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

November 2, 2020

#5E29071-BG7

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

SUBJECT: Remediation Closure Report for the Mile Marker 5 SWD #001Release (NRM2003446060), Eddy County, New Mexico

To Whom It May Concern:

On behalf of Judah Oil LLC (Judah), 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 Mile Marker 5 State SWD #001. The site is in Unit A, Section 10, Township 26S, Range 28E, Eddy 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	Mile Marker 5 SWD #001	Company	Judah Oil LLC
API Number	30-015-44818	Location	32.06260, -104.06726
Tracking Number	NRM2003446060		
Estimated Date of Release	11/12/2019	Date Reported to NMOCD	11/22/2019
Land Owner	State	Reported To	NMOCD, NMSLO
Source of Release	Faulty Gasket		
Released Volume	50 BBLS	Released Material	Produced Water
Recovered Volume	0 BBLS	Net Release	50 BBLS
NMOCD Closure Criteria	<50 feet to groundwater		
SMA Response Dates	8/4/2020, 10/07/2020		

1.0 Background

On November 12, 2019, a release was discovered at the Mile Marker 5 State SWD #001 site due to a gasket failure, causing a release of approximately 50 bbls of produced water. The part of the location where the release occurred was at the northern edge of the well pad where there is approximately eight feet of fill material placed to level the pad during construction. The well pad has a berm around the perimeter, which caused the fluid to build up on the north edge and then seep out into the pasture below. Initial response activities were conducted by the operator and included source elimination and site containment. Figures 1 and 2 illustrate the vicinity and site location. Figure 3 illustrates the release location. The C-141 forms are included in Appendix A.

2.0 Site Information and Closure Criteria

The Mile Marker 5 SWD #001 is an active storage facility located approximately 11 miles south of Malaga, New Mexico on State land at an elevation of approximately 2,986 feet above mean sea level (amsl).

Depth to Groundwater
Based upon New Mexico Office of the State Engineer (NMOSE) well water data (Appendix B), depth to groundwater in the area is estimated to be between 120 and 140 feet below grade surface (bgs).

Wellhead Protection Area
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.

Distance to Nearest Significant Watercourse
The nearest significant watercourse is a wetland , located approximately 3,600 feet to the southwest.

Table 2 demonstrates the Closure Criteria applicable to this location. 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.

Due to 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.

3.0 Release Characterization and Remediation Activities

On December 16, 2019, MMX personnel performed site delineation activities at the Mile Marker 5 State SWD #001 site. MMX collected initial soil samples around the release site and throughout the visibly stained area. The area(s) of visual impact was located partially within the boundary of the developed storage facility, and partially in the pasture.

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 three (3) sample locations (S1-S3) were investigated using a hand-auger, to depths up to one (1) foot bgs. A total of six (6) samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

As summarized in Table 3, results indicated that an area approximately 40 feet by 100 feet by 1 foot deep, impacting both the pad and pasture below the site.

October 4, 2020, SMA arrived on site to guide the excavation of contaminated soil in the pasture below the site. SMA guided the excavation activities by collecting soil samples for field screening. Samples were screened using the methods above. The walls and base were excavated until field screening results indicated that the NMOCD Closure Criteria would be met. NMOCD was notified on October 5, 2020 that closure samples were expected to be collected in two (2) business days.

On October 7, 2020, SMA conducted confirmation samples were collected from the walls and base of the excavation, which measured approximately 35 feet by 20 feet. The area representing sample location S3 was excavated to a depth of two (2) feet bgs. The area on the pad representing sample locations S1 and S2 was not excavated due to the proximity of surrounding equipment and the potential impact to the integrity of the containment berm surrounding the site.

Confirmation samples were comprised of five-point composites of the base (CS1-CS3) and walls (SW1-SW4). Each closure sample represents an area of less than 200 square feet, as required by 19.15.29.12.D(1) NMAC. Sample SW1 represents the northernmost area of the excavation, SW2 represents the easternmost area of the excavation, SW3 represents the southernmost area of the excavation and SW4 represents the westernmost area of the excavation.

A total of seven (7) 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 Hall Environmental Analysis Laboratory in Albuquerque, and Cardinal Laboratories in Hobbs, New Mexico (Appendix D).

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

4.0 Site Recommendations

As demonstrated in Table 3, closure samples from the excavated area meet the Closure Criteria of Table I of 19.15.29.12 NMAC. A deferral is requested for the impacted area on the location (S1 & S2), due to the proximity to the containment berm, where remediation activities would cause a major facility rework. As required, and demonstrated on Table 3 and Figure 3, the deferred area does not pose an imminent risk to human health, the environment, or groundwater.

Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours.

On behalf of Judah, SMA requests a of remediation activities on the impacted area of the active facility (northeastern corner, represented by samples S1 and S2) for Incident Number NRM2003446060.

5.0 Scope and Limitations

The scope of our services included: assessment sampling; verifying release stabilization; regulatory liaison; remediation; and preparing this 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 SMA Project Manager at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:

Ashley Maxwell
Project Manager

Shawna Chubbuck
Senior Scientist

REFERENCES:

New Mexico Office of the State Engineer (NMOSE) online water well database
https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed Click or tap to enter a date.

ATTACHMENTS:

Figures:

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

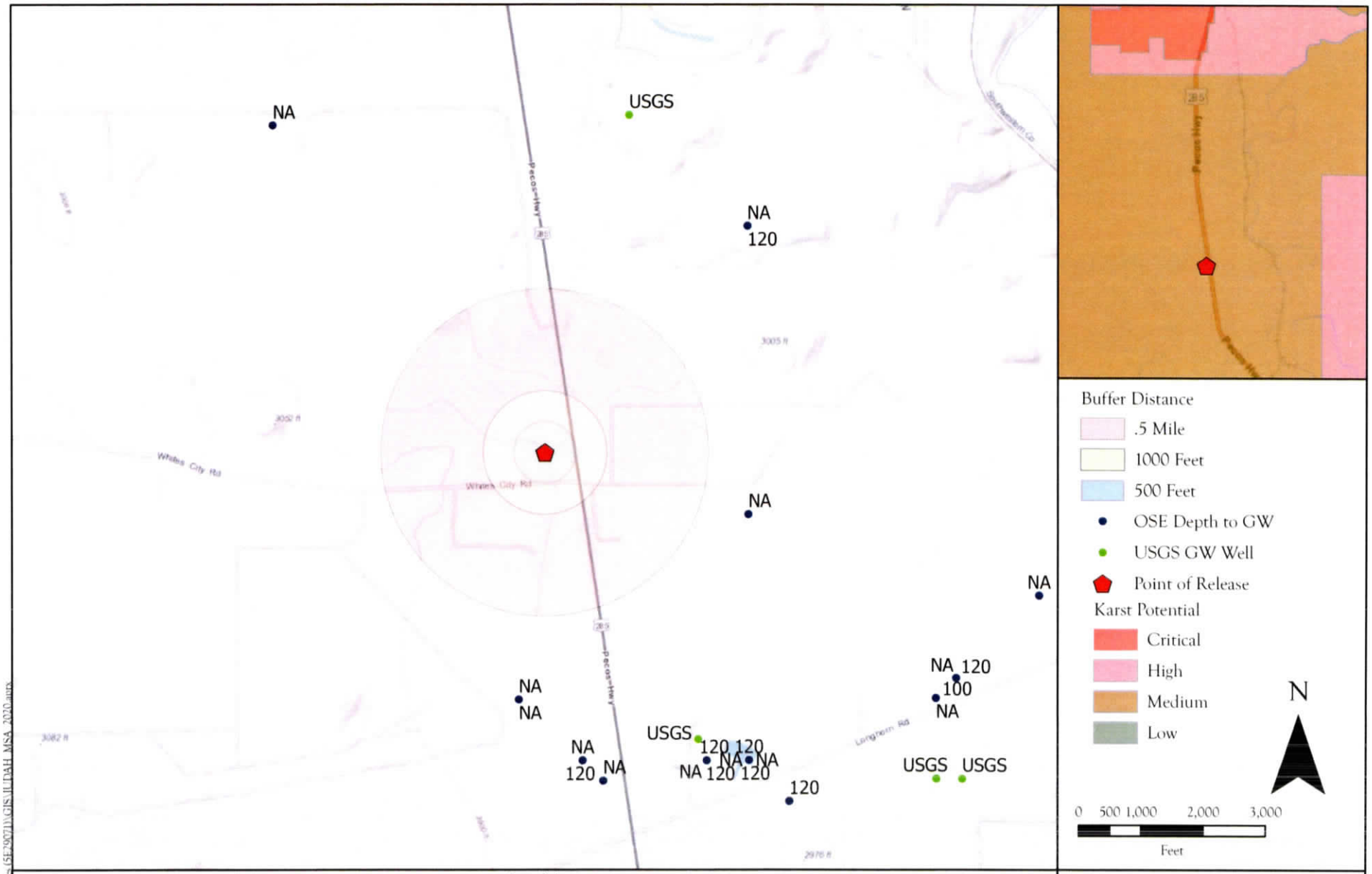
Tables:

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

Mile Marker 5 - Judah Oil LLC

32.0624924, -104.0757613 Eddy County, New Mexico

Figure 1

P:\5Judah 2020 MSA On Call Services (5F29071)\GIS\JUDAH_MSA_2020.aprx
Date Saved: 10/20/2020

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

Drawn Sebastian Orozco
Date 10/21/2020
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689.7040
Serving the Southwest & Rocky Mountains

Surface Water Protection Map
Mile Marker 5 - Judah Oil LLC
32.0624924, -104.0757613 Eddy County, New Mexico

Figure 2

P:\Judah, 2020 MSA On Call Services (5E29071)\GIS\JUDAH_MSA_2020.mxd
Date Saved: 10/20/2020

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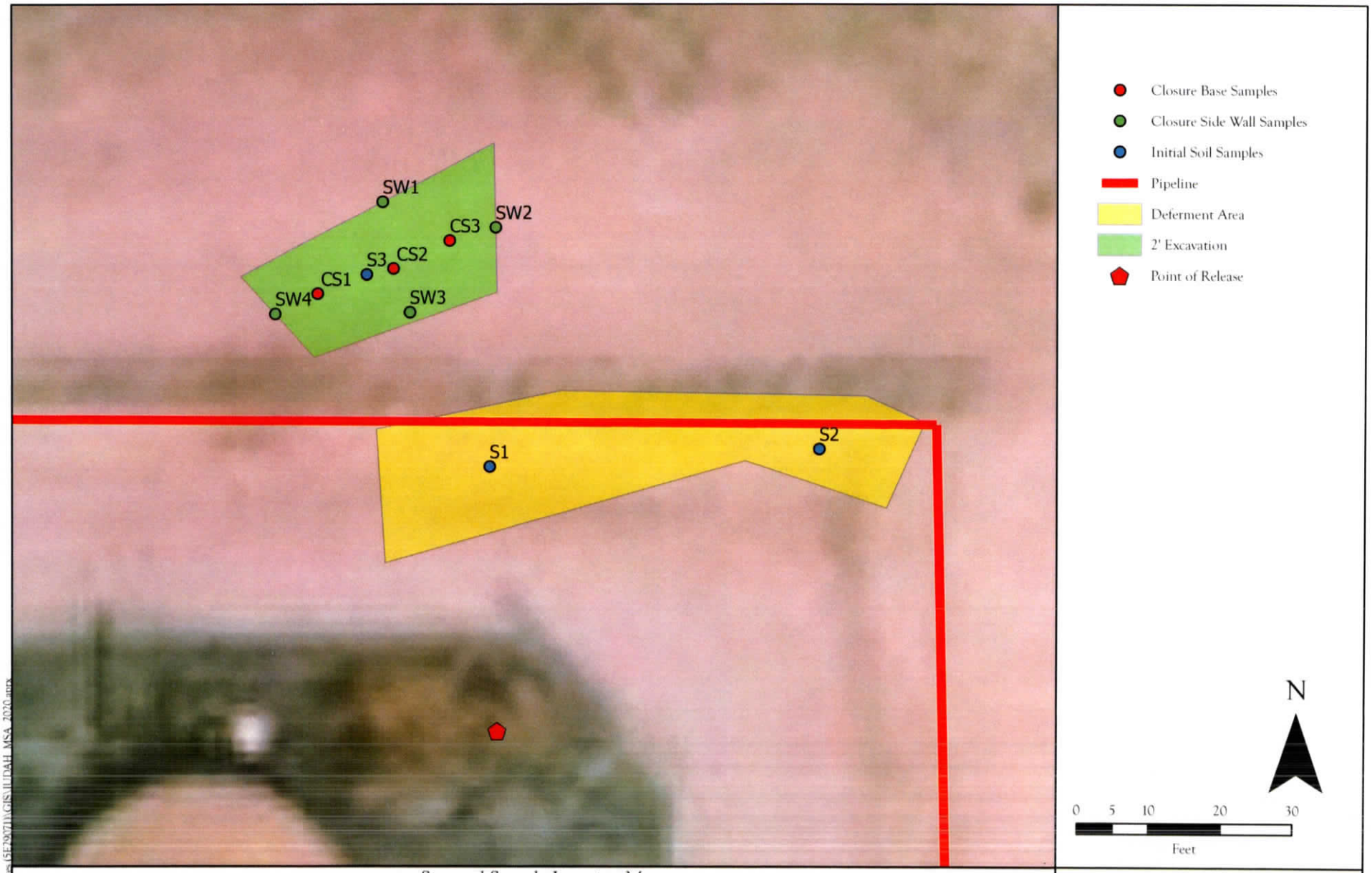

Site and Sample Location Map
Mile Marker 5 - Judah Oil LLC
32.0624924, -104.0757613 Eddy County, New Mexico

Figure 3

P:\Judah 2020 MSA On Call Service (5E29071)\GIS\JUDAH_MSA_2020.mxd
Date Saved: 10/20/2020

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

Drawn Sebastian Orozco
Date 10/21/2020
Checked
Approved

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TABLES

Table 2:
NMOCD Closure Criteria

Judah Oil LLC
Mile Marker 5 SWD #001

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	120-130	Office of the State Engineer (NMOSE)
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	-	-
Hortizontal Distance to Nearest Significant Watercourse (ft)	3,600	Wetland located to the southwest

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					
<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		600	100		50	10
<300' from an occupied permanent residence, school, hospital, institution or church?	**No**					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	No					
<100' from wetland?	No					
within area overlying a subsurface mine	No					
within an unstable area?	No (Med)					
within a 100-year floodplain?	No					

SMA #

Table 3:
Sample Results

Judah Oil LLC
Mile Marker 5 SWD #001

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				100	600
S1	12/16/2019	Surface	Deferment	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	13,800
		1	In-situ	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	<16.0
S2		Surface	Deferment	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	15,400
		1	In-situ	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	32
S3		Surface	Excavated	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	2,960
		1	In-situ	<0.300	<0.050	<10.0	<10.0	<10.0	<30.0	160
Closure Samples										
CS1	10/7/2020	2	In-situ	<0.222	<0.025	<4.9	<9.2	<46	<60.1	<59
CS2		2		<0.215	<0.024	<4.8	<9.7	<48	<62.5	<60
CS3		2		<0.220	<0.024	<4.9	<9.5	<47	<61.4	<60
SW1		0-2		<0.217	<0.024	<4.8	<9.2	<46	<60	<60
SW2		0-2		<0.225	<0.025	<5.0	<8.6	<43	<56.6	<60
SW3		0-2		<0.217	<0.024	<4.8	<9.1	<45	<58.9	<60
SW4		0-2		<0.211	<0.023	<4.7	<9.3	<47	<61	<60

"--" = Not Analyzed
BG: Background sample

APPENDIX A
FORM C141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NRM2003446060
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	Judah Oil	OGRID	245872
Contact Name	Blaise Campanella	Contact Telephone	(575) 748-5488
Contact email	judahoil@yahoo.com	Incident # *(assigned by OCD)*	
Contact mailing address	PO Box 568, Artesia, NM 88221		

Location of Release Source

Latitude 32.06260 Longitude -104.06726
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Mile Marker 5 State SWD Unloading Station	Site Type Battery
Date Release Discovered 11/12/2019 8:00 am	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
A	10	26S	28E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 50	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Release was due to a faulty gasket on a filter pot within the containment. The release occurred in the containment, pad, and in the pasture impacting an area measuring approximately 40' X 100'.

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State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? The release is greater than 25 barrels.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Immediate notification was made to Mike Bratcher by Blaise Campanella per phone voicemail on 11/12/19.

Initial Response

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

☒ The source of the release has been stopped.

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

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

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

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

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

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

Printed Name: James B. Campanella Title: Managing/Manager

Signature: Date: 11/22/19

email: judahoil@yahoo.com Telephone: (575) 748-4730

OCD Only

Received by: Ramona Marcus Date: 2/3/2020

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State of New Mexico
Oil Conservation Division

Incident ID	NMR2003446060
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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?	120'-140' (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.

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State of New Mexico
Oil Conservation Division

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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: Jamye B Campanella Title: Member / Manager
Signature: Date: 8-12-2020
email: judaho1@yahoo.com Telephone: 575-748-8730

OCD Only

Received by: Cristina Eads Date: 08/03/2020

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

Signature: Date: 10/01/2020

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State of New Mexico
Oil Conservation Division

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District RP	
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: James B Campanella Title: Member/Manager

Signature: Date: 11-2-2020

email: judahoil@yahoo.com Telephone: 575-748-4730

OCD Only

Received by: Cristina Eads Date: 11/03/2020

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

Closure Approved by: Date: 01/22/2021

Printed Name: Cristina Eads 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 02924		C	ED	1	3	2	11	26S	28E	589032	3547451*	1033			
C 02479		CUB	ED		4	4	10	26S	28E	587909	3546534*	1228	200		
C 02480		CUB	ED		4	4	10	26S	28E	587909	3546534*	1228	150		
C 02160 S9		CUB	ED	3	3	2	02	26S	28E	589020	3548868*	1480	300	120	180
C 02160 S5		CUB	ED	1	1	1	14	26S	28E	588225	3546237*	1528	300	120	180
C 02481		CUB	ED		1	1	14	26S	28E	588326	3546138*	1641	200		
C 02160 S3		CUB	ED	2	2	1	14	26S	28E	588834	3546241*	1707	300	120	180
C 02160 S4		CUB	ED	2	2	1	14	26S	28E	588834	3546241*	1707	300	120	180
C 02160 S		CUB	ED	1	1	2	14	26S	28E	589043	3546244*	1811	300	120	180
C 02160 S2		CUB	ED	1	1	2	14	26S	28E	589043	3546244*	1811	300	120	180
C 02160		CUB	ED	4	1	2	14	26S	28E	589243	3546044*	2089	300	120	180
C 02477		CUB	ED		1	1	03	26S	28E	586687	3549347*	2091	150		
C 04022 POD1		CUB	ED	4	4	2	15	26S	28E	588082	3545647	2108	220	175	45
C 02160 S6		CUB	ED	3	3	1	14	26S	28E	588232	3545635*	2128	300	120	180
C 01668		CUB	ED		3	3	12	26S	28E	589957	3546554*	2258	250	100	150
C 02160 S8		CUB	ED	2	3	3	12	26S	28E	590056	3546653*	2293	200	120	80
C 02894		C	ED	2	2	3	12	26S	28E	590458	3547061*	2511	240		

Average Depth to Water: **123 feet**
Minimum Depth: **100 feet**
Maximum Depth: **175 feet**

Record Count: 17

UTMNAD83 Radius Search (in meters):

Easting (X): 588044 **Northing (Y):** 3547754.92 **Radius:** 3500

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

12/4/19 2:04 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

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

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 320309104020401

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

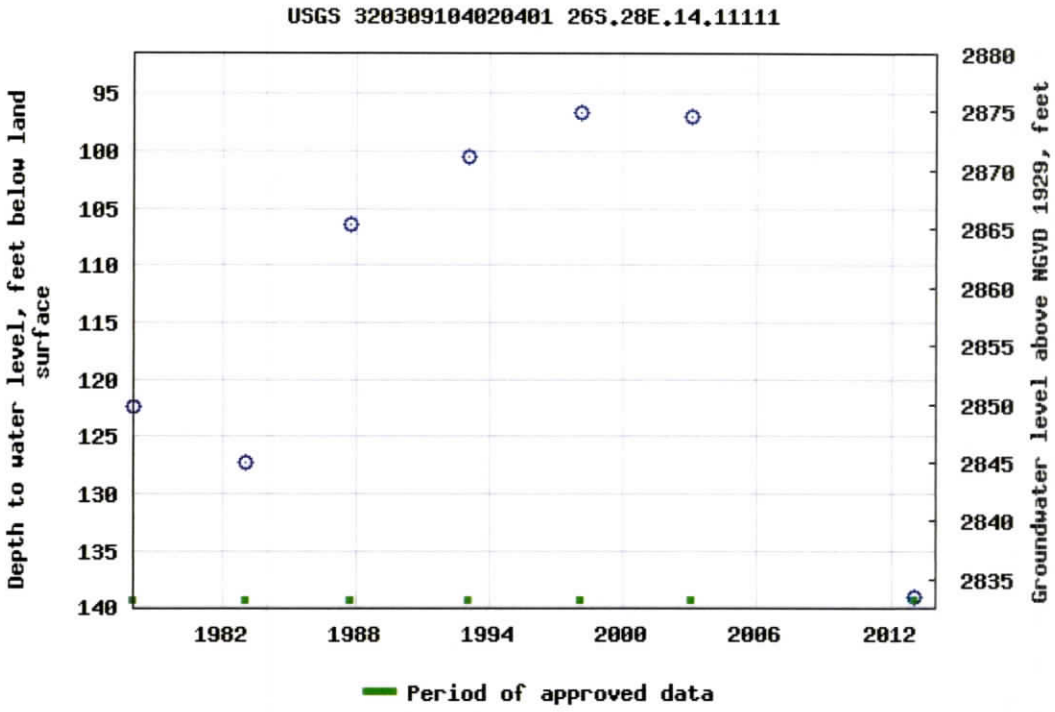
USGS 320309104020401 26S.28E.14.11111

Available data for this site Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°02'59.0", Longitude 104°03'58.7" NAD83
Land-surface elevation 2,972.00 feet above NGVD29
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

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



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

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

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

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2019-12-04 16:32:21 EST
0.62 0.51 nadww01

SUBJECT Mile Marker 5 State SWD PROJECT PAGE

CLIENT Mmx/Judah DATE 12/4 BY MRS

CHECKED BY

elev: 2982

USGS020401 190' 2835 147'

C02160 59	120	2987	2867	115	
C02160 55	120	2979	2859	123	
C040 22	175	2992	2817	165	120 - 140

APPENDIX C
SAMPLING PROTOCOL

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 and Cardinal Laboratories in Hobbs, 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.

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

October 14, 2020

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

RE: Mile Marker 5 OrderNo.: 2010418

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 7 sample(s) on 10/8/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2010418**
Date Reported: **10/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Mile Marker 5
Lab ID: 2010418-001 **Matrix:** SOIL

Client Sample ID: CS1
Collection Date: 10/7/2020 8:20:00 AM
Received Date: 10/8/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	59		mg/Kg	20	10/12/2020 10:20:21 PM	55789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/9/2020 11:39:48 AM	55726
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/9/2020 11:39:48 AM	55726
Surr: DNOP	115	30.4-154		%Rec	1	10/9/2020 11:39:48 AM	55726
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/9/2020 6:09:04 PM	55723
Surr: BFB	99.0	75.3-105		%Rec	1	10/9/2020 6:09:04 PM	55723
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	10/9/2020 6:09:04 PM	55723
Toluene	ND	0.049		mg/Kg	1	10/9/2020 6:09:04 PM	55723
Ethylbenzene	ND	0.049		mg/Kg	1	10/9/2020 6:09:04 PM	55723
Xylenes, Total	ND	0.099		mg/Kg	1	10/9/2020 6:09:04 PM	55723
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	10/9/2020 6:09:04 PM	55723

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 **2010418**
Date Reported: **10/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Mile Marker 5
Lab ID: 2010418-002 **Matrix:** SOIL

Client Sample ID: CS2
Collection Date: 10/7/2020 8:30:00 AM
Received Date: 10/8/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/12/2020 10:32:45 PM	55789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/9/2020 11:49:32 AM	55726
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/9/2020 11:49:32 AM	55726
Surr: DNOP	123	30.4-154		%Rec	1	10/9/2020 11:49:32 AM	55726
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/9/2020 6:32:27 PM	55723
Surr: BFB	96.3	75.3-105		%Rec	1	10/9/2020 6:32:27 PM	55723
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	10/9/2020 6:32:27 PM	55723
Toluene	ND	0.048		mg/Kg	1	10/9/2020 6:32:27 PM	55723
Ethylbenzene	ND	0.048		mg/Kg	1	10/9/2020 6:32:27 PM	55723
Xylenes, Total	ND	0.095		mg/Kg	1	10/9/2020 6:32:27 PM	55723
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	10/9/2020 6:32:27 PM	55723

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 **2010418**
Date Reported: **10/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Mile Marker 5
Lab ID: 2010418-003 **Matrix:** SOIL

Client Sample ID: CS3
Collection Date: 10/7/2020 8:40:00 AM
Received Date: 10/8/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/12/2020 10:45:09 PM	55789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/9/2020 11:59:12 AM	55726
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/9/2020 11:59:12 AM	55726
Surr: DNOP	112	30.4-154		%Rec	1	10/9/2020 11:59:12 AM	55726
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/9/2020 6:55:55 PM	55723
Surr: BFB	96.0	75.3-105		%Rec	1	10/9/2020 6:55:55 PM	55723
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	10/9/2020 6:55:55 PM	55723
Toluene	ND	0.049		mg/Kg	1	10/9/2020 6:55:55 PM	55723
Ethylbenzene	ND	0.049		mg/Kg	1	10/9/2020 6:55:55 PM	55723
Xylenes, Total	ND	0.098		mg/Kg	1	10/9/2020 6:55:55 PM	55723
Surr: 4-Bromofluorobenzene	98.2	80-120		%Rec	1	10/9/2020 6:55:55 PM	55723

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 **2010418**
Date Reported: **10/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Mile Marker 5
Lab ID: 2010418-004 **Matrix:** SOIL

Client Sample ID: SW1
Collection Date: 10/7/2020 8:50:00 AM
Received Date: 10/8/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/12/2020 10:57:33 PM	55789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/9/2020 12:08:59 PM	55726
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/9/2020 12:08:59 PM	55726
Surr: DNOP	89.1	30.4-154		%Rec	1	10/9/2020 12:08:59 PM	55726
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/9/2020 8:06:22 PM	55723
Surr: BFB	96.5	75.3-105		%Rec	1	10/9/2020 8:06:22 PM	55723
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	10/9/2020 8:06:22 PM	55723
Toluene	ND	0.048		mg/Kg	1	10/9/2020 8:06:22 PM	55723
Ethylbenzene	ND	0.048		mg/Kg	1	10/9/2020 8:06:22 PM	55723
Xylenes, Total	ND	0.097		mg/Kg	1	10/9/2020 8:06:22 PM	55723
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	10/9/2020 8:06:22 PM	55723

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

Analytical Report
Lab Order **2010418**
Date Reported: **10/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Mile Marker 5
Lab ID: 2010418-005 **Matrix:** SOIL

Client Sample ID: SW2
Collection Date: 10/7/2020 9:00:00 AM
Received Date: 10/8/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/12/2020 11:09:58 PM	55789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	10/9/2020 12:18:40 PM	55726
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	10/9/2020 12:18:40 PM	55726
Surr: DNOP	97.2	30.4-154		%Rec	1	10/9/2020 12:18:40 PM	55726
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/9/2020 8:29:51 PM	55723
Surr: BFB	97.7	75.3-105		%Rec	1	10/9/2020 8:29:51 PM	55723
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	10/9/2020 8:29:51 PM	55723
Toluene	ND	0.050		mg/Kg	1	10/9/2020 8:29:51 PM	55723
Ethylbenzene	ND	0.050		mg/Kg	1	10/9/2020 8:29:51 PM	55723
Xylenes, Total	ND	0.10		mg/Kg	1	10/9/2020 8:29:51 PM	55723
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	10/9/2020 8:29:51 PM	55723

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

Analytical Report
Lab Order **2010418**
Date Reported: **10/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Mile Marker 5
Lab ID: 2010418-006 **Matrix:** SOIL

Client Sample ID: SW3
Collection Date: 10/7/2020 9:10:00 AM
Received Date: 10/8/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/12/2020 11:22:22 PM	55789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	10/9/2020 12:28:27 PM	55726
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	10/9/2020 12:28:27 PM	55726
Surr: DNOP	93.0	30.4-154		%Rec	1	10/9/2020 12:28:27 PM	55726
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/9/2020 8:53:28 PM	55723
Surr: BFB	97.4	75.3-105		%Rec	1	10/9/2020 8:53:28 PM	55723
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	10/9/2020 8:53:28 PM	55723
Toluene	ND	0.048		mg/Kg	1	10/9/2020 8:53:28 PM	55723
Ethylbenzene	ND	0.048		mg/Kg	1	10/9/2020 8:53:28 PM	55723
Xylenes, Total	ND	0.097		mg/Kg	1	10/9/2020 8:53:28 PM	55723
Surr: 4-Bromofluorobenzene	98.9	80-120		%Rec	1	10/9/2020 8:53:28 PM	55723

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 **2010418**
Date Reported: **10/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: Mile Marker 5
Lab ID: 2010418-007 **Matrix:** SOIL

Client Sample ID: SW4
Collection Date: 10/7/2020 9:20:00 AM
Received Date: 10/8/2020 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/12/2020 11:34:46 PM	55789
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/9/2020 12:38:10 PM	55726
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/9/2020 12:38:10 PM	55726
Surr: DNOP	114	30.4-154		%Rec	1	10/9/2020 12:38:10 PM	55726
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/9/2020 9:17:08 PM	55723
Surr: BFB	97.5	75.3-105		%Rec	1	10/9/2020 9:17:08 PM	55723
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	10/9/2020 9:17:08 PM	55723
Toluene	ND	0.047		mg/Kg	1	10/9/2020 9:17:08 PM	55723
Ethylbenzene	ND	0.047		mg/Kg	1	10/9/2020 9:17:08 PM	55723
Xylenes, Total	ND	0.094		mg/Kg	1	10/9/2020 9:17:08 PM	55723
Surr: 4-Bromofluorobenzene	99.8	80-120		%Rec	1	10/9/2020 9:17:08 PM	55723

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#: **2010418**

14-Oct-20

Client: Souder, Miller & Associates

Project: Mile Marker 5

Sample ID: **MB-55789**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **55789**	RunNo: **72606**							
Prep Date: **10/12/2020**	Analysis Date: **10/12/2020**	SeqNo: **2549456**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-55789**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **55789**	RunNo: **72606**							
Prep Date: **10/12/2020**	Analysis Date: **10/12/2020**	SeqNo: **2549457**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.1	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#: **2010418**

14-Oct-20

Client: Souder, Miller & Associates

Project: Mile Marker 5

Sample ID: **MB-55726**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **55726**	RunNo: **72550**
Prep Date: **10/8/2020**	Analysis Date: **10/9/2020**	SeqNo: **2546808** 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	13		10.00		126	30.4	154			

Sample ID: **LCS-55726**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **55726**	RunNo: **72550**
Prep Date: **10/8/2020**	Analysis Date: **10/9/2020**	SeqNo: **2546810** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	70	130			
Surr: DNOP	6.2		5.000		123	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#: **2010418**

14-Oct-20

Client: Souder, Miller & Associates

Project: Mile Marker 5

Sample ID: **lcs-55723**	SampType: **LCS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **LCSS**	Batch ID: **55723**			RunNo: **72552**					
Prep Date: **10/8/2020**	Analysis Date: **10/9/2020**			SeqNo: **2546912**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.0	72.5	106			
Surr: BFB	1100		1000		111	75.3	105			S

Sample ID: **mb-55723**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **PBS**	Batch ID: **55723**			RunNo: **72552**					
Prep Date: **10/8/2020**	Analysis Date: **10/9/2020**			SeqNo: **2546914**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		98.2	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#: **2010418**

14-Oct-20

Client: Souder, Miller & Associates

Project: Mile Marker 5

Sample ID: **LCS-55723**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **55723**	RunNo: **72552**
Prep Date: **10/8/2020**	Analysis Date: **10/9/2020**	SeqNo: **2546954** 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	93.0	80	120			
Toluene	0.96	0.050	1.000	0	96.0	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.0	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

Sample ID: **mb-55723**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **55723**	RunNo: **72552**
Prep Date: **10/8/2020**	Analysis Date: **10/9/2020**	SeqNo: **2546956** 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		101	80	120			

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		

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: 2010418 | RcptNo: 1

Received By: **Desiree Dominguez** 10/8/2020 7:45:00 AM

Completed By: **Juan Rojas** 10/8/2020 8:16:35 AM

Reviewed By: JR 10/8/20

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 CMC 10/8/20

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good				

Chain-of-Custody Record

Client: SMA

Mailing Address: 201 S. Halaguena St.

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush 5 Day

Project Name: Mile Marker 5

Project #:

Project Manager: Ashley Maxwell

Sampler: SO

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 0.8 - 0.1 = 0.7 (°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. 2010418	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)
10/07/20	8:20	Soil	CS1	1-4oz	Cool	-001	X	X					X			
	8:30		CS2			-002										
	8:40		CS3			-003										
	8:50		SW1			-004										
	9:00		SW2			-005										
	9:10		SW3			-006										
	9:20		SW4			-007										

Date	Time	Relinquished by	Received by	Via	Date	Time
10/7/20	1200	Rebecca Dow				
10/7/20	1900			Courier	10/8/20	7.45

Remarks: Bill SMA

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.

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 26, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: MILE MARKER 5 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/18/19 10:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	12/18/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Soil
Project Name:	MILE MARKER 5 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 1 - SURFACE (H904208-01)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	1.93	96.5	2.00	5.88	
Toluene*	<0.050	0.050	12/20/2019	ND	1.90	94.9	2.00	6.14	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	1.92	95.8	2.00	7.11	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	5.59	93.1	6.00	6.92	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *102 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**13800**	16.0	12/20/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	220	110	200	1.43	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	217	108	200	0.193	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *106 %* *41-142*

Surrogate: 1-Chlorooctadecane *112 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	12/18/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Soil
Project Name:	MILE MARKER 5 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 1 - 1' (H904208-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	1.93	96.5	2.00	5.88	
Toluene*	<0.050	0.050	12/20/2019	ND	1.90	94.9	2.00	6.14	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	1.92	95.8	2.00	7.11	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	5.59	93.1	6.00	6.92	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *100 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/20/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	220	110	200	1.43	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	217	108	200	0.193	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *105 %* *41-142*

Surrogate: 1-Chlorooctadecane *109 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	12/18/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Soil
Project Name:	MILE MARKER 5 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 2 - SURFACE (H904208-09)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	1.93	96.5	2.00	5.88	
Toluene*	<0.050	0.050	12/20/2019	ND	1.90	94.9	2.00	6.14	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	1.92	95.8	2.00	7.11	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	5.59	93.1	6.00	6.92	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.2 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**15400**	16.0	12/20/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	220	110	200	1.43	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	217	108	200	0.193	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *107 %* *41-142*

Surrogate: 1-Chlorooctadecane *112 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	12/18/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Soil
Project Name:	MILE MARKER 5 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 2 - 1' (H904208-10)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	1.93	96.5	2.00	5.88	
Toluene*	<0.050	0.050	12/20/2019	ND	1.90	94.9	2.00	6.14	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	1.92	95.8	2.00	7.11	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	5.59	93.1	6.00	6.92	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID 99.3 % 73.3-129

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	12/20/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	12/18/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Soil
Project Name:	MILE MARKER 5 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 3 - SURFACE (H904208-17)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	2.04	102	2.00	1.79	
Toluene*	<0.050	0.050	12/21/2019	ND	2.00	99.9	2.00	1.79	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	2.03	101	2.00	2.25	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.90	98.4	6.00	2.26	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID 99.6 % 73.3-129

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2960**	16.0	12/20/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

MMX
LUPE CARRASCO
2737 PECOS HWY
CARLSBAD NM, 88220
Fax To: (575) 236-6201

Received:	12/18/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Soil
Project Name:	MILE MARKER 5 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S 3 - 1' (H904208-18)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	2.04	102	2.00	1.79	
Toluene*	<0.050	0.050	12/21/2019	ND	2.00	99.9	2.00	1.79	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	2.03	101	2.00	2.25	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.90	98.4	6.00	2.26	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *100 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	12/20/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *99.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *102 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	MMX	**BILL TO**	
Project Manager:	Lupe Carrasco	P.O. #:	
Address:		Company:	MMX
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	Mike Marker 5 SWD	State: Zip:	
Project Location:		Phone #:	
Sampler Name:		Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	TIME	BTEX	TPH	Chlorides
H904208																	
1	S1 - Surface	C	1			X					X		12/16/19		X	X	X
2	S1 - 1'	C	1			X					X				X	X	X
3	S1 - 2'	C	1			X					X				X	X	X
4	S1 - 3'	C	1			X					X				X	X	X
5	S1 - 4'	C	1			X					X				X	X	X
6	S1 - 6'	C	1			X					X				X	X	X
7	S1 - 8'	C	1			X					X				X	X	X
8	S1 - 10	C	1			X					X				X	X	X

Relinquished By:	Date: 12-18-19	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 10:10		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Email: lupemmxinc@gmail.com
	Time:		
Delivered By: (Circle One)	-2.3° #97	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TO
Sampler - UPS - Bus - Other:	Corrected -1.9°		Run until Cl- fall below 600ppm

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	MMX
Project Manager:	Lupe Carrasco
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Mike Marker 5 SWD
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	MMX
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	SAMPLING TIME	BTEX	TPH	Chlorides
H904208																	
9	52 - Surface	C	1			X							12/16/19		X	X	X
10	52 - 1'	C	1			X									X	X	X
11	52 - 2'	C	1			X									X	X	X
12	52 - 3'	C	1			X									X	X	X
13	52 - 4'	C	1			X									X	X	X
14	52 - 6'	C	1			X									X	X	X
15	52 - 8'	C	1			X									X	X	X
16	52 - 10'	C	1			X									X	X	X

Relinquished By:	Date: 12-18-19	Received By:	
Relinquished By:	Time: 10:10	Received By: Tamara Oldaker	
Delivered By: (Circle One)	Date:	Time:	
Sampler - UPS - Bus - Other:	-2.3° #97 Corrected -1.9°	Sample Condition Cool: Yes / No; Intact: Yes / No	CHECKED BY: (Initials) T.O.

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: Run until Cl⁻ fall below 600ppm

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	MMX
Project Manager:	Lupe Carrasco
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Mile Marker 5 SWD
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	MMX
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH	Cl-
H904208																	
17	53 Surface												12/16/19		X	X	X
18	53 - 1'														X	X	X
19	53 - 2'														X	X	X
20	53 - 3'														X	X	X
21	53 - 4'														X	X	X
22	53 - 6'														X	X	X
23	53 - 8'														X	X	X
24	53 - 10'														X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 12-18-19	Received By:	
	Time: 10:10		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One) -2.3° #97

Sampler - UPS - Bus - Other: Corrected -1.9°

Sample Condition: Cool: Yes / No; Intact: Yes / No

CHECKED BY: (Initials) JC

Phone Result: ☐ Yes ☐ No Add'l Phone #:

Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS: Run until Cl- fall below 600ppm

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

APPENDIX E
PHOTO LOG


SE
S
120
150
180
210
151°SE (T) 32.06281, -104.0674 ±2 m 884 m
26 Oct 2020, 15:13:06


S
180
210
SW
240
W
270
235°SW (T) 32.062792, -104.067388 ±2 m 881 m
26 Oct 2020, 15:13:12


NE
E
SE
30
60
90
120
85°E (T) 32.062738, -104.067538 ±2 m 881 m
26 Oct 2020, 15:13:27


NE
E
30
60
90
120
69°NE (T) 32.062717, -104.067542 ±1 m 881 m
26 Oct 2020, 15:13:33


SW
W
NW
210
240
270
300
266°W (T) 32.062751, -104.067377 ±1 m 881 m
26 Oct 2020, 15:13:53


SW
240
W
270
300
NW
330
276°W (T) 32.062735, -104.067396 ±1 m 880 m
26 Oct 2020, 15:13:59

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 11033

CONDITIONS OF APPROVAL

Operator:	OGRID:	Action Number:	Action Type:
JUDAH OIL LLC PO Box 568 Artesia, NM88211	245872	11033	C-141

OCD Reviewer	Condition
ceads	None