summarized in Table 3. Laboratory reports are included in Appendix D.

As summarized in Table 3, results indicate that the areas surrounding the releases meet NMOCD Closure Criteria. SMA on behalf of Devon Energy Production Company recommends no further action.

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 505-320-8975 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Ashley Maxwell
Project Manager

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

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

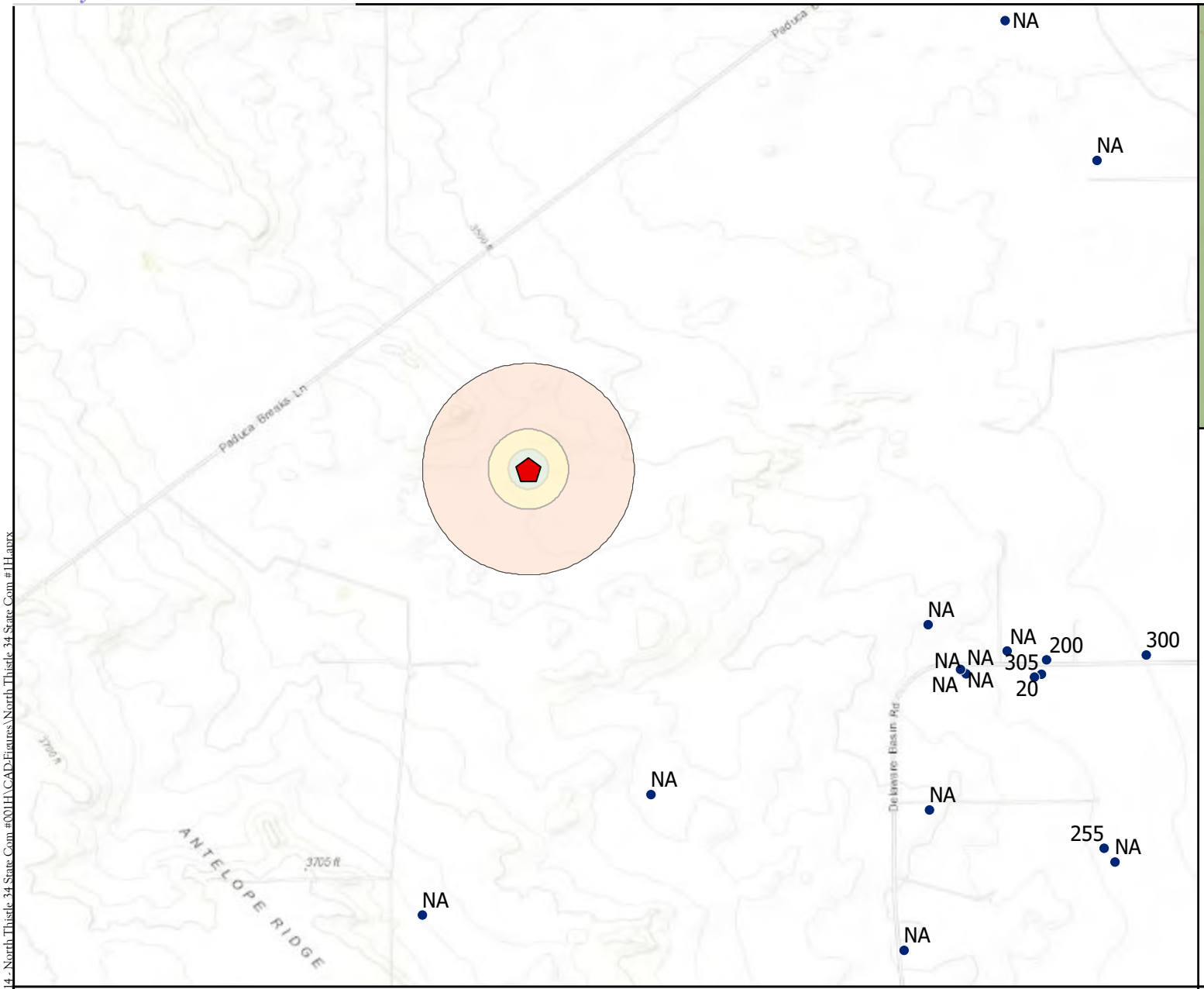
Tables:

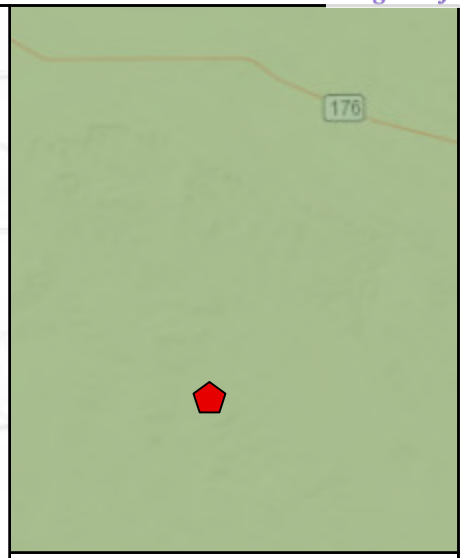
Table 2: NMOCD Closure Criteria Justification
Table 3: Summary of Sample Results

Appendices:

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

FIGURES





Buffer Distance
- .5 Mile
- 1000 Feet
- 500 Feet
- OSE Depth to GW
- USGS GW Well
- Point of Release

Karst Potential
- Critical
- High
- Medium
- Low

N

0 1,000 2,000 4,000 6,000
Feet

Vicinity and Well Head Protection Map
North Thistle 34 State Com #1H - Devon Energy Production Company
UL: M S: 34 T: 22S R: 33E, Lea County, New Mexico

Figure 1

P:\5-Devon MSA 2020 (5E29133)\RG14 - North Thistle 34 State Com #001H\CAD\Figures\North Thistle 34 State Com #1H.aprx
Date Saved: 6/29/2020

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

Drawn Lynn A. Acosta
Date 7/8/2020
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

0 287.5 575 1,150 1,725

Feet

Surface Water Protection Map
North Thistle 34 State Com #1H- Devon Energy Production Company
UL: M S: 34 T: 22S R: 33E Lea County, New Mexico

Figure 2

P:\5-Devon MSA 2020 (5E29133)\FG14 - North Thistle 34 State Com #001H\CAD\Figures\North Thistle 34 State Com #1H.aprx
Date Saved: 5/19/2020

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

Drawn Lynn A. Acosta
Date 6/29/2020
Checked
Approved

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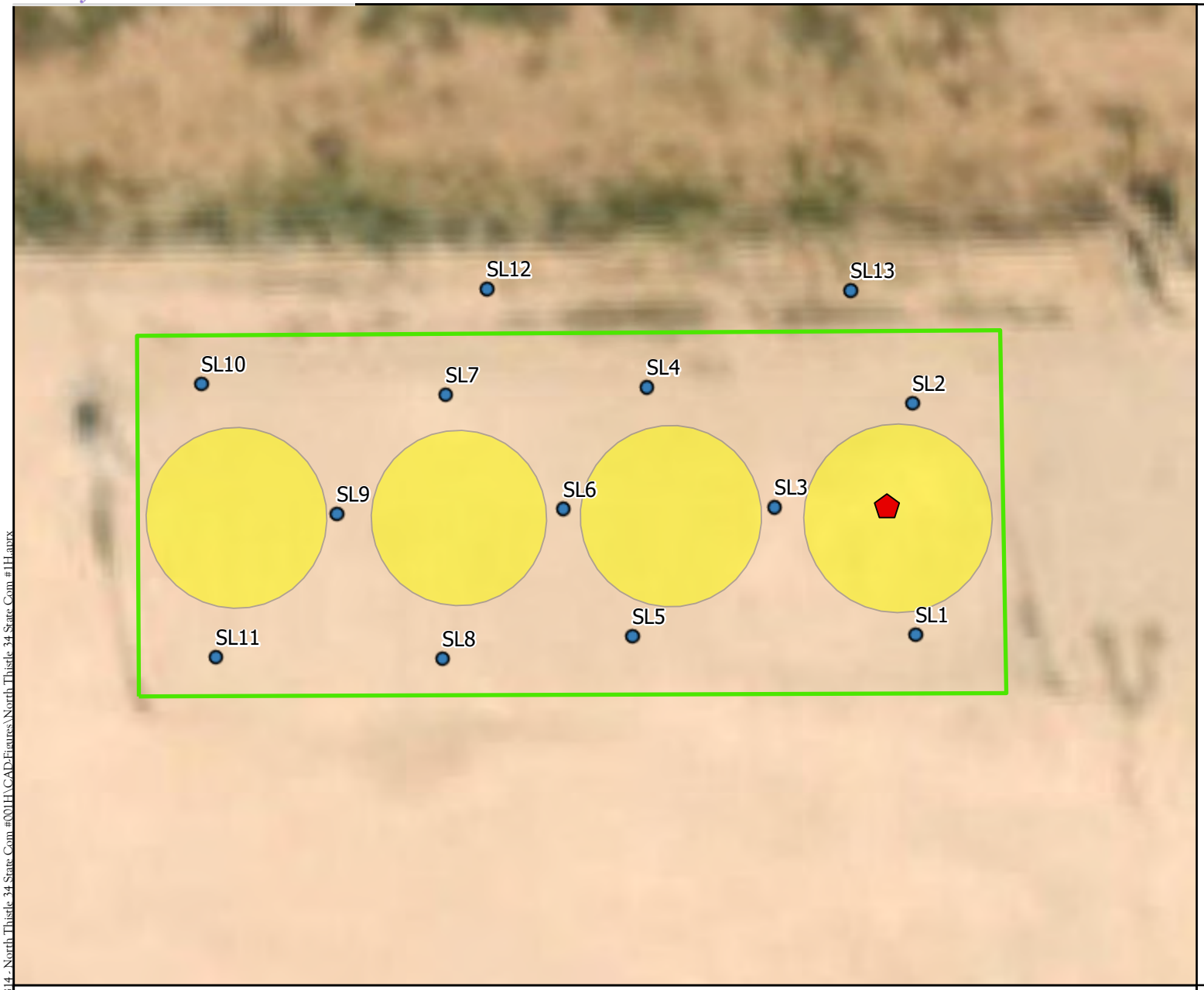

Legend

- Prior Containment
- Prior Tank Locations
- Soil Samples
- Point of Release

N

0 5 10 20 30

Feet

Site and Sample Location Map

North Thistle 34 State Com #1H - Devon Energy Production Company

UL: M S: 34 T: 22S R: 33E Lea County, New Mexico

Figure 3

P:\5-Devon MSA 2020 (5E29133)\FG14 - North Thistle 34 State Com #001H\CAD-Figures\North Thistle 34 State Com #1H.aprx

Date Saved: 6/29/2020

Revisions

By: Date: Descr:

By: Date: Descr:

Drawn Lynn A. Acosta

Date 7/8/2020

Checked

Approved

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

Table 2:
NMOCD Closure Criteria

Devon Energ Production Company
North Thistle 34 State Com #1H
1RP-4302

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	NA	New Mexico State Office of the Engineer
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	NA	USGS Topographic Map
Hortizontal Distance to Nearest Significant Watercourse (ft)	6,311	Intermittent Stream

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:
Summary of Sample Results

Devon Energy Production Corporation
North Thistle 34 State Com 1H
1RP-4302

Sample ID	Sample Date	Depth (feet bgs)	Proposed Action/ Action Taken	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	GRO + DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria				50	10					100	600
SL1	5/27/2020	Surface	In-Situ	<0.213	<0.024	<4.7	<9.5	<14.2	<47	<61.2	<60
SL2	5/27/2020	Surface	In-Situ	<0.217	<0.024	<4.8	<9.9	<14.7	<50	<64.7	<60
SL3	5/27/2020	Surface	In-Situ	<0.222	<0.025	<4.9	<9.4	<14.3	<47	<61.3	<60
SL4	5/27/2020	Surface	In-Situ	<0.208	<0.023	<4.6	<9.7	<14.3	<47	<61.3	<60
SL5	5/27/2020	Surface	In-Situ	<0.222	<0.025	<4.9	<9.5	<14.4	<47	<61.4	<60
SL6	5/27/2020	Surface	In-Situ	<0.224	<0.025	<5.0	<9.6	<14.6	<48	<62.6	180
SL7	5/27/2020	Surface	In-Situ	<0.221	<0.025	<4.9	<9.6	<14.5	<48	<62.5	<60
SL8	5/27/2020	Surface	In-Situ	<0.224	<0.025	<5.0	<9.6	<14.6	<48	<62.6	<60
SL9	5/27/2020	Surface	In-Situ	<0.221	<0.025	<4.9	<9.8	<14.7	<49	<63.7	<60
SL10	5/27/2020	Surface	In-Situ	<0.217	<0.024	<4.8	<9.8	<14.6	<49	<63.6	<60
SL11	5/27/2020	Surface	In-Situ	<0.215	<0.024	<4.8	<9.6	<14.4	<48	<62.4	<60
SL12	5/27/2020	Surface	In-Situ	<0.224	<0.025	<5.0	<9.4	<14.4	<47	<61.4	<60
SL13	5/27/2020	Surface	In-Situ	<0.221	<0.025	<4.9	9.6	9.6	59	68.6	<60

"--" = Not Analyzed

SMA #

APPENDIX A

FORM C141

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

State of New Mexico
Energy Minerals and Natural Resources

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

RECEIVED
By JKeyes at 7:34 am, Jun 06, 2016

Form C-141
Revised August 8, 2011

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

Accepted as Initial Only

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company Devon Energy Production Company	**Contact** Randy Gladden, Production Foreman
Address 6488 Seven Rivers Hwy Artesia, NM 88210	**Telephone No.** 575-513-9463
Facility Name North Thistle 34 State Com 1H	**Facility Type** Oil

Surface Owner State	**Mineral Owner** State	**API No** 30-025-42465

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	34	22S	33E	330	South	435	West	Lea

Latitude: 32.341787316 **Longitude:** -103.56725354

NATURE OF RELEASE

Type of Release Spill Produced water	**Volume of Release** 725 BBLS	**Volume Recovered** 725 BBLS
Source of Release Water tanks	**Date and Hour of Occurrence** 5/31/2016 @ 10:30pm	**Date and Hour of Discovery** 5/31/2016 @ 10:30pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** OCD-Jamie Keyes BLM Shelly Tucker	
By Whom? Hubert Perry, Production Foreman & David Simmons Asst. Production Foreman	**Date and Hour** OCD- 5/31/16 @ 10:35pm BLM- 5/31/16 @ 10:35pm	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse** N/A	

If a Watercourse was Impacted, Describe Fully.* N/A

Describe Cause of Problem and Remedial Action Taken.*
Lightning struck a group of produced water tanks, resulting in damage which caused a produced water release. The well was immediately shut in and all valves on both tubing and casing at well head were closed. All fluid dumps on separators were closed and electrical power was shut down. Clean up and repairs planned.

Describe Area Affected and Cleanup Action Taken.*
725 BBLS of produced water was released from three water tanks into the surrounding lined containment. Approximately 725 BBLS produced water was released into the lined containment. None of the released fluid left pad. The liner was checked for holes. No holes were found in the liner. Vacuum truck recovered 725 BBLS of produced water.

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: Sarah Gallegos-Troublefield	OIL CONSERVATION DIVISION	
Printed Name: Sarah Gallegos-Troublefield	Approved by Environmental Specialist:	
Title: Field Admin Support	Approval Date: 06/06/2016	Expiration Date: 08/06/2016
E-mail Address: Sarah.Gallegos-Troublefield@dvn.com	Conditions of Approval: Discrete samples only. Delineate and remediate per NMOCD guidelines.	Attached ☐ 1RP 4302
Date:6/1/2016 Phone: 575.748.1864		

* Attach Additional Sheets If Necessary

nJXK1615827006
pJXK1615827135

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	nJXK1615827006
District RP	1RP-4302
Facility ID	
Application ID	pJXK1615827135

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?	<50 (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

State of New Mexico
Oil Conservation Division

Incident ID	nJXK1615827006
District RP	1RP-4302
Facility ID	
Application ID	pJXK1615827135

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.

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: 7/13/2020

email: tom.bynum@dvn.com Telephone: 575-748-0176

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nJXK1615827006
District RP	1RP-4302
Facility ID	
Application ID	pJXK1615827135

Remediation Plan

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

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

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

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

☐ Extents of contamination must be fully delineated.

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

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

Printed Name: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 7/13/2020

email: tom.bynum@dvn.com Telephone: 575-748-0176

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nJXK1615827006
District RP	1RP-4302
Facility ID	
Application ID	pJXK1615827135

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: 7/13/2020

email: tom.bynum@dvn.com Telephone: 575-748-0176

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: 10/28/2022

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

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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 634816 **Northing (Y):** 3579236 **Radius:** 3800

6/29/20 3:54 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

APPENDIX C
SAMPLING PROTOCOL & FIELD NOTES

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

Sampling Protocol

Representatives from SMA chose the Judgmental Sampling Method as described in EPA's Final Sampling Guidance for SW-846, 2002 to adequately quantify contaminant concentrations on the North Thistle 34 State Com #1H Location. The utility of this particular method functions on the sufficient knowledge of the contaminant, which we possess. This design is also useful when identifying the composition of a release, which we have documented. In addition, this sampling design was chosen for this project because of the locations uniform soil type, and the several operational considerations (such as the liner within the battery and the construction of a new facility) that precluded the implementation of a different statistical design.

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 thirteen (13) 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.

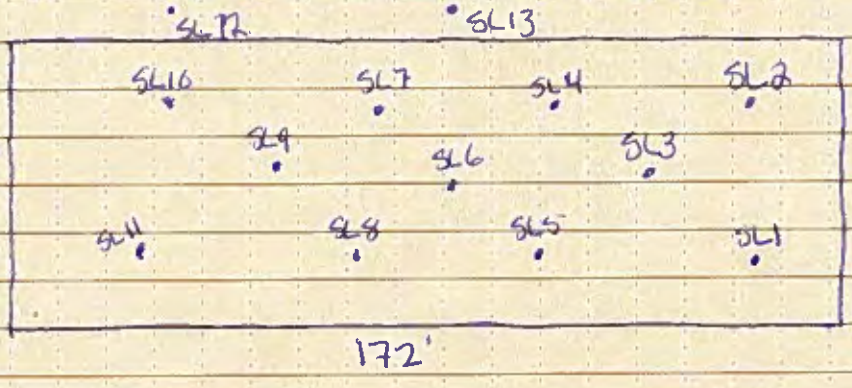
Sampling Analysis Field Quality Assurance Procedures

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.

5/8/20 IN Thistle #34" DVN Acosta

- Arrived on site 1230
- Location has two RP's, which are back log
- Will start with IRP-4302
  - Which is tank battery Struck wl lightning. Tank battery is no longer there.
  - Will Sample Soil throughout ~~the~~ where LH the Tank battery used to be. There is still somewhat a imprint of Tank battery. Imprint of TB measured 172 x 60 feet



  - Packed all samples. Met skip on location to deliver Samples.
- Began to work on IRP-4488.
  - IRP-4488 is a Stuffing Box leak. Spill occured to the norm of well head on pad and also on pasture.
- Began to collect Samples throughout North of well head.
  - A total of nine (9) Samples were collected on pad. L1-L9
- Began to collect Samples throughout pasture on norm end.
  - A total of ~~(10)~~ (8) ~~ten~~ eight LH Samples collected. L10-L18
- Packed Samples and gave to Skip taber (Halliburton rep)
- left Site (4:15)
- arrived @ office.

APPENDIX D

LABORATORY ANALYTICAL REPORTS

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

June 08, 2020

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

RE: N Thistle 34 1RP 4302 OrderNo.: 2005B80

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 13 sample(s) on 5/28/2020 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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL1
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:44:00 PM
Lab ID: 2005B80-001 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 11:24:54 AM	52848
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/30/2020 5:19:54 PM	52759
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/30/2020 5:19:54 PM	52759
Surr: DNOP	37.2	55.1-146	S	%Rec	1	5/30/2020 5:19:54 PM	52759
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/30/2020 12:11:58 AM	52747
Surr: BFB	81.1	66.6-105		%Rec	1	5/30/2020 12:11:58 AM	52747
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/30/2020 12:11:58 AM	52747
Toluene	ND	0.047		mg/Kg	1	5/30/2020 12:11:58 AM	52747
Ethylbenzene	ND	0.047		mg/Kg	1	5/30/2020 12:11:58 AM	52747
Xylenes, Total	ND	0.095		mg/Kg	1	5/30/2020 12:11:58 AM	52747
Surr: 4-Bromofluorobenzene	94.0	80-120		%Rec	1	5/30/2020 12:11:58 AM	52747

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL2
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:45:00 PM
Lab ID: 2005B80-002 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 11:37:15 AM	52848
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/30/2020 5:44:27 PM	52759
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/30/2020 5:44:27 PM	52759
Surr: DNOP	53.8	55.1-146	S	%Rec	1	5/30/2020 5:44:27 PM	52759
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/30/2020 12:35:34 AM	52747
Surr: BFB	82.2	66.6-105		%Rec	1	5/30/2020 12:35:34 AM	52747
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/30/2020 12:35:34 AM	52747
Toluene	ND	0.048		mg/Kg	1	5/30/2020 12:35:34 AM	52747
Ethylbenzene	ND	0.048		mg/Kg	1	5/30/2020 12:35:34 AM	52747
Xylenes, Total	ND	0.097		mg/Kg	1	5/30/2020 12:35:34 AM	52747
Surr: 4-Bromofluorobenzene	95.7	80-120		%Rec	1	5/30/2020 12:35:34 AM	52747

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

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

Analytical Report
Lab Order **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL3
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:47:00 PM
Lab ID: 2005B80-003 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 11:49:36 AM	52848
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/30/2020 6:08:50 PM	52759
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/30/2020 6:08:50 PM	52759
Surr: DNOP	34.5	55.1-146	S	%Rec	1	5/30/2020 6:08:50 PM	52759
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/30/2020 12:59:09 AM	52747
Surr: BFB	85.1	66.6-105		%Rec	1	5/30/2020 12:59:09 AM	52747
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/30/2020 12:59:09 AM	52747
Toluene	ND	0.049		mg/Kg	1	5/30/2020 12:59:09 AM	52747
Ethylbenzene	ND	0.049		mg/Kg	1	5/30/2020 12:59:09 AM	52747
Xylenes, Total	ND	0.099		mg/Kg	1	5/30/2020 12:59:09 AM	52747
Surr: 4-Bromofluorobenzene	98.9	80-120		%Rec	1	5/30/2020 12:59:09 AM	52747

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL4
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:48:00 PM
Lab ID: 2005B80-004 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 12:01:57 PM	52848
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/30/2020 6:33:17 PM	52759
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/30/2020 6:33:17 PM	52759
Surr: DNOP	28.9	55.1-146	S	%Rec	1	5/30/2020 6:33:17 PM	52759
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/30/2020 1:22:28 AM	52747
Surr: BFB	83.6	66.6-105		%Rec	1	5/30/2020 1:22:28 AM	52747
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	5/30/2020 1:22:28 AM	52747
Toluene	ND	0.046		mg/Kg	1	5/30/2020 1:22:28 AM	52747
Ethylbenzene	ND	0.046		mg/Kg	1	5/30/2020 1:22:28 AM	52747
Xylenes, Total	ND	0.093		mg/Kg	1	5/30/2020 1:22:28 AM	52747
Surr: 4-Bromofluorobenzene	97.3	80-120		%Rec	1	5/30/2020 1:22:28 AM	52747

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL5
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:50:00 PM
Lab ID: 2005B80-005 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 12:14:18 PM	52848
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/3/2020 9:38:50 AM	52849
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/3/2020 9:38:50 AM	52849
Surr: DNOP	84.9	55.1-146		%Rec	1	6/3/2020 9:38:50 AM	52849
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/30/2020 1:45:52 AM	52747
Surr: BFB	81.7	66.6-105		%Rec	1	5/30/2020 1:45:52 AM	52747
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/30/2020 1:45:52 AM	52747
Toluene	ND	0.049		mg/Kg	1	5/30/2020 1:45:52 AM	52747
Ethylbenzene	ND	0.049		mg/Kg	1	5/30/2020 1:45:52 AM	52747
Xylenes, Total	ND	0.099		mg/Kg	1	5/30/2020 1:45:52 AM	52747
Surr: 4-Bromofluorobenzene	95.6	80-120		%Rec	1	5/30/2020 1:45:52 AM	52747

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL6
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:51:00 PM
Lab ID: 2005B80-006 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	180	60		mg/Kg	20	6/3/2020 12:51:18 PM	52848
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/29/2020 6:21:13 PM	52754
Surr: BFB	100	70-130		%Rec	1	5/29/2020 6:21:13 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/3/2020 10:02:34 AM	52849
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/3/2020 10:02:34 AM	52849
Surr: DNOP	88.0	55.1-146		%Rec	1	6/3/2020 10:02:34 AM	52849
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/29/2020 6:21:13 PM	52754
Toluene	ND	0.050		mg/Kg	1	5/29/2020 6:21:13 PM	52754
Ethylbenzene	ND	0.050		mg/Kg	1	5/29/2020 6:21:13 PM	52754
Xylenes, Total	ND	0.099		mg/Kg	1	5/29/2020 6:21:13 PM	52754
Surr: 1,2-Dichloroethane-d4	99.1	70-130		%Rec	1	5/29/2020 6:21:13 PM	52754
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	5/29/2020 6:21:13 PM	52754
Surr: Dibromofluoromethane	100	70-130		%Rec	1	5/29/2020 6:21:13 PM	52754
Surr: Toluene-d8	100	70-130		%Rec	1	5/29/2020 6:21:13 PM	52754

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL7
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:52:00 PM
Lab ID: 2005B80-007 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 1:03:38 PM	52848
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/29/2020 7:47:28 PM	52754
Surr: BFB	94.4	70-130		%Rec	1	5/29/2020 7:47:28 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/3/2020 10:26:28 AM	52849
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/3/2020 10:26:28 AM	52849
Surr: DNOP	83.6	55.1-146		%Rec	1	6/3/2020 10:26:28 AM	52849
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/29/2020 7:47:28 PM	52754
Toluene	ND	0.049		mg/Kg	1	5/29/2020 7:47:28 PM	52754
Ethylbenzene	ND	0.049		mg/Kg	1	5/29/2020 7:47:28 PM	52754
Xylenes, Total	ND	0.098		mg/Kg	1	5/29/2020 7:47:28 PM	52754
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%Rec	1	5/29/2020 7:47:28 PM	52754
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	5/29/2020 7:47:28 PM	52754
Surr: Dibromofluoromethane	101	70-130		%Rec	1	5/29/2020 7:47:28 PM	52754
Surr: Toluene-d8	101	70-130		%Rec	1	5/29/2020 7:47:28 PM	52754

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

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

Analytical Report
Lab Order **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL8
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:53:00 PM
Lab ID: 2005B80-008 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 1:15:58 PM	52848
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/29/2020 9:13:03 PM	52754
Surr: BFB	99.3	70-130		%Rec	1	5/29/2020 9:13:03 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/3/2020 10:50:23 AM	52849
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/3/2020 10:50:23 AM	52849
Surr: DNOP	73.8	55.1-146		%Rec	1	6/3/2020 10:50:23 AM	52849
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/29/2020 9:13:03 PM	52754
Toluene	ND	0.050		mg/Kg	1	5/29/2020 9:13:03 PM	52754
Ethylbenzene	ND	0.050		mg/Kg	1	5/29/2020 9:13:03 PM	52754
Xylenes, Total	ND	0.099		mg/Kg	1	5/29/2020 9:13:03 PM	52754
Surr: 1,2-Dichloroethane-d4	94.6	70-130		%Rec	1	5/29/2020 9:13:03 PM	52754
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	5/29/2020 9:13:03 PM	52754
Surr: Dibromofluoromethane	102	70-130		%Rec	1	5/29/2020 9:13:03 PM	52754
Surr: Toluene-d8	101	70-130		%Rec	1	5/29/2020 9:13:03 PM	52754

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL9
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:54:00 PM
Lab ID: 2005B80-009 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 1:28:20 PM	52848
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/29/2020 9:41:31 PM	52754
Surr: BFB	97.3	70-130		%Rec	1	5/29/2020 9:41:31 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/3/2020 11:14:14 AM	52849
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/3/2020 11:14:14 AM	52849
Surr: DNOP	80.5	55.1-146		%Rec	1	6/3/2020 11:14:14 AM	52849
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/29/2020 9:41:31 PM	52754
Toluene	ND	0.049		mg/Kg	1	5/29/2020 9:41:31 PM	52754
Ethylbenzene	ND	0.049		mg/Kg	1	5/29/2020 9:41:31 PM	52754
Xylenes, Total	ND	0.098		mg/Kg	1	5/29/2020 9:41:31 PM	52754
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%Rec	1	5/29/2020 9:41:31 PM	52754
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	5/29/2020 9:41:31 PM	52754
Surr: Dibromofluoromethane	103	70-130		%Rec	1	5/29/2020 9:41:31 PM	52754
Surr: Toluene-d8	96.8	70-130		%Rec	1	5/29/2020 9:41:31 PM	52754

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL10
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:57:00 PM
Lab ID: 2005B80-010 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	6/3/2020 1:40:41 PM	52848
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/29/2020 10:09:57 PM	52754
Surr: BFB	96.9	70-130		%Rec	1	5/29/2020 10:09:57 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/3/2020 11:38:06 AM	52849
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/3/2020 11:38:06 AM	52849
Surr: DNOP	80.4	55.1-146		%Rec	1	6/3/2020 11:38:06 AM	52849
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/29/2020 10:09:57 PM	52754
Toluene	ND	0.048		mg/Kg	1	5/29/2020 10:09:57 PM	52754
Ethylbenzene	ND	0.048		mg/Kg	1	5/29/2020 10:09:57 PM	52754
Xylenes, Total	ND	0.097		mg/Kg	1	5/29/2020 10:09:57 PM	52754
Surr: 1,2-Dichloroethane-d4	96.5	70-130		%Rec	1	5/29/2020 10:09:57 PM	52754
Surr: 4-Bromofluorobenzene	95.5	70-130		%Rec	1	5/29/2020 10:09:57 PM	52754
Surr: Dibromofluoromethane	98.7	70-130		%Rec	1	5/29/2020 10:09:57 PM	52754
Surr: Toluene-d8	94.4	70-130		%Rec	1	5/29/2020 10:09:57 PM	52754

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL11
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 12:58:00 PM
Lab ID: 2005B80-011 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	6/3/2020 11:18:46 AM	52850
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/29/2020 10:38:30 PM	52754
Surr: BFB	92.3	70-130		%Rec	1	5/29/2020 10:38:30 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/30/2020 10:12:17 PM	52777
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/30/2020 10:12:17 PM	52777
Surr: DNOP	48.8	55.1-146	S	%Rec	1	5/30/2020 10:12:17 PM	52777
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	5/29/2020 10:38:30 PM	52754
Toluene	ND	0.048		mg/Kg	1	5/29/2020 10:38:30 PM	52754
Ethylbenzene	ND	0.048		mg/Kg	1	5/29/2020 10:38:30 PM	52754
Xylenes, Total	ND	0.095		mg/Kg	1	5/29/2020 10:38:30 PM	52754
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	5/29/2020 10:38:30 PM	52754
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	5/29/2020 10:38:30 PM	52754
Surr: Dibromofluoromethane	106	70-130		%Rec	1	5/29/2020 10:38:30 PM	52754
Surr: Toluene-d8	95.6	70-130		%Rec	1	5/29/2020 10:38:30 PM	52754

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL12
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 1:00:00 PM
Lab ID: 2005B80-012 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	6/3/2020 11:56:00 AM	52850
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/29/2020 11:06:57 PM	52754
Surr: BFB	97.5	70-130		%Rec	1	5/29/2020 11:06:57 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/30/2020 11:25:18 PM	52777
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/30/2020 11:25:18 PM	52777
Surr: DNOP	43.2	55.1-146	S	%Rec	1	5/30/2020 11:25:18 PM	52777
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/29/2020 11:06:57 PM	52754
Toluene	ND	0.050		mg/Kg	1	5/29/2020 11:06:57 PM	52754
Ethylbenzene	ND	0.050		mg/Kg	1	5/29/2020 11:06:57 PM	52754
Xylenes, Total	ND	0.099		mg/Kg	1	5/29/2020 11:06:57 PM	52754
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	5/29/2020 11:06:57 PM	52754
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	5/29/2020 11:06:57 PM	52754
Surr: Dibromofluoromethane	108	70-130		%Rec	1	5/29/2020 11:06:57 PM	52754
Surr: Toluene-d8	101	70-130		%Rec	1	5/29/2020 11:06:57 PM	52754

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 **2005B80**
Date Reported: **6/8/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SL13
Project: N Thistle 34 1RP 4302
Collection Date: 5/27/2020 1:02:00 PM
Lab ID: 2005B80-013 **Matrix:** SOIL **Received Date:** 5/28/2020 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	6/3/2020 12:08:25 PM	52850
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/29/2020 11:35:25 PM	52754
Surr: BFB	98.7	70-130		%Rec	1	5/29/2020 11:35:25 PM	52754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	9.6	9.3		mg/Kg	1	5/30/2020 11:49:33 PM	52777
Motor Oil Range Organics (MRO)	59	47		mg/Kg	1	5/30/2020 11:49:33 PM	52777
Surr: DNOP	47.7	55.1-146	S	%Rec	1	5/30/2020 11:49:33 PM	52777
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/29/2020 11:35:25 PM	52754
Toluene	ND	0.049		mg/Kg	1	5/29/2020 11:35:25 PM	52754
Ethylbenzene	ND	0.049		mg/Kg	1	5/29/2020 11:35:25 PM	52754
Xylenes, Total	ND	0.098		mg/Kg	1	5/29/2020 11:35:25 PM	52754
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%Rec	1	5/29/2020 11:35:25 PM	52754
Surr: 4-Bromofluorobenzene	98.4	70-130		%Rec	1	5/29/2020 11:35:25 PM	52754
Surr: Dibromofluoromethane	104	70-130		%Rec	1	5/29/2020 11:35:25 PM	52754
Surr: Toluene-d8	97.4	70-130		%Rec	1	5/29/2020 11:35:25 PM	52754

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#: **2005B80**

08-Jun-20

Client: Souder, Miller & Associates

Project: N Thistle 34 1RP 4302

Sample ID: **MB-52850** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **52850** RunNo: **69377**

Prep Date: **6/3/2020** Analysis Date: **6/3/2020** SeqNo: **2405931** Units: **mg/Kg**

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

Sample ID: **LCS-52850** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **52850** RunNo: **69377**

Prep Date: **6/3/2020** Analysis Date: **6/3/2020** SeqNo: **2405932** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Sample ID: **MB-52848** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **52848** RunNo: **69354**

Prep Date: **6/3/2020** Analysis Date: **6/3/2020** SeqNo: **2406628** Units: **mg/Kg**

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

Sample ID: **LCS-52848** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **52848** RunNo: **69354**

Prep Date: **6/3/2020** Analysis Date: **6/3/2020** SeqNo: **2406629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	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#: **2005B80**
08-Jun-20

Client: Souder, Miller & Associates
Project: N Thistle 34 1RP 4302

Sample ID: **LCS-52759** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **52759** RunNo: **69267**
Prep Date: **5/29/2020** Analysis Date: **5/30/2020** SeqNo: **2400758** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.2	70	130			
Surr: DNOP	5.5		5.000		111	55.1	146			

Sample ID: **MB-52759** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **52759** RunNo: **69267**
Prep Date: **5/29/2020** Analysis Date: **5/30/2020** SeqNo: **2400759** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		105	55.1	146			

Sample ID: **MB-52777** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **52777** RunNo: **69274**
Prep Date: **5/30/2020** Analysis Date: **5/31/2020** SeqNo: **2400972** 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	8.8		10.00		87.9	55.1	146			

Sample ID: **2005B80-011AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SL11** Batch ID: **52777** RunNo: **69267**
Prep Date: **5/30/2020** Analysis Date: **5/30/2020** SeqNo: **2400974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.4	46.82	8.683	76.0	47.4	136			
Surr: DNOP	1.5		4.682		32.6	55.1	146			S

Sample ID: **2005B80-011AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SL11** Batch ID: **52777** RunNo: **69267**
Prep Date: **5/30/2020** Analysis Date: **5/30/2020** SeqNo: **2400975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.7	48.36	8.683	76.1	47.4	136	2.68	43.4	
Surr: DNOP	1.5		4.836		31.7	55.1	146	0	0	S

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#: **2005B80**
08-Jun-20

Client: Souder, Miller & Associates
Project: N Thistle 34 1RP 4302

Sample ID: **LCS-52777** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **52777** RunNo: **69274**
Prep Date: **5/30/2020** Analysis Date: **5/31/2020** SeqNo: **2401275** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.9	70	130			
Surr: DNOP	4.1		5.000		81.9	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2005B80**
08-Jun-20

Client: Souder, Miller & Associates
Project: N Thistle 34 1RP 4302

Sample ID: **lcs-52747** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **52747** RunNo: **69259**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400554** 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	84.2	80	120			
Surr: BFB	940		1000		94.1	66.6	105			

Sample ID: **mb-52747** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **52747** RunNo: **69259**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400555** 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	870		1000		87.3	66.6	105			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2005B80**
08-Jun-20

Client: Souder, Miller & Associates
Project: N Thistle 34 1RP 4302

Sample ID: **LCS-52747** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **52747** RunNo: **69259**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400581** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.7	80	120			
Toluene	0.92	0.050	1.000	0	91.9	80	120			
Ethylbenzene	0.93	0.050	1.000	0	92.8	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.4	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: **mb-52747** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **52747** RunNo: **69259**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400582** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		99.7	80	120			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2005B80**
08-Jun-20

Client: Souder, Miller & Associates
Project: N Thistle 34 1RP 4302

Sample ID: **lcs-52754** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400344** 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	92.7	80	120			
Toluene	0.96	0.050	1.000	0	95.9	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.1	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.7	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Sample ID: **mb-52754** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400345** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.0	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.1	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.53		0.5000		107	70	130			

Sample ID: **2005b80-006ams** SampType: **MS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **SL6** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400392** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9690	0	96.5	71.1	115			
Toluene	0.99	0.048	0.9690	0	102	79.6	132			
Ethylbenzene	1.0	0.048	0.9690	0	105	83.8	134			
Xylenes, Total	3.1	0.097	2.907	0	107	82.4	132			
Surr: 1,2-Dichloroethane-d4	0.47		0.4845		96.2	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.4845		95.0	70	130			
Surr: Dibromofluoromethane	0.48		0.4845		98.4	70	130			
Surr: Toluene-d8	0.47		0.4845		97.5	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2005B80**
08-Jun-20

Client: Souder, Miller & Associates
Project: N Thistle 34 1RP 4302

Sample ID: **2005b80-006amsd** SampType: **MSD4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **SL6** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400393** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	0.9814	0	99.5	71.1	115	4.29	20	
Toluene	1.0	0.049	0.9814	0	106	79.6	132	4.81	20	
Ethylbenzene	1.1	0.049	0.9814	0	112	83.8	134	7.93	20	
Xylenes, Total	3.3	0.098	2.944	0	111	82.4	132	5.26	20	
Surr: 1,2-Dichloroethane-d4	0.48		0.4907		96.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.49		0.4907		99.2	70	130	0	0	
Surr: Dibromofluoromethane	0.50		0.4907		103	70	130	0	0	
Surr: Toluene-d8	0.49		0.4907		99.4	70	130	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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2005B80**
08-Jun-20

Client: Souder, Miller & Associates
Project: N Thistle 34 1RP 4302

Sample ID: **2005b80-007ams** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SL7** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400417** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	24.80	0	82.0	70	130			
Surr: BFB	500		496.0		101	70	130			

Sample ID: **2005b80-007amsd** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SL7** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400418** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.83	0	90.7	70	130	10.2	20	
Surr: BFB	490		496.5		98.2	70	130	0	0	

Sample ID: **lcs-52754** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400437** 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	83.1	70	130			
Surr: BFB	490		500.0		97.5	70	130			

Sample ID: **mb-52754** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **52754** RunNo: **69254**
Prep Date: **5/28/2020** Analysis Date: **5/29/2020** SeqNo: **2400438** 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	510		500.0		102	70	130			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **SMA-CARLSBAD** Work Order Number: **2005B80** RcptNo: **1**

Received By: **Emily Mocho** **5/28/2020 11:00:00 AM**

Completed By: **Desiree Dominguez** **5/28/2020 9:23:26 AM** DD

Reviewed By: DAD 5/28/20

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 ☐
	Samples not frozen.		
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: EM 5/28/20

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	-1.1	Good	Not Present			

Chain-of-Custody Record

Client: Souder Miller & Associates

Mailing Address: 201 S. Halagueno st
Carlsbad, NM, 88220

Phone #: (505) 516-7464

email or Fax#: Ashley.Maxwell@soudermiller.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

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

Project Name:
IN Thistle # 34 1RP-4302

Project #:
20841919

Project Manager:
Ashley Maxwell

Sampler: LAA

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): -0.9-0.2=+1.1 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2005380	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5/27/20	1244	Soil	SL1	4oz	NA	-001	X	X					X			
	1245		SL2			-002										
	1247		SL3			-003										
	1248		SL4			-004										
	1250		SL5			-005										
	1251		SL6			-006										
	1252		SL7			-007										
	1253		SL8			-008										
	1254		SL9			-009										
	1257		SL10			-010										
	1258		SL11			-011										
	1300		SL12			-012										
	1302		SL13			-013										

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					5/27/20	1430
5/27/20	1900		EKM	courier	5/28/20	1100

Remarks: Direct Bill: Devon Energy

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 9283

CONDITIONS

Operator:	OGRID:
Pima Environmental Services, LLC 5614 N Lovington Hwy Hobbs, NM 88240	329999
	Action Number: 9283
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	10/28/2022