NOY1825051444 - Closure Report Amendment - ACO Incident Revisited.

CARMONA RESOURCES

CARMONA RESOURCES

July 7, 2023

New Mexico Oil Conservation Division
1220 South St, Francis Drive
Santa Fe, NM 87505

Re: Amendment to Closure Report
Flowmaster 24 34 15 SB #4H
Marathon Oil Corporation
NOY1825051444
1RP-5184
Site Location: Unit D, S15, T24S, R34E
(Lat 32.223850°, Long -103.461910°)
Lea County, New Mexico

To Whom It May Concern:

On behalf of Marathon Oil Corporation (Marathon), Carmona Resource, LLC has prepared this letter to document additional site activities for the Flowmaster 24 34 15 SB #4H. The site is located at the GPS 32.223850°, -103.461910° within Unit A, S26, T24S, R34E in Lea County, New Mexico.

1.0 Site Information and Background

NOY1825051444/1RP-5184

On March 7, 2023, the New Mexico OCD denied the closure report for the following reason: The confirmation sample point CS2 does not meet the closure criteria of 600 mg/kg for chloride. Please continue to delineate sample point CS2 to 600 mg/kg for chlorides and include sample points in your next report after closure criteria limits have been met.

2.0 Site Assessment Activities

On June 21, 2023, Carmona Resources, LLC performed site assessment activities to evaluate soil impacts stemming from the release. One (1) sample point (S-1) was advanced to a depth ranging from the surface to 1.5’ bgs inside the release area at CS2 to assess the vertical extent. See Figure 3 for the sample locations. For chemical analysis, the soil samples were collected and placed directly into laboratory-provided sample containers, stored on ice, and transported under the proper chain-of-custody protocol to Cardinal Laboratories in Hobbs, New Mexico. The samples were analyzed for total petroleum hydrocarbons (TPH) by EPA method 8015, modified benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, and chloride by EPA method 4500. The laboratory reports, including analytical methods, results, and chain-of-custody documents, are attached in Appendix D.

All samples were below the regulatory requirements for TPH, BTEX, and chloride. Refer to Table 1. The sample point of CS2 has undergone attenuation from precipitation and weather events that occurred from the initial sampling on October 21, 2018, to the present.

310 West Wall Street, Suite 500
Midland, Texas 79701
432.813.1992

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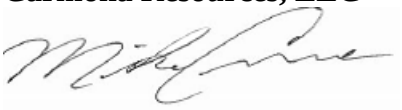
3.0 Conclusions

Based on the assessment results and the analytical data, no further actions are required at the site. The final C-141 is attached in Appendix A of the original request for closure. Marathon formally requests the closure of the spill. If you have any questions regarding this report or need additional information, please get in touch with us at 432-813-1992.

Sincerely,
Carmona Resources, LLC

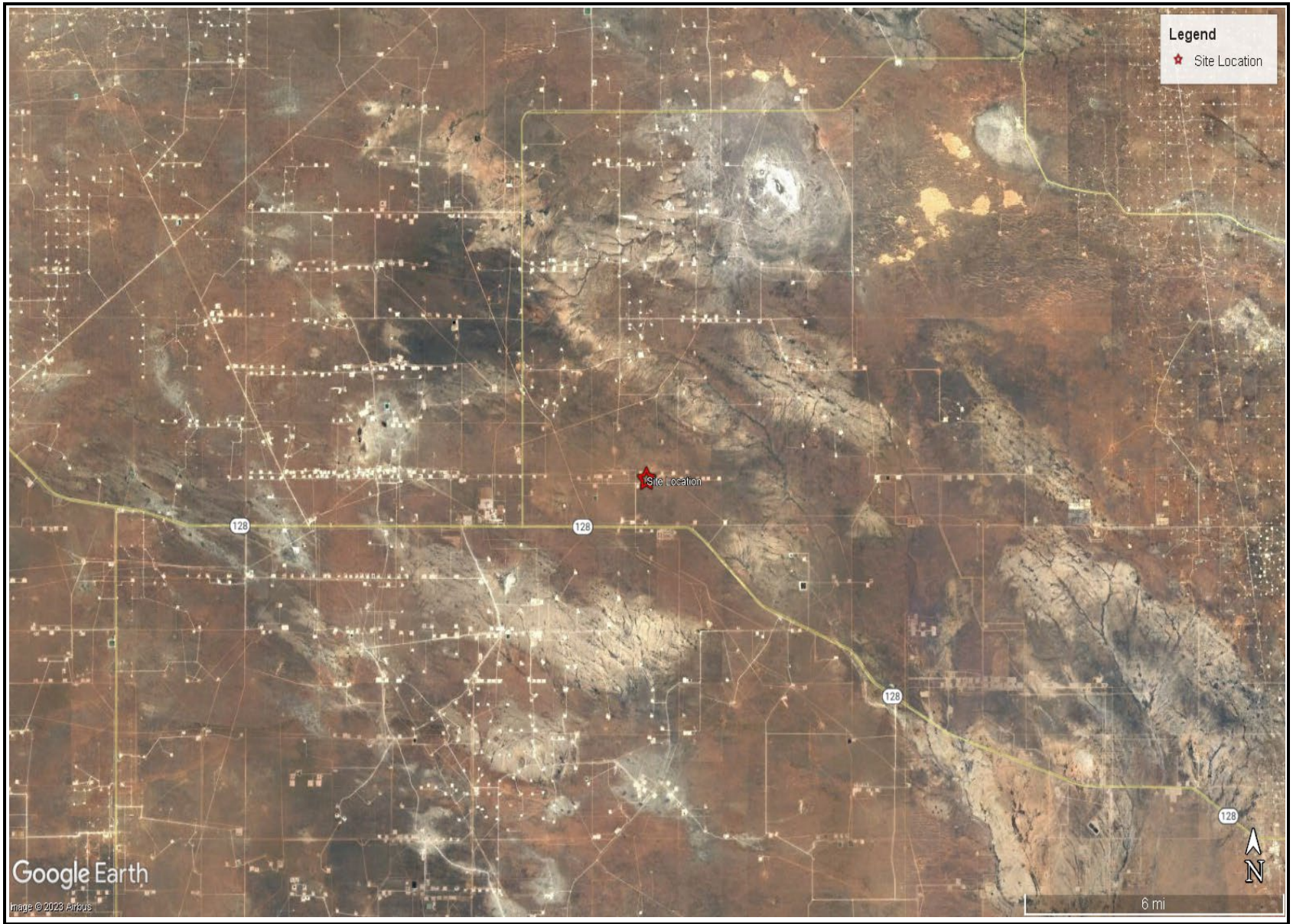


Mike Carmona
Environmental Manager

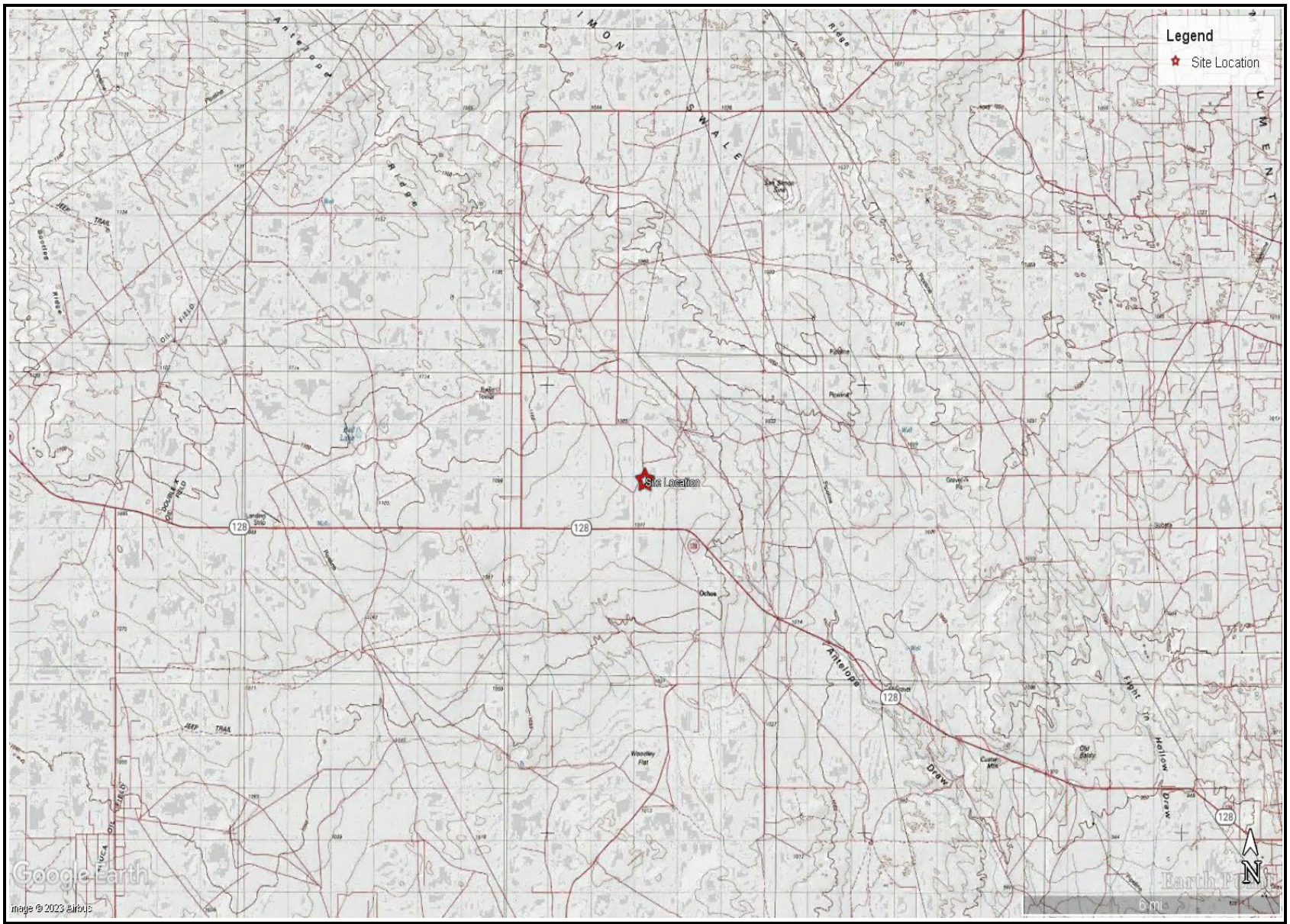
Clinton Merritt
Sr. Project Manager

FIGURES

CARMONA RESOURCES



OVERVIEW MAP MARATHON OIL CORPORATION FLOWMASTER 24 34 15 SB #4H LEA COUNTY, NEW MEXICO 32.223850°, -103.461910°	CARMONA RESOURCES	FIGURE 1



TOPOGRAPHIC MAP MARATHON OIL CORPORATION FLOWMASTER 24 34 15 SB #4H LEA COUNTY, NEW MEXICO 32.223850°, -103.461910°	CARMONA RESOURCES	FIGURE 2

SAMPLE LOCATION MAP MARATHON OIL CORPORATION FLOWMASTER 24 34 15 SB #4H LEA COUNTY, NEW MEXICO 32.223850°, -103.461910°	CARMONA RESOURCES	FIGURE 3

APPENDIX B

CARMONA RESOURCES

Table 1
Marathon Oil Corporation
Flowmaster 24 34 15 SB #4H
Lea County, New Mexico

Sample ID	Date	Depth (ft)	TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			GRO	DRO	MRO	Total						
S-1	6/21/2023	0-0.5	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	160
	"	1	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
	"	1.5	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	96.0
Regulatory Criteria [A]						100 mg/kg	10 mg/kg				50 mg/kg	600 mg/kg

(-) Not Analyzed

[A] – Table 1 - 19.15.29 NMAC

mg/kg - milligram per kilogram

TPH- Total Petroleum Hydrocarbons

ft-feet

(S) - Sample Point

APPENDIX C

CARMONA RESOURCES

PHOTOGRAPHIC LOG

Marathon Oil Corporation

Photograph No. 1

Facility: Flowmaster 24 34 15 SB #4H

County: Lea County, New Mexico

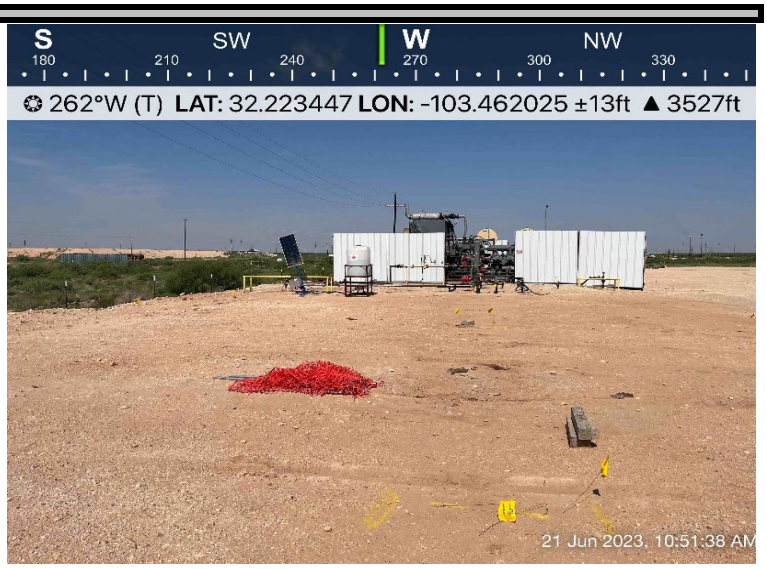
Description:
View Southwest of sample point S-1.

Photograph No. 2

Facility: Flowmaster 24 34 15 SB #4H

County: Lea County, New Mexico

Description:
View West of sample point S-1.



Photograph No. 3

Facility: Flowmaster 24 34 15 SB #4H

County: Lea County, New Mexico

Description:
View Northwest of sample points S-1.

APPENDIX D

CARMONA RESOURCES

CARDINAL Laboratories

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

June 28, 2023

CLINT MERRITT

CARMONA RESOURCES

310 W WALL ST SUITE 415

MIDLAND, TX 79701

RE: FLOWMASTER 24 34 15 SB #4H

Enclosed are the results of analyses for samples received by the laboratory on 06/23/23 12:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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:

CARMONA RESOURCES
CLINT MERRITT
310 W WALL ST SUITE 415
MIDLAND TX, 79701
Fax To:

Received:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/28/2023	Sampling Type:	Soil
Project Name:	FLOWMASTER 24 34 15 SB #4H	Sampling Condition:	Cool & Intact
Project Number:	2050	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NEW MEXICO		

Sample ID: S - 1 (0-0.5') (H233278-01)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.28	114	2.00	4.59	
Toluene*	<0.050	0.050	06/24/2023	ND	2.15	107	2.00	0.640	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.25	112	2.00	3.92	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.77	113	6.00	2.78	
Total BTEX	<0.300	0.300	06/24/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *71.5-134*

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	06/23/2023	ND	416	104	400	3.77	

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	06/23/2023	ND	171	85.4	200	0.783	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	180	90.0	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane *92.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

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:

CARMONA RESOURCES
CLINT MERRITT
310 W WALL ST SUITE 415
MIDLAND TX, 79701
Fax To:

Received:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/28/2023	Sampling Type:	Soil
Project Name:	FLOWMASTER 24 34 15 SB #4H	Sampling Condition:	Cool & Intact
Project Number:	2050	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NEW MEXICO		

Sample ID: S - 1 (1') (H233278-02)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.28	114	2.00	4.59	
Toluene*	<0.050	0.050	06/24/2023	ND	2.15	107	2.00	0.640	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.25	112	2.00	3.92	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.77	113	6.00	2.78	
Total BTEX	<0.300	0.300	06/24/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	06/23/2023	ND	416	104	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	06/23/2023	ND	171	85.4	200	0.783	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	180	90.0	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane *96.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

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:

CARMONA RESOURCES
CLINT MERRITT
310 W WALL ST SUITE 415
MIDLAND TX, 79701
Fax To:

Received:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/28/2023	Sampling Type:	Soil
Project Name:	FLOWMASTER 24 34 15 SB #4H	Sampling Condition:	Cool & Intact
Project Number:	2050	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NEW MEXICO		

Sample ID: S - 1 (1.5') (H233278-03)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.28	114	2.00	4.59	
Toluene*	<0.050	0.050	06/24/2023	ND	2.15	107	2.00	0.640	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.25	112	2.00	3.92	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.77	113	6.00	2.78	
Total BTEX	<0.300	0.300	06/24/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	06/23/2023	ND	416	104	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	06/23/2023	ND	171	85.4	200	0.783	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	180	90.0	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane *93.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

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

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Chain of Custody

Work Order No: H233278

Page 1 of 1

Project Manager:	Clinton Merritt	Bill to: (if different)	Melodie Sanjari
Company Name:	Carmona Resources	Company Name:	Marathon Oil Corporation
Address:	310 W Wall St Ste 500	Address:	990 Town and Country Blvd
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Houston, TX 77024
Phone:		Email:	msanjari@marathonoil.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Flowmaster 24 34 15 SB #4H	Turn Around	
Project Number:	2050	☑ Routine	☐ Rush
Project Location	Lea County, New Mexico	Due Date:	5 Day TAT
Sampler's Name:	CCM		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Received Intact:	(Yes) No	Thermometer ID:	113	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.6°c	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	1.2°c	
Total Containers:		Corrected Temperature:	0.6°c	

Sample Identification	Date	Time	Soil	Water	Grab/ Comp	# of Cont	Pres. Code	Parameters: BTEX 8021B	TPH 8015M (GRO + DRO + MRO)	Chloride 4500
S-1 (0-0.5')	6/21/2023	9:25	X		G	1		X	X	X
S-1 (1')	6/21/2023	9:28	X		G	1		X	X	X
S-1 (1.5')	6/21/2023	9:30	X		G	1		X	X	X

1
2
3

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Comments

Comments: Email results to Mike Carmona mcarmona@carmonaresources.com, Conner Moehring cmoehring@carmonaresources.com, Clint Merritt MerrittC@carmonaresources.com

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Ariana Nieves	6-23-23 1210	Tamara Oldaker	

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

November 28, 2018

#5E27499-BG12

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

SUBJECT: Remediation Closure Report for the Flowmaster 24 34 15 SB #4H Release (1RP-5184), Lea County, New Mexico

Dear Ms. Yu:

On behalf of Marathon Oil Permian LLC (Marathon), 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 Flowmaster 24 34 15 SB #4H site. The site is in Section 15, Township 24S, Range 34E, Lea County, New Mexico, on private 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	Flowmaster 24 34 15 SB #4H	Company	Marathon Oil Permian LLC
API Number	30-025-43666	Location	32.22385° -103.46191°
Incident Number	1RP-5184		
Estimated Date of Release	8/27/2018	Date Reported to NMOCD	8/28/2018
Land Owner	Private	Reported To	NMOCD
Source of Release	Flare		
Released Volume	15 gallons	Released Material	Crude Oil
Recovered Volume	0 gallons	Net Release	15 gallons
NMOCD Closure Criteria	51-100 feet to groundwater		
SMA Response Dates	September 25, October 30-31, 2018		

1.0 Background

On August 27, 2018, a release was discovered at the Flowmaster 24 34 15 SB #4H site due to due to a failed pressure reducer allowing the scrubber pot relief valve to release excess pressure. The dump valves shut and filled the vessel allowing oil to fill the gas vent line and releasing out the flare. Approximately 15 gallons of oil was released and ignited on location. The wells where shut in and the flames were extinguished by a fire extinguisher. Figure 1 illustrates the vicinity and site location, Figure 3 illustrates the release location. The C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Flowmaster 24 34 15 SB #4H is located approximately 18 miles northwest of Jal, New Mexico on privately-owned land. As summarized in Table 2 and illustrated in Figure 1, depth to groundwater in the area is estimated to be sixty-three (63) feet below grade surface (bgs). There is one known well 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 11/13/2018). This well was permitted as an exploratory well only. USGS well (321328103270601), located approximately 0.58 miles east of the release, which documents groundwater at approximately 63 feet bgs. The nearest surface water is an unnamed playa located approximately 715 feet to the northeast.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of between 51-100 feet bgs. The site has been restored to meet 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 Activities and Findings

On September 25, 2018, SMA personnel arrived on site in response to the release associated with Flowmaster 24 34 15 SB #4H. SMA performed site delineation activities by collecting soil samples around the release site and throughout the visibly stained area. Soil samples were field-screened for chloride using an electrical conductivity (EC) meter.

A total of seven (7) sample locations (L1-L7) were investigated using a hand-auger, to depths up to six (6) inches bgs. 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. Table 3 itemizes the results. Locations for all samples are depicted on Figure 2.

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

4.0 Soil Remediation Summary

SMA returned to the site on October 30, 2018 to oversee the excavation of contaminated soil. After approval from area utilities via 811, SMA guided the excavation activities by collecting soil samples for field screening. Samples were screened for chloride using an electrical conductivity (EC) meter and for hydrocarbon impacts using a calibrated MiniRAE 2000 photoionization detector (PID). The walls and base were excavated until field screening results indicated that the NMOCD Closure Criteria would be

met. NMOCD was notified on October 29, 2018 that closure samples were expected to be collected in two (2) business days.

On October 31, 2018, SMA conducted confirmation sampling of the impacted area, which measured approximately 20 by 20 feet. The areas CS-1 was excavated to a depth of one (1) foot bgs. Sample area CS-2 was excavated to a depth of 0.5 feet bgs. Confirmation samples were collected from within the excavation in accordance with the sampling protocol included in Appendix C. Confirmation samples were composed of five-point composites including four sidewall samples (CSW1-CSW4) and two bottom hole samples (CS1-CS2).

Figure 2 shows the extent of the excavation and sample locations. Laboratory results are summarized in Table 3. Laboratory reports are included in Appendix D.

In addition to meeting the Closure Criteria, the top four (4) feet of impacted areas of the well pad meet the Reclamation requirement of 19.15.29.13(D)(1) with the exception of chlorides for CS2 at 5,500 mg/Kg. The area of CS2 will be addressed during plug and abandonment activities. Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours

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 Austin Weyant at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Ashley Maxwell
Project Scientist

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

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

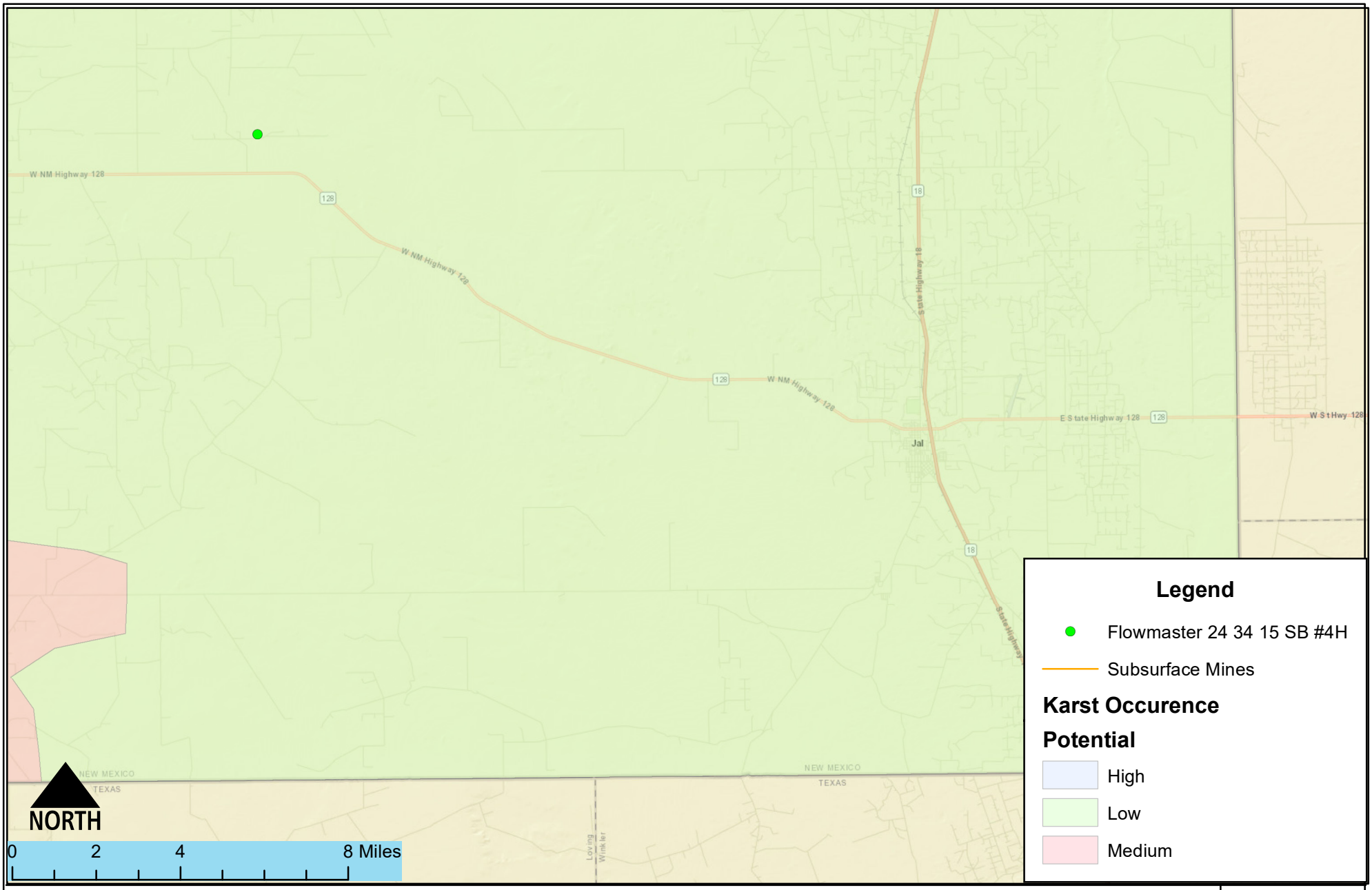
Tables:

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

Appendices:

Appendix A: Form C141
Appendix B: Groundwater Data
Appendix C: Field Notes, Sampling Protocol, Photo Documentation
Appendix D: Laboratory Analytical Reports

FIGURES



Vicinity and Subsurface Protection Map
Flowmaster 24 34 15 SB #4H - Marathon
S 15-T24S-R34E, New Mexico

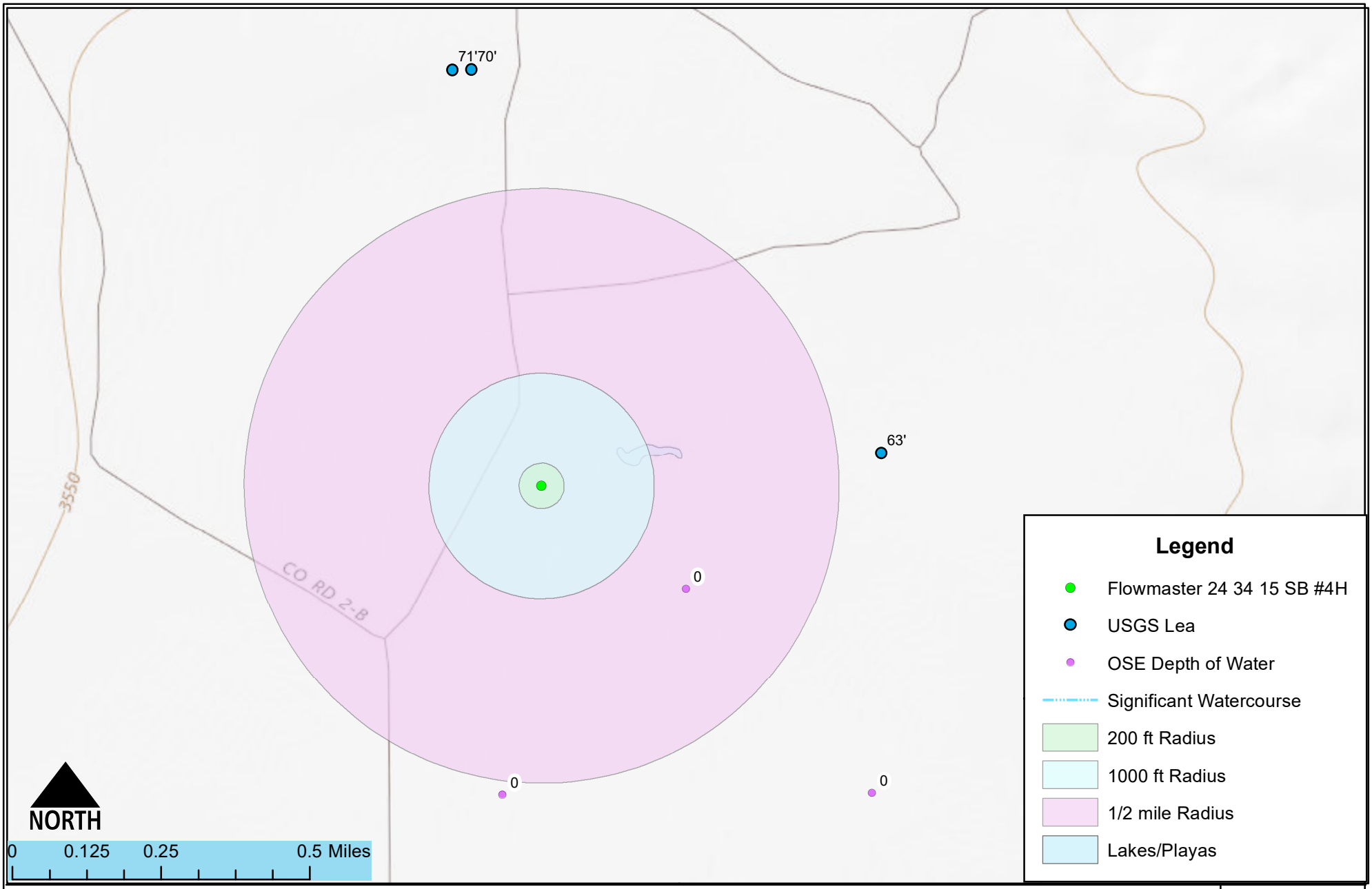
Figure 1

Date Saved: 10/29/2018

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

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halagueña Street
Carlsbad, New Mexico 88221
(575) 689-7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains



Surface Water and Well Head Protection Map
Flowmaster 24 34 15 SB #4H - Marathon
S 15-T24S-R34E, New Mexico

Figure 2

Date Saved: 10/29/2018

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

Drawn Heather Patterson
Checked
Approved

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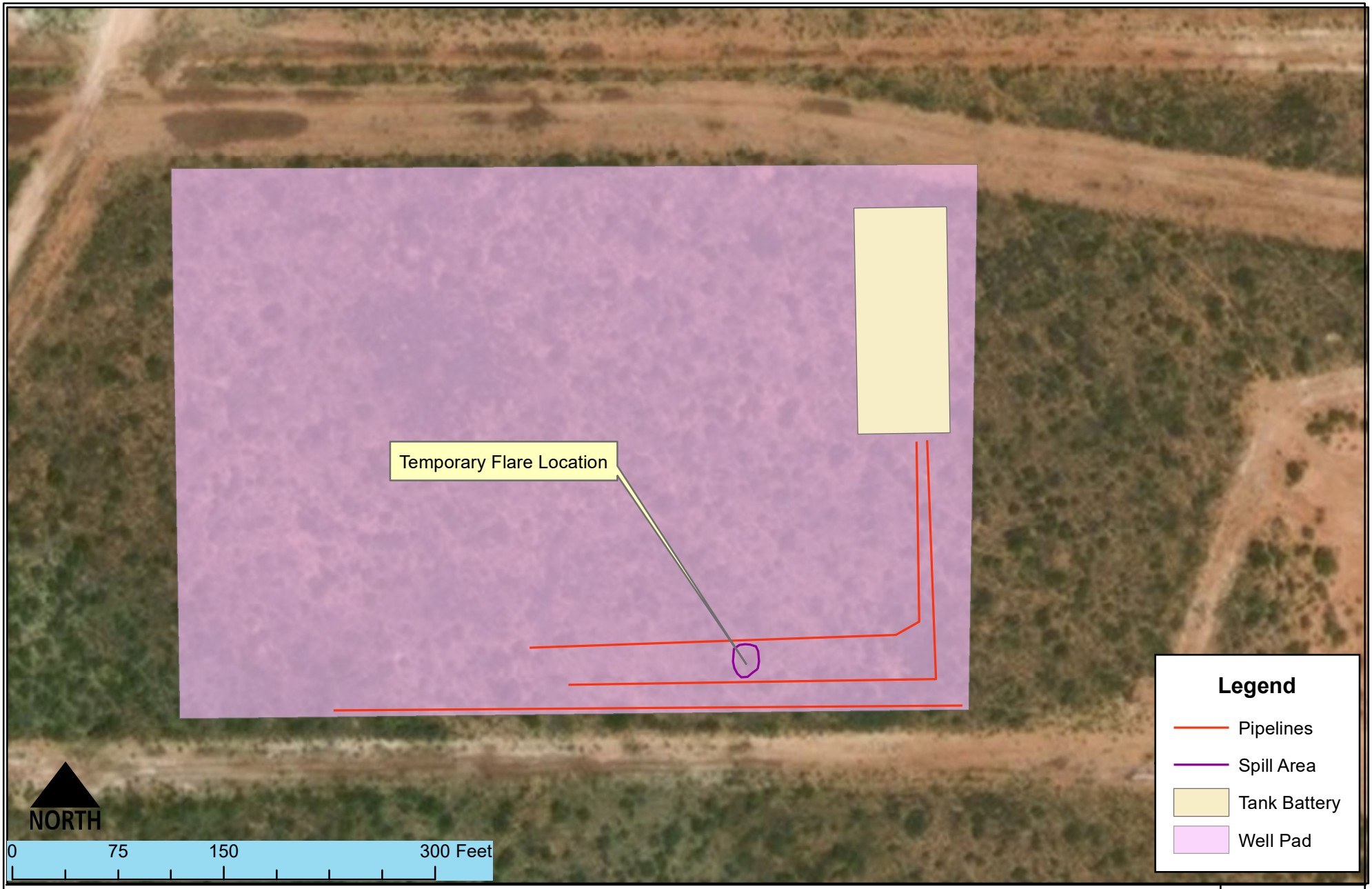

Site Map
Flowmaster 24 34 15 SB #4H - Marathon
S 15-T24S-R34E, New Mexico

Figure 3a

Date Saved: 11/28/2018

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

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689-7040
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Sample Location Map
Flowmaster 24 34 15 SB #4H - Marathon
S 15-T24S-R34E, New Mexico

Figure 3b

Date Saved: 11/28/2018

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

Drawn Heather Patterson
Checked
Approved

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TABLES

Table 2:
NMOCD Closure Criteria

Marathon Oil Permian LLC
Flowmaster 24 34 15 SB #4H (1RP-5184)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	63	USGS Water Data
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	1,146	NMOSE
Hortizontal Distance to Nearest Significant Watercourse (ft)	715	7.5 minute quadrangle map

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		**Closure Criteria (units in mg/kg)**				
		Chloride *numerical limit or background, whichever is greater	**TPH**	**GRO + DRO**	**BTEX**	**Benzene**
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'		20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	No	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					

Flowmaster 24 34 15 SB #4H

Table 3.
Initial Sampling Event

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Laboratory mg/Kg
NMOCD Closure Criteria				50	10	1000			2500	10000
L1	9/25/2018	0.5	excavated	<0.23	<0.024	<4.7	3100	2000	5100	6800
L2	9/25/2018	0.5	excavated	<0.23	<0.024	<4.9	540	230	770	18000
L3	9/25/2018	0.5	excavated	<0.23	<0.023	<4.6	110	62	172	2800
L4	9/25/2018	0.5	excavated	<0.23	<0.023	<4.7	270	<47	270	1200
L5	9/25/2018	0.5	excavated	<0.23	<0.024	<4.7	320	<49	320	4600
L6	9/25/2018	0.5	excavated	<0.23	<0.024	<4.7	310	<48	310	2900
L7	9/25/2018	0.5	excavated	<0.23	<0.023	<4.7	890	160	1,050	6000

Composit Confirmation Sampling Event

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Laboratory mg/Kg
NMOCD Closure Criteria				50	10	1000			2500	10000
CS1	10/31/2018	0.5	in-situ	<0.23	<0.024	<4.7	<9.7	<48	<63	<30
CS2	10/31/2018	0.5	in-situ	<0.23	<0.024	<4.9	21	<49	21	5500
CSW1	10/31/2018	0.5	in-situ	<0.23	<0.024	<4.9	81	81	162	630
CSW2	10/31/2018	0.5	in-situ	<0.23	<0.024	<4.8	66	<49	66	<30
CSW3	10/31/2018	0.5	in-situ	<0.23	<0.023	<4.6	<9.8	<49	<64	130
CSW4	10/31/2018	0-1	in-situ	<0.23	<0.024	<4.8	11	<49	11	<30

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	NOY1825051444
District RP	1RP-5184
Facility ID	
Application ID	pOY1825049902

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 371127 372098
Contact Name Isaac Castro	Contact Telephone 575-988-0561
Contact email icastro@marathonoil.com	Incident # NOY1825051444
Contact mailing address 4111 Tidwell Road, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.22385 Longitude -103.46191
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Flowmaster 24 34 15 SB #4H	Site Type Oil
Date Release Discovered 8/28/18 6:48 pm 8/27/2018	API# *(if applicable)* 30-025-43666

Unit Letter	Section	Township	Range	County
D	15	24S	34E	Lea

Fee minerals

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* Pitchfork Cattle Company LLC)

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

Cause of Release

During flowback operations, the pressure reducer failed, allowing high side unit pressure to the scrubber pot, causing the scrubber pot relief valve to release excess pressure. The dump valves shut and filled the vessel, allowing oil to fill the gas vent line and releasing out the flare. Approximately 15 gallons of oil was released and ignited on location. The wells were shut in and the flames were extinguished by a fire extinguisher.

State of New Mexico
Oil Conservation Division

Incident ID	NOY1825051444
District RP	1RP-5184
Facility ID	
Application ID	pOY1825049902

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? During flowback operations, oil was released out the flare and a small fire occurred on location.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notification was given on 8/28/18 4:02 pm via email by Callie Karrigan.

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:
Operations were shut in for repairs to be made. There were no standing free liquids. An approximate 10x10 ft area was impacted by the fire and was cleaned up immediately.

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

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

Printed Name: Isaac Castro Title: Advanced Environmental Technician

Signature: Isaac Castro Date: 9-6-18

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

OCD Only

Received by: REVIEWED By Olivia Yu at 1:55 pm, Sep 07, 2018 Date:

State of New Mexico
Oil Conservation Division

Incident ID	nOY1825051444
District RP	1RP-5184
Facility ID	
Application ID	pOY1825049902

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	nOY1825051444
District RP	1RP-5184
Facility ID	
Application ID	pOY1825049902

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

Printed Name: __Callie Karrigan_____ Title: _____HES Professional_____

Signature:_____*Callie Karrigan* _____ Date: ___11/28/2018_____

email: ___cnkarrigan@marathonoil.com_____ Telephone: ___575-297-0956_____

OCD Only

Received by: _____ Date: _____

Incident ID	nOY1825051444
District RP	1RP-5184
Facility ID	
Application ID	pOY1825049902

Closure

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

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

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

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

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

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: ____Melodie Sanjari_____ Title: _____HES Professional_____

Signature: *Melodie Sanjari* ___ Date: __7/10/2023_____

email: __msanjari@marathonoil.com_____ Telephone: _____575-988-8753_____

OCD Only

Received by: Jocelyn Harimon Date: 07/10/2023

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: 07/20/2023

Printed Name: Jocelyn Harimon Title: Environmental Specialist

APPENDIX B
GROUNDWATER DATA

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03932 POD13	CUB	LE	4	2	3	15	24S	34E	645314	3565203	1146	90		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 644934 **Northing (Y):** 3566285 **Radius:** 1500

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National Water Information System: Web Interface

USGS Water Resources

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

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Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 321328103270601

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

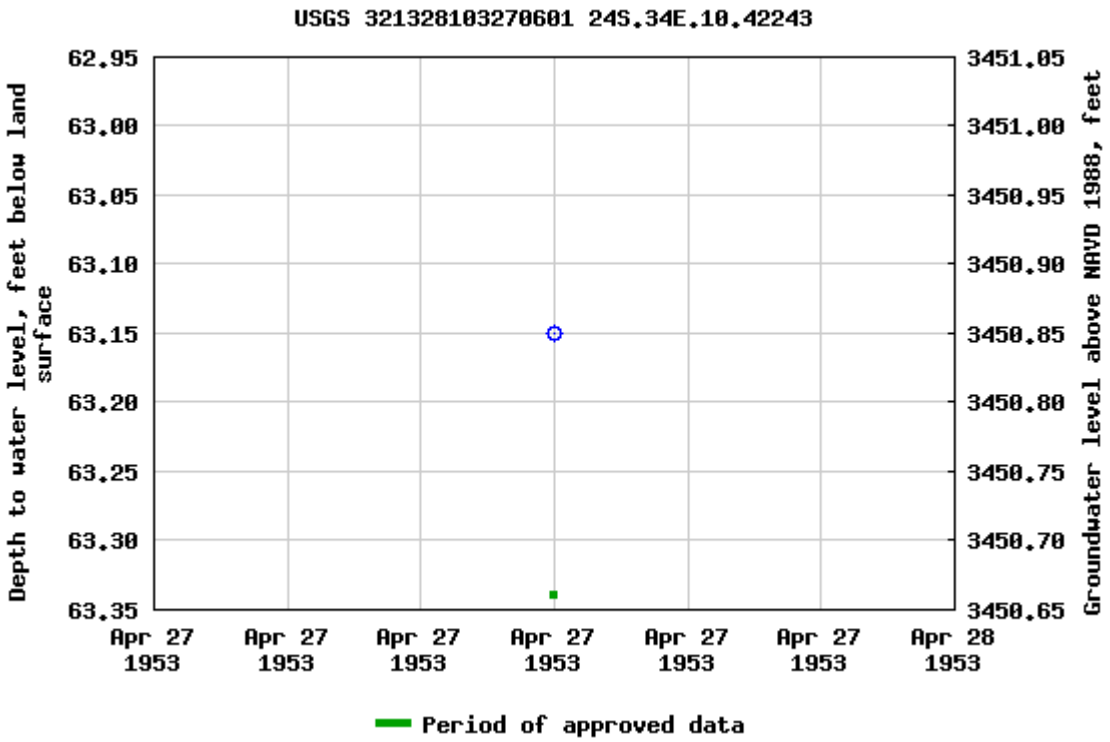
USGS 321328103270601 24S.34E.10.42243

Available data for this site Groundwater: Field measurements ▼ GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°13'28", Longitude 103°27'06" NAD27
Land-surface elevation 3,514 feet above NAVD88
The depth of the well is 93 feet below land surface.
This well is completed in the Ogallala Formation (121OGLL) 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.
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U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2018-11-28 12:25:07 EST
1.6 1.17 nadww01

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Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 321402103275001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

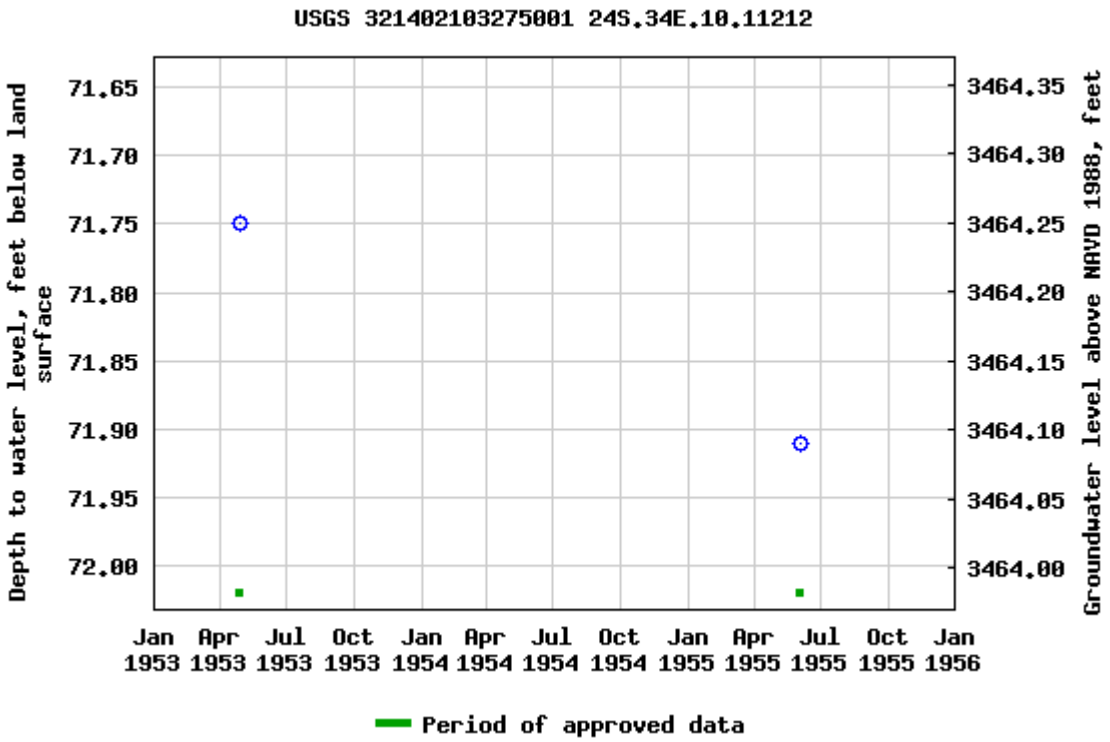
USGS 321402103275001 24S.34E.10.11212

Available data for this site Groundwater: Field measurements ▼ GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°14'02", Longitude 103°27'50" NAD27
Land-surface elevation 3,536 feet above NAVD88
The depth of the well is 83 feet below land surface.
This well is completed in the Ogallala Formation (121OGLL) 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

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U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2018-11-28 12:48:35 EST
2.2 1.53 nadww01

APPENDIX C
FIELD NOTES
SAMPLING PROTOCOL
PHOTO DOCUMENTATION

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

Sampling Protocol

The soil samples were collected in laboratory supplied containers in accordance with this sampling protocol, immediately placed on ice and sent under standard chain-of-custody protocols to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis. A total of fourteen (14) 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.

Field Screening

Location Name: Flow master

Date: 10/31/18

Sample Name:	Collection Time:	EC (mS)	Temp (°C)	PID Reading /PF	Soil Color	Primary Soil Type	Moisture Level	Other Remarks/Notes:
CSW-1	9:30a	.527	21.9	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
CSW-2	9:33	.267	21.7	—	Light Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
CSW-3	935	.308	21.9	—	~~Light~~ Dark ~~Tan~~ ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
CSW-4	938	.120	21.9	—	~~Light~~ Dark ~~Tan~~ Brown Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
~~CSW-5~~					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
CS1	942	.189	21.2		Light Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	~~Dry~~ Moist Wet	
CS2	945	.597	21.5		~~Light~~ Dark ~~Tan~~ Brown Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	

Photo Log

Photo Taken October 30, 2018

Facing east

32.223419°, -103.462058°

Photo Taken October 31, 2018

Facing North

32.223382°, -103.462022°

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

October 05, 2018

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Flowmaster OrderNo.: 1809H19

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 7 sample(s) on 9/28/2018 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 **1809H19**
Date Reported: **10/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-0.5
Project: Flowmaster
Collection Date: 9/25/2018 9:03:00 AM
Lab ID: 1809H19-001 **Matrix:** SOIL **Received Date:** 9/28/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	6800	300		mg/Kg	200	10/3/2018 3:33:06 PM	40726
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	3100	97		mg/Kg	10	10/2/2018 1:34:10 PM	40716
Motor Oil Range Organics (MRO)	2000	490		mg/Kg	10	10/2/2018 1:34:10 PM	40716
Surr: DNOP	0	50.6-138	S	%Rec	10	10/2/2018 1:34:10 PM	40716
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/2/2018 12:06:56 AM	40661
Surr: BFB	90.2	15-316		%Rec	1	10/2/2018 12:06:56 AM	40661
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/2/2018 12:06:56 AM	40661
Toluene	ND	0.047		mg/Kg	1	10/2/2018 12:06:56 AM	40661
Ethylbenzene	ND	0.047		mg/Kg	1	10/2/2018 12:06:56 AM	40661
Xylenes, Total	ND	0.094		mg/Kg	1	10/2/2018 12:06:56 AM	40661
Surr: 4-Bromofluorobenzene	88.1	80-120		%Rec	1	10/2/2018 12:06:56 AM	40661

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1809H19**
Date Reported: **10/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-0.5
Project: Flowmaster
Collection Date: 9/25/2018 9:20:00 AM
Lab ID: 1809H19-002 **Matrix:** SOIL **Received Date:** 9/28/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	18000	750		mg/Kg	500	10/3/2018 3:45:30 PM	40726
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	540	9.7		mg/Kg	1	10/2/2018 3:24:13 PM	40716
Motor Oil Range Organics (MRO)	230	49		mg/Kg	1	10/2/2018 3:24:13 PM	40716
Surr: DNOP	104	50.6-138		%Rec	1	10/2/2018 3:24:13 PM	40716
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/2/2018 1:40:05 AM	40661
Surr: BFB	91.3	15-316		%Rec	1	10/2/2018 1:40:05 AM	40661
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/2/2018 1:40:05 AM	40661
Toluene	ND	0.049		mg/Kg	1	10/2/2018 1:40:05 AM	40661
Ethylbenzene	ND	0.049		mg/Kg	1	10/2/2018 1:40:05 AM	40661
Xylenes, Total	ND	0.098		mg/Kg	1	10/2/2018 1:40:05 AM	40661
Surr: 4-Bromofluorobenzene	88.4	80-120		%Rec	1	10/2/2018 1:40:05 AM	40661

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1809H19**
Date Reported: **10/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-0.5
Project: Flowmaster
Collection Date: 9/25/2018 9:30:00 AM
Lab ID: 1809H19-003 **Matrix:** SOIL **Received Date:** 9/28/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	2800	150		mg/Kg	100	10/3/2018 3:57:55 PM	40726
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	110	9.8		mg/Kg	1	10/2/2018 5:02:03 PM	40716
Motor Oil Range Organics (MRO)	62	49		mg/Kg	1	10/2/2018 5:02:03 PM	40716
Surr: DNOP	104	50.6-138		%Rec	1	10/2/2018 5:02:03 PM	40716
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/2/2018 2:03:25 AM	40661
Surr: BFB	92.5	15-316		%Rec	1	10/2/2018 2:03:25 AM	40661
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	10/2/2018 2:03:25 AM	40661
Toluene	ND	0.046		mg/Kg	1	10/2/2018 2:03:25 AM	40661
Ethylbenzene	ND	0.046		mg/Kg	1	10/2/2018 2:03:25 AM	40661
Xylenes, Total	ND	0.092		mg/Kg	1	10/2/2018 2:03:25 AM	40661
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	10/2/2018 2:03:25 AM	40661

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1809H19**
Date Reported: **10/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-0.5
Project: Flowmaster
Collection Date: 9/25/2018 9:43:00 AM
Lab ID: 1809H19-004 **Matrix:** SOIL **Received Date:** 9/28/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	1200	30		mg/Kg	20	10/2/2018 12:45:26 PM	40726
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	270	9.5		mg/Kg	1	10/2/2018 6:15:22 PM	40716
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/2/2018 6:15:22 PM	40716
Surr: DNOP	96.9	50.6-138		%Rec	1	10/2/2018 6:15:22 PM	40716
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/2/2018 2:26:45 AM	40661
Surr: BFB	89.3	15-316		%Rec	1	10/2/2018 2:26:45 AM	40661
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	10/2/2018 2:26:45 AM	40661
Toluene	ND	0.047		mg/Kg	1	10/2/2018 2:26:45 AM	40661
Ethylbenzene	ND	0.047		mg/Kg	1	10/2/2018 2:26:45 AM	40661
Xylenes, Total	ND	0.093		mg/Kg	1	10/2/2018 2:26:45 AM	40661
Surr: 4-Bromofluorobenzene	87.1	80-120		%Rec	1	10/2/2018 2:26:45 AM	40661

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1809H19**
Date Reported: **10/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L5-0.5
Project: Flowmaster
Collection Date: 9/25/2018 9:53:00 AM
Lab ID: 1809H19-005 **Matrix:** SOIL **Received Date:** 9/28/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	4600	300		mg/Kg	200	10/4/2018 5:11:33 PM	40771
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	320	9.7		mg/Kg	1	10/2/2018 7:28:47 PM	40716
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/2/2018 7:28:47 PM	40716
Surr: DNOP	96.2	50.6-138		%Rec	1	10/2/2018 7:28:47 PM	40716
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/2/2018 2:50:07 AM	40661
Surr: BFB	88.9	15-316		%Rec	1	10/2/2018 2:50:07 AM	40661
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	10/2/2018 2:50:07 AM	40661
Toluene	ND	0.047		mg/Kg	1	10/2/2018 2:50:07 AM	40661
Ethylbenzene	ND	0.047		mg/Kg	1	10/2/2018 2:50:07 AM	40661
Xylenes, Total	ND	0.094		mg/Kg	1	10/2/2018 2:50:07 AM	40661
Surr: 4-Bromofluorobenzene	86.9	80-120		%Rec	1	10/2/2018 2:50:07 AM	40661

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1809H19**
Date Reported: **10/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L6-0.5
Project: Flowmaster
Collection Date: 9/25/2018 10:02:00 AM
Lab ID: 1809H19-006 **Matrix:** SOIL **Received Date:** 9/28/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	2900	150		mg/Kg	100	10/4/2018 5:48:47 PM	40771
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	310	9.7		mg/Kg	1	10/2/2018 8:42:11 PM	40716
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/2/2018 8:42:11 PM	40716
Surr: DNOP	98.7	50.6-138		%Rec	1	10/2/2018 8:42:11 PM	40716
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/2/2018 3:13:24 AM	40661
Surr: BFB	90.6	15-316		%Rec	1	10/2/2018 3:13:24 AM	40661
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	10/2/2018 3:13:24 AM	40661
Toluene	ND	0.047		mg/Kg	1	10/2/2018 3:13:24 AM	40661
Ethylbenzene	ND	0.047		mg/Kg	1	10/2/2018 3:13:24 AM	40661
Xylenes, Total	ND	0.095		mg/Kg	1	10/2/2018 3:13:24 AM	40661
Surr: 4-Bromofluorobenzene	88.6	80-120		%Rec	1	10/2/2018 3:13:24 AM	40661

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1809H19**
Date Reported: **10/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L7-0.5
Project: Flowmaster
Collection Date: 9/25/2018 10:12:00 AM
Lab ID: 1809H19-007 **Matrix:** SOIL **Received Date:** 9/28/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	6000	300		mg/Kg	200	10/4/2018 6:01:11 PM	40771
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	890	9.5		mg/Kg	1	10/2/2018 9:55:41 PM	40716
Motor Oil Range Organics (MRO)	160	48		mg/Kg	1	10/2/2018 9:55:41 PM	40716
Surr: DNOP	101	50.6-138		%Rec	1	10/2/2018 9:55:41 PM	40716
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/2/2018 3:36:41 AM	40661
Surr: BFB	91.7	15-316		%Rec	1	10/2/2018 3:36:41 AM	40661
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	10/2/2018 3:36:41 AM	40661
Toluene	ND	0.047		mg/Kg	1	10/2/2018 3:36:41 AM	40661
Ethylbenzene	ND	0.047		mg/Kg	1	10/2/2018 3:36:41 AM	40661
Xylenes, Total	ND	0.093		mg/Kg	1	10/2/2018 3:36:41 AM	40661
Surr: 4-Bromofluorobenzene	88.5	80-120		%Rec	1	10/2/2018 3:36:41 AM	40661

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1809H19**
05-Oct-18

Client: Souder, Miller & Associates
Project: Flowmaster

Sample ID	**MB-40726**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**40726**	RunNo:	**54572**					
Prep Date:	**10/2/2018**	Analysis Date:	**10/2/2018**	SeqNo:	**1810271**	Units:	**mg/Kg**			

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

Sample ID	**LCS-40726**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**40726**	RunNo:	**54572**					
Prep Date:	**10/2/2018**	Analysis Date:	**10/2/2018**	SeqNo:	**1810272**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	90	110			

Sample ID	**MB-40771**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**40771**	RunNo:	**54611**					
Prep Date:	**10/3/2018**	Analysis Date:	**10/3/2018**	SeqNo:	**1812102**	Units:	**mg/Kg**			

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

Sample ID	**LCS-40771**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**40771**	RunNo:	**54611**					
Prep Date:	**10/3/2018**	Analysis Date:	**10/3/2018**	SeqNo:	**1812103**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809H19**

05-Oct-18

Client: Souder, Miller & Associates

Project: Flowmaster

Sample ID	**LCS-40716**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**40716**		RunNo:	**54571**				
Prep Date:	**10/1/2018**	Analysis Date:	**10/2/2018**		SeqNo:	**1809320**	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	91.7	70	130			
Surr: DNOP	4.8		5.000		95.8	50.6	138			

Sample ID	**MB-40716**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**40716**		RunNo:	**54571**				
Prep Date:	**10/1/2018**	Analysis Date:	**10/2/2018**		SeqNo:	**1809321**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	50.6	138			

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809H19**

05-Oct-18

Client: Souder, Miller & Associates

Project: Flowmaster

Sample ID	**MB-40661**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**40661**	RunNo:	**54538**					
Prep Date:	**9/28/2018**	Analysis Date:	**10/1/2018**	SeqNo:	**1808602**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		94.0	15	316			

Sample ID	**LCS-40661**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**40661**	RunNo:	**54538**					
Prep Date:	**9/28/2018**	Analysis Date:	**10/1/2018**	SeqNo:	**1808603**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.8	75.9	131			
Surr: BFB	1100		1000		106	15	316			

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1809H19**
05-Oct-18

Client: Souder, Miller & Associates
Project: Flowmaster

Sample ID	**MB-40661**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**40661**	RunNo:	**54538**					
Prep Date:	**9/28/2018**	Analysis Date:	**10/1/2018**	SeqNo:	**1808638**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.8	80	120			

Sample ID	**LCS-40661**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**40661**	RunNo:	**54538**					
Prep Date:	**9/28/2018**	Analysis Date:	**10/1/2018**	SeqNo:	**1808639**	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	93.1	77.3	128			
Toluene	0.97	0.050	1.000	0	97.3	79.2	125			
Ethylbenzene	0.96	0.050	1.000	0	96.3	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	96.4	81.6	129			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.4	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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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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: **1809H19** RcptNo: **1**

Received By: **Erin Melendrez** **9/28/2018 8:45:00 AM**

Completed By: **Erin Melendrez** **9/28/2018 10:46:26 AM**

Reviewed By: JC 9.28.18

LB: ENM 9/28/18

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

ENM 9/28/18

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: SMA-Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 5 day

Project Name: Flowmaster

Project #:

Project Manager: Austin Weyant

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.1-1.0(CF)=2.1

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 Request ID	Container Type and #	Preservative Type	HEAL No. 1809H19	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F^-,Cl^-,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
9/25/18	903	Soil	L1-0.5			-001	X		X					X								
	920		L2-0.5			-002	X		X					X								
	930		L3-0.5			-003	X		X					X								
	943		L4-0.5			-004	X		X					X								
	953		L5-0.5			-005	X		X					X								
	1002		L6-0.5			-006	X		X					X								
	1012		L7-0.5			-007	X		X					X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
				9/26/18	1430
9/27/18	1900		Courier ENH 9/28/18	9/28/18	0845

Remarks: Marathon 0.1

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 09, 2018

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Flowmaster OrderNo.: 1811090

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 6 sample(s) on 11/2/2018 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 **1811090**
Date Reported: **11/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW 1
Project: Flowmaster
Collection Date: 10/31/2018 9:30:00 AM
Lab ID: 1811090-001 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	630	30		mg/Kg	20	11/6/2018 1:22:06 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	81	9.7		mg/Kg	1	11/6/2018 10:17:02 AM	41368
Motor Oil Range Organics (MRO)	81	49		mg/Kg	1	11/6/2018 10:17:02 AM	41368
Surr: DNOP	117	50.6-138		%Rec	1	11/6/2018 10:17:02 AM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/6/2018 8:07:27 PM	41357
Surr: BFB	90.4	73.8-119		%Rec	1	11/6/2018 8:07:27 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/6/2018 8:07:27 PM	41357
Toluene	ND	0.049		mg/Kg	1	11/6/2018 8:07:27 PM	41357
Ethylbenzene	ND	0.049		mg/Kg	1	11/6/2018 8:07:27 PM	41357
Xylenes, Total	ND	0.097		mg/Kg	1	11/6/2018 8:07:27 PM	41357
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	11/6/2018 8:07:27 PM	41357

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1811090**
Date Reported: **11/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW 2
Project: Flowmaster
Collection Date: 10/31/2018 9:33:00 AM
Lab ID: 1811090-002 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	11/6/2018 1:34:30 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	66	9.8		mg/Kg	1	11/6/2018 11:30:11 AM	41368
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/6/2018 11:30:11 AM	41368
Surr: DNOP	116	50.6-138		%Rec	1	11/6/2018 11:30:11 AM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/6/2018 8:30:15 PM	41357
Surr: BFB	88.9	73.8-119		%Rec	1	11/6/2018 8:30:15 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/6/2018 8:30:15 PM	41357
Toluene	ND	0.048		mg/Kg	1	11/6/2018 8:30:15 PM	41357
Ethylbenzene	ND	0.048		mg/Kg	1	11/6/2018 8:30:15 PM	41357
Xylenes, Total	ND	0.095		mg/Kg	1	11/6/2018 8:30:15 PM	41357
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/6/2018 8:30:15 PM	41357

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1811090**
Date Reported: **11/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW 3
Project: Flowmaster
Collection Date: 10/31/2018 9:35:00 AM
Lab ID: 1811090-003 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	130	30		mg/Kg	20	11/6/2018 1:46:54 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/6/2018 11:54:46 AM	41368
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/6/2018 11:54:46 AM	41368
Surr: DNOP	105	50.6-138		%Rec	1	11/6/2018 11:54:46 AM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/6/2018 8:53:01 PM	41357
Surr: BFB	90.4	73.8-119		%Rec	1	11/6/2018 8:53:01 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/6/2018 8:53:01 PM	41357
Toluene	ND	0.046		mg/Kg	1	11/6/2018 8:53:01 PM	41357
Ethylbenzene	ND	0.046		mg/Kg	1	11/6/2018 8:53:01 PM	41357
Xylenes, Total	ND	0.091		mg/Kg	1	11/6/2018 8:53:01 PM	41357
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	11/6/2018 8:53:01 PM	41357

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1811090**
Date Reported: **11/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CSW 4
Project: Flowmaster
Collection Date: 10/31/2018 9:38:00 AM
Lab ID: 1811090-004 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	11/6/2018 2:24:07 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	11	9.7		mg/Kg	1	11/6/2018 12:19:11 PM	41368
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/6/2018 12:19:11 PM	41368
Surr: DNOP	99.8	50.6-138		%Rec	1	11/6/2018 12:19:11 PM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/6/2018 9:15:46 PM	41357
Surr: BFB	91.7	73.8-119		%Rec	1	11/6/2018 9:15:46 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/6/2018 9:15:46 PM	41357
Toluene	ND	0.048		mg/Kg	1	11/6/2018 9:15:46 PM	41357
Ethylbenzene	ND	0.048		mg/Kg	1	11/6/2018 9:15:46 PM	41357
Xylenes, Total	ND	0.096		mg/Kg	1	11/6/2018 9:15:46 PM	41357
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	11/6/2018 9:15:46 PM	41357

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 Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1811090**
Date Reported: **11/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS 1
Project: Flowmaster
Collection Date: 10/31/2018 9:42:00 AM
Lab ID: 1811090-005 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	11/6/2018 3:01:21 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/6/2018 12:43:43 PM	41368
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/6/2018 12:43:43 PM	41368
Surr: DNOP	96.8	50.6-138		%Rec	1	11/6/2018 12:43:43 PM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/6/2018 9:38:33 PM	41357
Surr: BFB	90.8	73.8-119		%Rec	1	11/6/2018 9:38:33 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/6/2018 9:38:33 PM	41357
Toluene	ND	0.047		mg/Kg	1	11/6/2018 9:38:33 PM	41357
Ethylbenzene	ND	0.047		mg/Kg	1	11/6/2018 9:38:33 PM	41357
Xylenes, Total	ND	0.095		mg/Kg	1	11/6/2018 9:38:33 PM	41357
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	11/6/2018 9:38:33 PM	41357

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1811090**
Date Reported: **11/9/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS 2
Project: Flowmaster
Collection Date: 10/31/2018 9:45:00 AM
Lab ID: 1811090-006 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	5500	300		mg/Kg	200	11/8/2018 6:53:22 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	21	9.8		mg/Kg	1	11/6/2018 1:08:09 PM	41368
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/6/2018 1:08:09 PM	41368
Surr: DNOP	97.7	50.6-138		%Rec	1	11/6/2018 1:08:09 PM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/6/2018 10:01:15 PM	41357
Surr: BFB	94.7	73.8-119		%Rec	1	11/6/2018 10:01:15 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/6/2018 10:01:15 PM	41357
Toluene	ND	0.049		mg/Kg	1	11/6/2018 10:01:15 PM	41357
Ethylbenzene	ND	0.049		mg/Kg	1	11/6/2018 10:01:15 PM	41357
Xylenes, Total	ND	0.097		mg/Kg	1	11/6/2018 10:01:15 PM	41357
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	11/6/2018 10:01:15 PM	41357

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1811090**
09-Nov-18

Client: Souder, Miller & Associates
Project: Flowmaster

Sample ID	**MB-41381**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**41381**	RunNo:	**55430**					
Prep Date:	**11/6/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1846319**	Units:	**mg/Kg**			

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

Sample ID	**LCS-41381**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**41381**	RunNo:	**55430**					
Prep Date:	**11/6/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1846320**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811090**

09-Nov-18

Client: Souder, Miller & Associates

Project: Flowmaster

Sample ID	**LCS-41368**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**41368**		RunNo:	**55425**				
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**		SeqNo:	**1844297**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.6	70	130			
Surr: DNOP	4.2		5.000		84.1	50.6	138			

Sample ID	**MB-41368**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**41368**		RunNo:	**55425**				
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**		SeqNo:	**1844298**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	50.6	138			

Sample ID	**1811090-001AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**CSW 1**	Batch ID:	**41368**		RunNo:	**55425**				
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**		SeqNo:	**1844300**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	170	9.8	49.16	81.50	176	53.5	126			S
Surr: DNOP	7.3		4.916		148	50.6	138			S

Sample ID	**1811090-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**CSW 1**	Batch ID:	**41368**		RunNo:	**55425**				
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**		SeqNo:	**1844301**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	120	9.9	49.41	81.50	70.0	53.5	126	36.5	21.7	R
Surr: DNOP	5.9		4.941		119	50.6	138	0	0	

Sample ID	**LCS-41389**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**41389**		RunNo:	**55460**				
Prep Date:	**11/6/2018**	Analysis Date:	**11/7/2018**		SeqNo:	**1846173**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.3		5.000		106	50.6	138			

Sample ID	**MB-41389**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**41389**		RunNo:	**55460**				
Prep Date:	**11/6/2018**	Analysis Date:	**11/7/2018**		SeqNo:	**1846174**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811090**

09-Nov-18

Client: Souder, Miller & Associates

Project: Flowmaster

Sample ID	**MB-41389**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**41389**	RunNo:	**55460**					
Prep Date:	**11/6/2018**	Analysis Date:	**11/7/2018**	SeqNo:	**1846174**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		115	50.6	138			

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811090**

09-Nov-18

Client: Souder, Miller & Associates

Project: Flowmaster

Sample ID	**MB-41357**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845135**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.1	73.8	119			

Sample ID	**LCS-41357**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845136**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	80.1	123			
Surr: BFB	1100		1000		110	73.8	119			

Sample ID	**1811090-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**CSW 1**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845138**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	24.88	0	114	77.8	128			
Surr: BFB	1000		995.0		104	73.8	119			

Sample ID	**1811090-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**CSW 1**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845139**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	23.88	0	111	77.8	128	6.59	20	
Surr: BFB	1000		955.1		108	73.8	119	0	0	

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811090**

09-Nov-18

Client: Souder, Miller & Associates

Project: Flowmaster

Sample ID	**MB-41357**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845160**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.0	80	120			

Sample ID	**LCS-41357**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845161**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.3	80	120			
Toluene	0.99	0.050	1.000	0	98.6	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	**1811090-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**CSW 2**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845176**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9709	0.004430	112	68.5	133			
Toluene	1.1	0.049	0.9709	0	115	75	130			
Ethylbenzene	1.1	0.049	0.9709	0	117	79.4	128			
Xylenes, Total	3.4	0.097	2.913	0	115	77.3	131			
Surr: 4-Bromofluorobenzene	1.1		0.9709		112	80	120			

Sample ID	**1811090-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**CSW 2**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845177**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9814	0.004430	106	68.5	133	3.66	20	
Toluene	1.1	0.049	0.9814	0	111	75	130	3.07	20	
Ethylbenzene	1.1	0.049	0.9814	0	111	79.4	128	3.84	20	
Xylenes, Total	3.2	0.098	2.944	0	110	77.3	131	3.45	20	
Surr: 4-Bromofluorobenzene	1.1		0.9814		111	80	120	0	0	

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 Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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: **1811090** RcptNo: **1**

Received By: **Victoria Zellar** **11/2/2018 9:10:00 AM** Victoria Zellar

Completed By: **Erin Melendrez** **11/2/2018 11:15:03 AM**

Reviewed By: JAB 11/02/18

LB: DAD 11/02/18

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: 11/02/18 DAD

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			
2	2.1	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address: Carlsbad

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: Flowmaster

Project #:

Project Manager: Austin Weyant

Sampler: LA

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 3.4, 2.1

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. 1811090	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)
10/31/18	9:30	Soil	CSW 1	4oz		-001	X	X					X			
	933		CSW 2			-002	X	X					X			
	935		CSW 3			-003	X	X					X			
	938		CSW 4			-004	X	X					X			
	942		CS-1			-005	X	X					X			
	945		CS-2			-006	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					11/1/18	1430
Date:	Time:	Relinquished by:	Received by:	Via: Courier	Date	Time
			Victoria Villa		11/2/18	9:10

Remarks: Maratnon Oil

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

APPENDIX A

CARMONA RESOURCES

CARMONA RESOURCES

July 7, 2023

New Mexico Oil Conservation Division
1220 South St, Francis Drive
Santa Fe, NM 87505

Re: Amendment to Closure Report
Flowmaster 24 34 15 SB #4H
Marathon Oil Corporation
NOY1825051444
1RP-5184
Site Location: Unit D, S15, T24S, R34E
(Lat 32.223850°, Long -103.461910°)
Lea County, New Mexico

To Whom It May Concern:

On behalf of Marathon Oil Corporation (Marathon), Carmona Resource, LLC has prepared this letter to document additional site activities for the Flowmaster 24 34 15 SB #4H. The site is located at the GPS 32.223850°, -103.461910° within Unit A, S26, T24S, R34E in Lea County, New Mexico.

1.0 Site Information and Background

NOY1825051444/1RP-5184

On March 7, 2023, the New Mexico OCD denied the closure report for the following reason: The confirmation sample point CS2 does not meet the closure criteria of 600 mg/kg for chloride. Please continue to delineate sample point CS2 to 600 mg/kg for chlorides and include sample points in your next report after closure criteria limits have been met.

2.0 Site Assessment Activities

On June 21, 2023, Carmona Resources, LLC performed site assessment activities to evaluate soil impacts stemming from the release. One (1) sample point (S-1) was advanced to a depth ranging from the surface to 1.5’ bgs inside the release area at CS2 to assess the vertical extent. See Figure 3 for the sample locations. For chemical analysis, the soil samples were collected and placed directly into laboratory-provided sample containers, stored on ice, and transported under the proper chain-of-custody protocol to Cardinal Laboratories in Hobbs, New Mexico. The samples were analyzed for total petroleum hydrocarbons (TPH) by EPA method 8015, modified benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, and chloride by EPA method 4500. The laboratory reports, including analytical methods, results, and chain-of-custody documents, are attached in Appendix D.

All samples were below the regulatory requirements for TPH, BTEX, and chloride. Refer to Table 1. The sample point of CS2 has undergone attenuation from precipitation and weather events that occurred from the initial sampling on October 21, 2018, to the present.

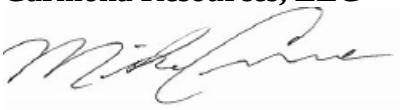
310 West Wall Street, Suite 500
Midland, Texas 79701
432.813.1992

CARMONA RESOURCES

3.0 Conclusions

Based on the assessment results and the analytical data, no further actions are required at the site. The final C-141 is attached in Appendix A of the original request for closure. Marathon formally requests the closure of the spill. If you have any questions regarding this report or need additional information, please get in touch with us at 432-813-1992.

Sincerely,
Carmona Resources, LLC

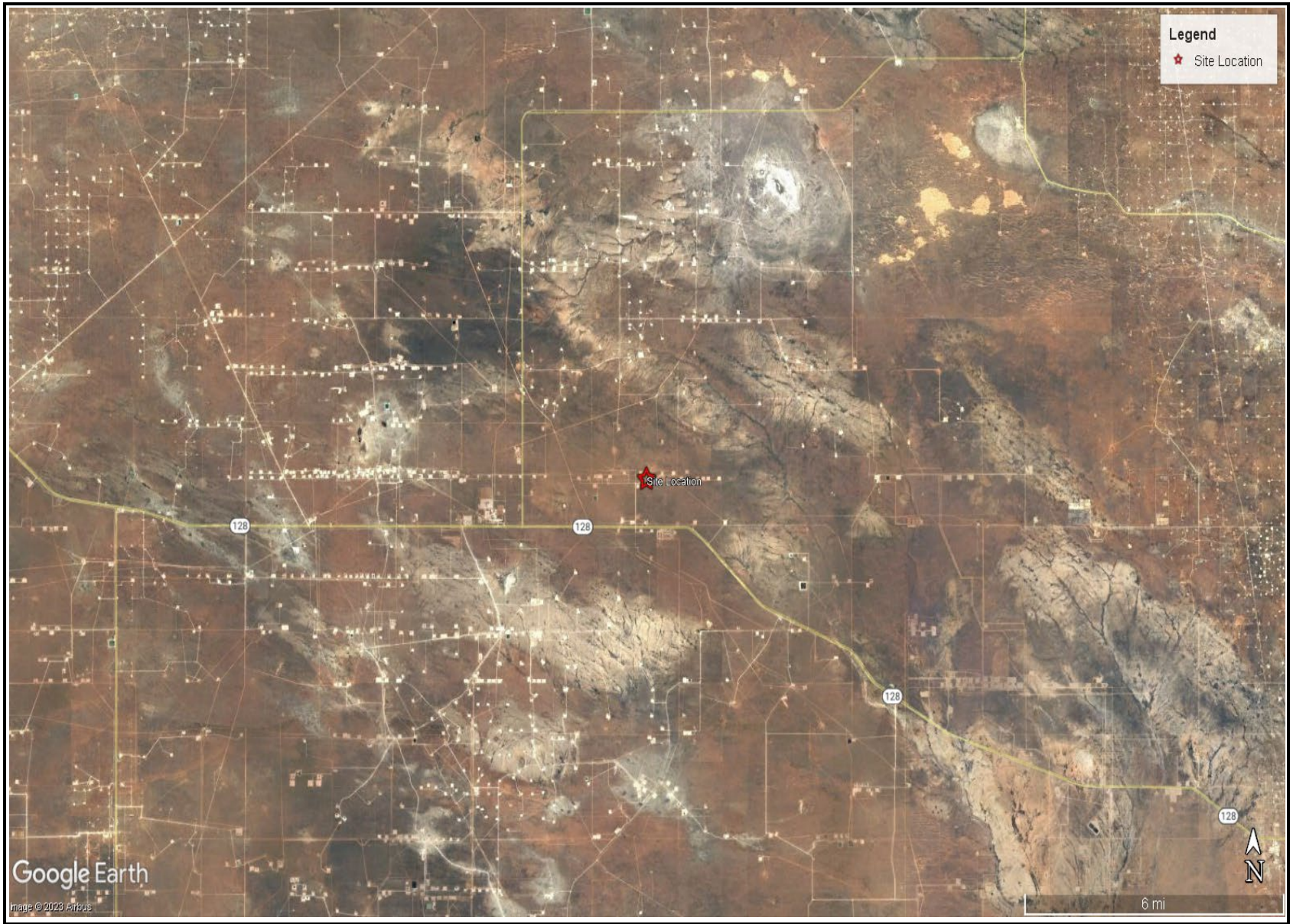


Mike Carmona
Environmental Manager

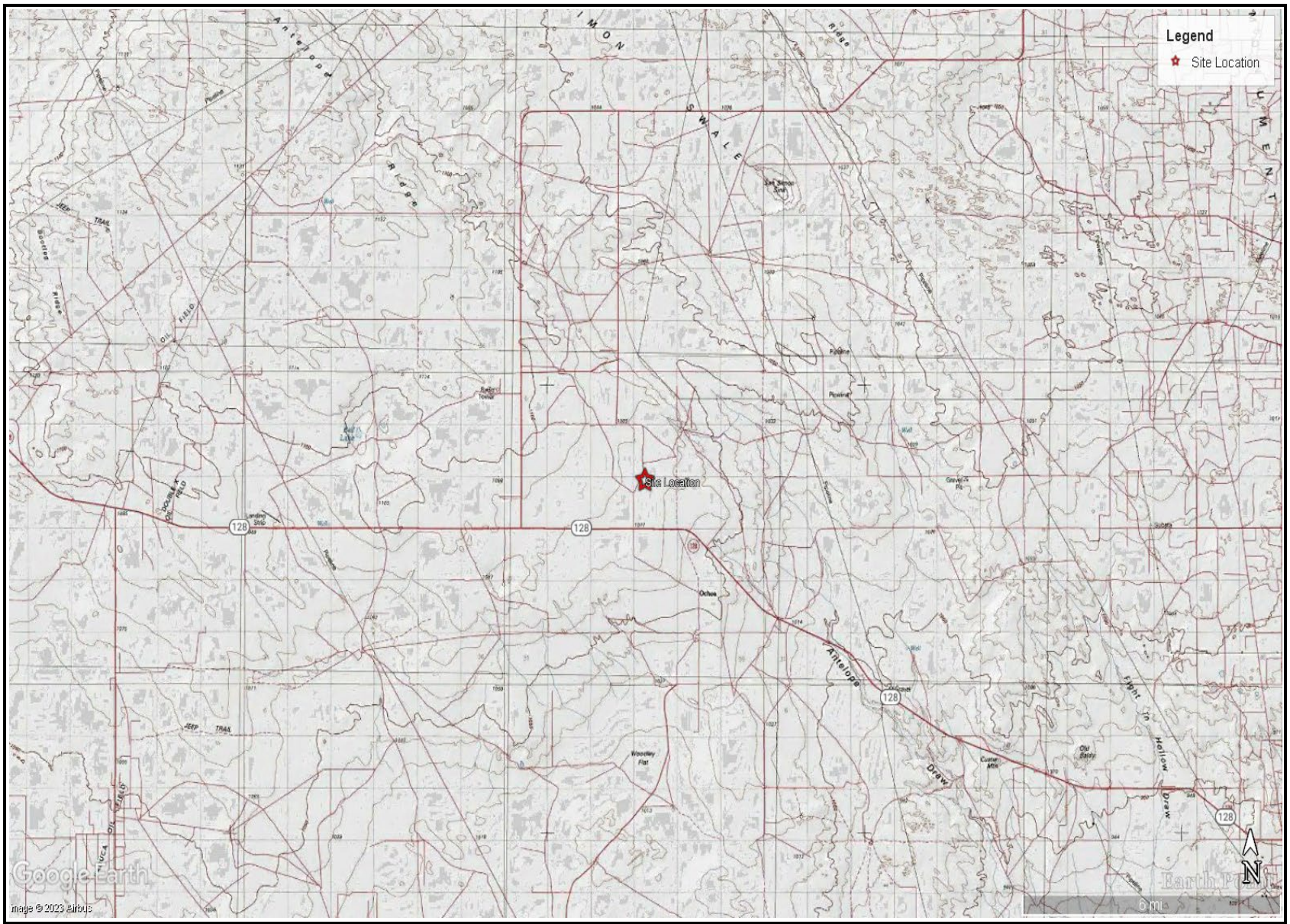
Clinton Merritt
Sr. Project Manager

FIGURES

CARMONA RESOURCES



OVERVIEW MAP MARATHON OIL CORPORATION FLOWMASTER 24 34 15 SB #4H LEA COUNTY, NEW MEXICO 32.223850°, -103.461910°	CARMONA RESOURCES	FIGURE 1



TOPOGRAPHIC MAP MARATHON OIL CORPORATION FLOWMASTER 24 34 15 SB #4H LEA COUNTY, NEW MEXICO 32.223850°, -103.461910°	CARMONA RESOURCES	FIGURE 2

SAMPLE LOCATION MAP MARATHON OIL CORPORATION FLOWMASTER 24 34 15 SB #4H LEA COUNTY, NEW MEXICO 32.223850°, -103.461910°	CARMONA RESOURCES	FIGURE 3

APPENDIX B

CARMONA RESOURCES

Table 1
Marathon Oil Corporation
Flowmaster 24 34 15 SB #4H
Lea County, New Mexico

Sample ID	Date	Depth (ft)	TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			GRO	DRO	MRO	Total						
S-1	6/21/2023	0-0.5	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	160
	"	1	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
	"	1.5	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	96.0
Regulatory Criteria [A]						100 mg/kg	10 mg/kg				50 mg/kg	600 mg/kg

(-) Not Analyzed

[A] – Table 1 - 19.15.29 NMAC

mg/kg - milligram per kilogram

TPH- Total Petroleum Hydrocarbons

ft-feet

(S) - Sample Point

APPENDIX C

CARMONA RESOURCES

PHOTOGRAPHIC LOG

Marathon Oil Corporation

Photograph No. 1

Facility: Flowmaster 24 34 15 SB #4H

County: Lea County, New Mexico

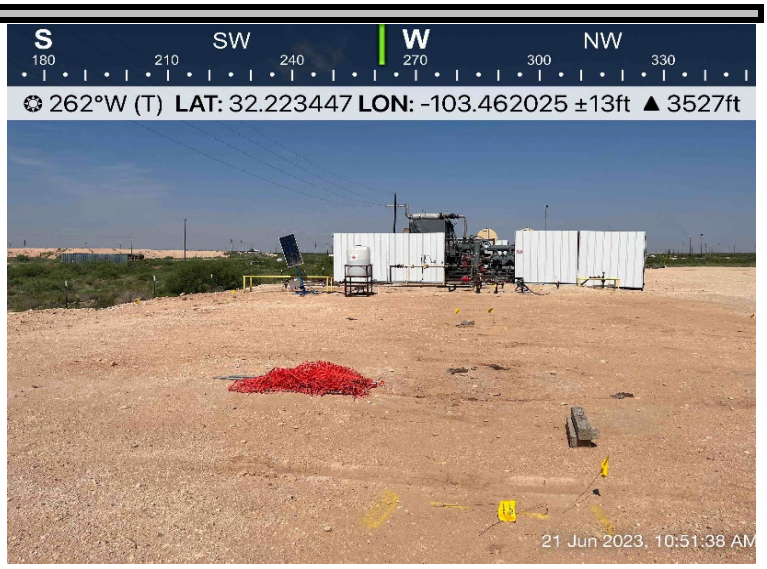
Description:
View Southwest of sample point S-1.

Photograph No. 2

Facility: Flowmaster 24 34 15 SB #4H

County: Lea County, New Mexico

Description:
View West of sample point S-1.



Photograph No. 3

Facility: Flowmaster 24 34 15 SB #4H

County: Lea County, New Mexico

Description:
View Northwest of sample points S-1.

APPENDIX D

CARMONA RESOURCES

CARDINAL Laboratories

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

June 28, 2023

CLINT MERRITT

CARMONA RESOURCES

310 W WALL ST SUITE 415

MIDLAND, TX 79701

RE: FLOWMASTER 24 34 15 SB #4H

Enclosed are the results of analyses for samples received by the laboratory on 06/23/23 12:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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:

CARMONA RESOURCES
CLINT MERRITT
310 W WALL ST SUITE 415
MIDLAND TX, 79701
Fax To:

Received:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/28/2023	Sampling Type:	Soil
Project Name:	FLOWMASTER 24 34 15 SB #4H	Sampling Condition:	Cool & Intact
Project Number:	2050	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NEW MEXICO		

Sample ID: S - 1 (0-0.5') (H233278-01)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.28	114	2.00	4.59	
Toluene*	<0.050	0.050	06/24/2023	ND	2.15	107	2.00	0.640	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.25	112	2.00	3.92	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.77	113	6.00	2.78	
Total BTEX	<0.300	0.300	06/24/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *71.5-134*

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	06/23/2023	ND	416	104	400	3.77	

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	06/23/2023	ND	171	85.4	200	0.783	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	180	90.0	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane *92.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

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:

CARMONA RESOURCES
CLINT MERRITT
310 W WALL ST SUITE 415
MIDLAND TX, 79701
Fax To:

Received:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/28/2023	Sampling Type:	Soil
Project Name:	FLOWMASTER 24 34 15 SB #4H	Sampling Condition:	Cool & Intact
Project Number:	2050	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NEW MEXICO		

Sample ID: S - 1 (1') (H233278-02)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.28	114	2.00	4.59	
Toluene*	<0.050	0.050	06/24/2023	ND	2.15	107	2.00	0.640	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.25	112	2.00	3.92	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.77	113	6.00	2.78	
Total BTEX	<0.300	0.300	06/24/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	06/23/2023	ND	416	104	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	06/23/2023	ND	171	85.4	200	0.783	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	180	90.0	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane *96.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

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:

CARMONA RESOURCES
CLINT MERRITT
310 W WALL ST SUITE 415
MIDLAND TX, 79701
Fax To:

Received:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/28/2023	Sampling Type:	Soil
Project Name:	FLOWMASTER 24 34 15 SB #4H	Sampling Condition:	Cool & Intact
Project Number:	2050	Sample Received By:	Tamara Oldaker
Project Location:	LEA COUNTY, NEW MEXICO		

Sample ID: S - 1 (1.5') (H233278-03)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.28	114	2.00	4.59	
Toluene*	<0.050	0.050	06/24/2023	ND	2.15	107	2.00	0.640	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.25	112	2.00	3.92	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.77	113	6.00	2.78	
Total BTEX	<0.300	0.300	06/24/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	06/23/2023	ND	416	104	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	06/23/2023	ND	171	85.4	200	0.783	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	180	90.0	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane *93.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Chain of Custody

Work Order No: H233278

Page 1 of 1

Project Manager:	Clinton Merritt	Bill to: (if different)	Melodie Sanjari
Company Name:	Carmona Resources	Company Name:	Marathon Oil Corporation
Address:	310 W Wall St Ste 500	Address:	990 Town and Country Blvd
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Houston, TX 77024
Phone:		Email:	msanjari@marathonoil.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Flowmaster 24 34 15 SB #4H	Turn Around	
Project Number:	2050	☑ Routine	☐ Rush
Project Location	Lea County, New Mexico	Due Date:	5 Day TAT
Sampler's Name:	CCM		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Received Intact:	(Yes) No	Thermometer ID:	113
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.6°c
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	1.2°c
Total Containers:		Corrected Temperature:	0.6°c

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Date	Time	Soil	Water	Grab/ Comp	# of Cont	Pres. Code	Parameters: BTEX 8021B	TPH 8015M (GRO + DRO + MRO)	Chloride 4500	Sample Comments
S-1 (0-0.5')	6/21/2023	9:25	X		G	1		X	X	X	
S-1 (1')	6/21/2023	9:28	X		G	1		X	X	X	
S-1 (1.5')	6/21/2023	9:30	X		G	1		X	X	X	

1
2
3

Comments: Email results to Mike Carmona mcarmona@carmonaresources.com, Conner Moehring cmoehring@carmonaresources.com, Clint Merritt MerrittC@carmonaresources.com

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Ariana Arias	6-23-23 1210	Tamara Oldaker	

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 237840

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 237840
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	7/20/2023