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Oil Conservation Division

<u>Remediation Plan Checklist</u>: Each of the following items must be included in the plan.

Incident ID	nAPP2231924026
District RP	
Facility ID	
Application ID	

### **Remediation Plan**

Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation. Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction. Extents of contamination must be fully delineated. Contamination does not cause an imminent risk to human health, the environment, or groundwater. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Printed Name: Melodie Sanjari Title: Environmental Professional Signature: Melodie Sanjari Date: 2/10/2023 email: msanjari@marathonoil.com Telephone: 575-988-8753 OCD Only Received by: \_\_\_\_\_ Jocelyn Harimon \_\_\_\_\_ Date: 2/13/2023 Approved Approved with Attached Conditions of Approval Denied X Deferral Approved Signature: Robert Hamlet Date: 6/13/2023



## deferral request MARATHON OIL COMPANY

Created for submission to New Mexico Oil Conservation Division on 02/10/2023

ASHLEY GIOVENGO Project Environmental Scientist

ENERGIZING AMERICA

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February 10, 2023

### **Environmental Incident Group**

State of New Mexico Energy, Minerals, and Natural Resources New Mexico Oil Conservation Division 811 South First Street Artesia, New Mexico 88210

### RE: DEFERRAL REQUEST

COMPANY	Marathon Oil Company
LOCATION	Taylor Deep 12 Federal #006
ΑΡΙ	30-015-38143
PLSS	Unit A Sec 12 T18S R31E
GPS	32.7682724, -103.8161163
INCIDENT ID	nAPP2231924026

### BACKGROUND

Wescom, Inc., hereafter referred to as Wescom, has prepared this Remediation Report & Deferral Request on behalf of Marathon Oil Company, hereafter referred to as Marathon, regarding the release at the Taylor Deep 12 Federal #006 (Site) located in Unit A, Section 12, Township 18 South and Range 31 East in Eddy County, New Mexico. The GPS coordinates are as follows: North 32.7682724 and West -103.8161163. Surface owner of the Site is Bureau of Land Management (BLM).

On November 14, 2022, Marathon personnel arrived onsite to standing fluid inside the tank and heater treater containments. It was determined that the well was frac hit, which caused a large surge in production. This incident resulted in the release of approximately 91.5 barrels (bbls) of crude oil and 213.7 bbls of produced water inside the gravel-lined secondary containments. The large volume of standing fluid inside the containments caused the berms to fail and impact two areas off-pad. An area measuring approximately 2,877 square feet (sq. ft.) was impacted on the Southwest corner of the tank containment and an area measuring approximately 1,172 sq. ft. in size was impacted on the South side of the heater treater containment as shown in Figure 1.

Wescom personnel arrived onsite on November 16, 2022, to place an emergency one-call and to complete an initial scrape of the most impacted areas off site. On December 02, 2022, Wescom personnel returned to the Site to perform delineation sampling of the off-pad spill areas. Wescom personnel also completed a liner inspection of



Energizing America wescominc.com | info@wescominc.com | 218-724-1322 the tank containment on January 11, 2023, and it was determined that there were five holes below the fluid level in the tank containment liner and one area behind the center production tank where the liner was separating. A hydrovac and hand crew was utilized to remove the gravel from inside tank containment prior to the liner inspection.

On January 12, 2023, Wescom completed a liner inspection of the heater treater containment, and three holes were found in the Northeast corner of the containment liner. The remaining portion of the heater treater containment was covered with gravel and removal of the gravel posed a high risk for puncture or damage via hand tools. As noted in the liner Integrity Inspection Form, gravel was removed by hand to expose 5 additional portions of the liner, roughly two sq. ft. in area. There no rips, tears or pinholes observed in the exposed areas, see Attachment F.

Remediation of the off-pad spill areas was conducted on January 12, 2023, and final confirmation samples were collected. Confirmation samples collected from spill area on the Southwest corner of the tank containment and from the spill area on the South side of the heater treater all met the reclamation standard for off-pad spill cleanups.

Wescom personnel returned to the Site on January 13, 2023, to deliniate the soils beneath the holes in the containment liners. The liner was cut to allow sampling beneath the liners and was immediately repaired by Wescom. Samples collected on surface indicated impact; additional samples were collected to determine the vertical extent. Removal of impacted soils below the lined secondary containments would not be possible without deconstruction of production equipment and impacted soils do not pose imminent risk. Therefore, Marathon respectfully requests deferral for the removal of soils below the tank and heater treater containments until the well is plugged and the facilities are removed.

### SURFACE & GROUND WATER

The New Mexico Office of the State Engineer (OSE) records indicates the nearest depth to groundwater measurement is greater than 105 feet below ground surface (bgs) and is 3.1 miles Northeast of the Site. No playas or lakes are located within a one-mile radius of this Site (Attachment C).

### KARST POTENTIAL

According to data from the Bureau of Land Management, this Site is located within low karst potential as shown in Attachment D. There are no indicators of karst around the Site surface.

### TARGET REMEDIAL LEVELS

The target cleanup levels are determined using the NMOCD Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC, inserted below) including karst guidelines from the Bureau of Land Management. This Site is greater



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than 0.5 miles from the nearest depth to groundwater measurement and therefore, the applicable Recommended Remediation Action Levels (RRALs) are 10 parts per million (ppm) Benzene, 50 ppm combined benzene, toluene, ethyl benzene, and xylene (BTEX) and 100 ppm Total Petroleum Hydrocarbons (TPH). A chloride concentration at or below 600 mg/kg (ppm) in the soil is also required.

Closure Crite	ria (19. <u>15</u> .	.29.12.B(4) and Tab	le 1 NMA	C)		
Taylor Deep	12 Federal	#006 — 32.768272, -10	03.816116			
Depth to Groundwater		Clo	sure Criteria	(unites in mg	/kg)	
		Chloride * numberical				
		limit or background,				
		whichever is greater	TPH	GRO+DRO	BTEX	Benzene
Based on high karst potential		600	100		50	10
No water data within 0.5 mile radius	3.1 Miles	600	100		50	10
less than 50 ft bgs		600	100		50	10
51 ft to 100 ft bgs		10000	2500	1000	50	10
greater than 100 ft bgs		20000	2500	1000	50	10
Surface Water	Yes or No		lf ye	s, then		1
< 300 feet from continuously flowing watercourse or other	No					
significant watercourse?	-					
< 200 feet 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	No					
watering purposes?						
< 1000 feet from fresh water well or spring?	No					
Human and Other Areas						
< 300 feet from an occupied permanent residence, school,	N					
hospital, institution or church?	No					
Within incorporated municipal boundaries or within a	N La					
defined municipal fresh water well field?	No					
< 100 feet from wetland?	No					
Within area overlying a subsurface mine?	No					
Within an unstable area?	No					
Within a 100-year floodplan?	No					

Table: Closure Criteria Statistics

### SITE ASSESSMENT AND DELINEATION

On November 16, 2022, Marathon contracted Wescom to complete and initial scrape of the two impacted areas off-pad -- the spill area on the Southwest corner of the tank containment and the spill area on the South side of the heater treater containment (see Figures 1 and 2). Wescom personnel returned to the site on December 02, 2022, to complete horizontal and vertical delineation sampling of the off-pad spill areas. Delineation samples SS01 through SS04 were collected from the spill area on the South side of the heater treater and delineation samples SS05 through SS08 were collected from the spill area on the Southwest corner of the tank containment as shown in Figure 1. All samples were below the strictest criteria per Table 1 NMAC and showed the initial response was successful. A background sample, BG01, was collected 62 feet South of the caliche pad.

On January 11, 2023, Wescom completed a liner inspection of the tank containment and during the liner inspection, five holes were observed. In addition to the five holes, there was one area located directly behind the middle production tank where the liner was separating as shown in Attachment B. On January 12, 2023, Wescom personnel completed a liner inspection on the heater treater containment liner and three holes were found in the Northeast corner of the containment liner. Due to the presence of gravel in the remainder of the



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containment, gravel was carefully removed by hand to expose five portions of the liner roughly two sq. ft. in area, see Attachment F. In the exposed areas, there were no rips, tears or pinholes observed as shown in Attachment B. All remaining gravel was also pressure washed to be free of any contamination from the initial release.

Wescom personnel returned to the Site on January 13, 2023, to complete delineation sampling beneath the containment liners. Vertical delineation samples (SS09 through SS11) were collected from the three holes in the Northeast corner of the containment liner. Vertical delineation to the strictest criteria was achieved at surface in sample location SS09 and at one-foot bgs in sample locations SS10 and SS11. Horizontal delineation samples SS17C and SS18B were collected on the North and West sides of the heater treater containment as shown in Figure 3.

Vertical delineation samples (SS12 through SS16) were collected from the five holes in the tank containment liner and sample SS21 was collected from the separation in the liner that was observed behind the center production tank. Impacts did not extend below surface in sample location SS13, however impacts were observed at a depth of one-foot bgs in sample locations SS14, and SS16 and at two feet bgs in sample location SS21. Sample SS19A and SS20 were collected from the East and North sides of the tank containment to establish horizontal delineation (see Figure 3).

A total of 35 delineation samples were jarred and sent to Hall Environmental, for laboratory analysis. Delineation sample locations are presented in Figures 1 and 3; laboratory analysis results are presented in Table 1 and laboratory analytical reports are included in Attachment E.

### REMEDIATION ACTIVITES

On November 16, 2022, Marathon contracted Wescom to complete and initial scrape of the two impacted areas off-pad, as shown in Figure 2. Wescom personnel returned to the Site on January 12, 2023, to oversee the removal of the remaining impacted soils and to conduct final confirmation sampling. A backhoe was used to remove approximately 200 yards of contaminated soil from the off-pad spill areas. Impacted material from the spill areas was hauled to an approved disposal facility.

Wescom personnel collected 17 composite confirmation samples and six side wall samples over the three-day sampling and excavation period. All the confirmation samples were below the strictest criteria per Table 1 NMAC and meet the reclamation standard for off-pad spill cleanups, as shown in Table 2. All soil samples were properly packaged, preserved, and transported to Hall Environmental by chain of custody, and analyzed for Total Petroleum Hydrocarbons, or TPH, —Method 8015D, BTEX—Method 8021B, and Chlorides—Method 300.0. Confirmation sample locations are presented in Figure 2 and laboratory analytical reports are included in Attachment E.

The required 48-hour confirmation sampling and liner inspection notifications were sent on January 9, 2023, to OCD.Enviro@emnrd.nm.gov and are included in Attachment G.



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### REQUEST FOR DEFERRAL

On behalf of Marathon, Wescom requests to defer approximately 90 cubic yards of contaminated soil from beneath the tank containment and 7 cubic yards of soil from beneath the heater treater containment. Deferral request is for two areas indicated on Figure 4, based on the logic below, until the Taylor Deep 12 Federal #006 Site is abandoned, and reclamation activities commence.

- Due to the location of the contaminated soil beneath the tank and heater treater containments it is not practical to remove for remediation. The wellhead is currently in production and would require shutting in for an extended period to remove substrate. Areas of requested deferral are shown in Figure 4.
- Confirmation areas and samples collected from the off-pad spill areas are below applicable RRALs for the Site and meet the reclamation standard 19.15.29.13 NMAC.
- The off-pad spill areas have been horizontally and vertically delineated.
- Release points inside the tank and heater treater containments have been vertically delineated. Areas surrounding the tank and heater treater containments have been horizontally delineated.
- All delineation samples are below the applicable RRALs for the Site.

If you have any questions or comments, please do not hesitate to call Ms. Ashley Giovengo at (505) 382-1211.

Sincerely,

Wescom, Inc.

#### Ashley Giovengo

Project Environmental Scientist

cc: Melodie Sanjari, Marathon Oil Company Environmental Incident Group, NMOCD



# REFERENCE MATERIALS

### FIGURES

- FIGURE 1. Delineation Sampling (Off-Pad)
- FIGURE 2. Confirmation Sampling
- FIGURE 3. Delineation Sampling (Containments)
- FIGURE 4. Deferral Areas

### TABLES

- **TABLE 1.** Laboratory Analysis Results: Delineation Samples
- TABLE 2. Laboratory Analysis Results: Confirmation Samples

### ATTACHMENTS

- ATTACHMENT A. C-141
- ATTACHMENT B. Site Photos
- ATTACHMENT C. Closure Criteria Supporting Documents
- ATTACHMENT D. Karst Map
- ATTACHMENT E. Hall Environmental Laboratory Analysis Reports
- ATTACHMENT F. Liner Integrity Inspection Forms
- ATTACHMENT G. 48-hour Confirmation Notification Emails



## FIGURES

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### FIGURE 2. **CONFIRMATION SAMPLING** (OFF-PAD)

Taylor Deep 12 Federal #006 Incident ID: nAPP2231924026 API: 30-015-38143 **GPS** Coordinates: 32.7682724, -103.8161163 Eddy County, New Mexico Marathon Oil Company

### LEGEND

•











### FIGURE 4. **DEFERRAL AREAS**

Taylor Deep 12 Federal #006 Incident ID: nAPP2231924026 API: 30-015-38143 GPS Coordinates: 32.7682724, -103.8161163 Eddy County, New Mexico Marathon Oil Company

#### LEGEND

Delineation Sample Locations

Area of Requested Deferral (Tank Containment)

Area of Requested Deferral (Heater Treater Containment)







## TABLES

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Ta	Taylor Deep 12 Federal #006   nAPP2231924026						
	Ν	larathon O	il Compa	any   2.09.20	023		
Table 1. Laboratory Analysis Results: Delineation Samples							
Sar	Sample Description			roleum Hydrod	arbons	Inorganic	
			V	/olatile	Extractable		
			Benzene	Total BTEX	TPH	Chloride	
Sample ID	Depth (ft.)	Date	(mk/kg)	(mk/kg)	(mk/kg)	(mk/kg)	
<b>Closure Cri</b>	teria		10	50	100	600	
BG01	0	12/2/2022	ND	ND	ND	ND	
BG01	1	12/2/2022	ND	ND	ND	ND	
SS01	0	12/2/2022	ND	ND	ND	ND	
SS02	0	12/2/2022	ND	ND	ND	ND	
SS03A	0	12/2/2022	ND	ND	ND	ND	
SS04	0	12/2/2022	ND	ND	39	ND	
SS04	1	12/2/2022	ND	ND	ND	ND	
SS05	0	12/2/2022	ND	ND	ND	ND	
SS06	0	12/2/2022	ND	ND	ND	ND	
SS07	0	12/2/2022	ND	ND	ND	ND	
SS08	0	12/2/2022	0.39	262.39	110000	130	
SS08	1	12/2/2022	ND	ND	ND	100	
SS09	0	1/13/2023	ND	ND	ND	ND	
SS09	1	1/13/2023	ND	ND	ND	ND	
SS10	0	1/13/2023	ND	2.9	5607.9	ND	
SS10	1	1/13/2023	ND	ND	ND	ND	
SS11	0	1/13/2023	ND	1.2	5700	ND	
SS11	1	1/13/2023	ND	ND	ND	ND	
SS12	0	1/13/2023	ND	ND	2800	ND	
SS12	1	1/13/2023	ND	ND	ND	ND	
SS13	0	1/13/2023	ND	ND	29	170	
SS13	1	1/13/2023	ND	ND	ND	ND	
SS14	0	1/13/2023	ND	4.4	3800	140	
SS14	1	1/13/2023	ND	ND	ND	320	
ABBREVIAT	IONS						
BTEX — Benzei	ne, Toluene, Etł	nylene, Xylene		GRO — Gasoline R	ange Organics		
DRO — Diesel Range Organics ND — Non-detect							
ft. — Feet mg/kg — Milligrams per Kilogram							
TPH — Total Petroleum Hydrocarbons							
Notes	Notes						
Bold Red - Results are above closure criteria							
Gray Highlight - Background Samples							



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Taylor Deep 12 Federal #006   nAPP2231924026							
Marathon Oil Company   2.09.2023							
Table 1. Laboratory Analysis Results: Delineation Samples							
Sar	nple Descri	otion	Peti	roleum Hydroc	arbons	Inorganic	
			V	olatile	Extractable		
			Benzene	Total BTEX	TPH	Chloride	
Sample ID	Depth (ft.)	Date	(mk/kg)	(mk/kg)	(mk/kg)	(mk/kg)	
<b>Closure Cri</b>	teria		10	50	100	600	
SS15	0	1/13/2023	ND	ND	1420	ND	
SS15	1	1/13/2023	ND	ND	ND	340	
SS16	0	1/13/2023	ND	ND	290	840	
SS16	1	1/13/2023	ND	ND	ND	230	
SS17B	0	1/13/2023	ND	ND	12	2200	
SS17C	0	1/31/2023	ND	ND	ND	ND	
SS18	0	1/13/2023	ND	ND	3500	ND	
SS18B	0	2/7/2023	ND	ND	ND	75	
SS19A	0	1/13/2023	ND	ND	ND	ND	
SS20	0	1/13/2023	ND	ND	ND	ND	
SS21	0	1/13/2023	ND	130.89	20700	ND	
SS21	1	1/13/2023	ND	ND	115	ND	
SS21	2	1/31/2023	ND	ND	ND	ND	
ABBREVIAT	IONS						
BTEX — Benzei	ne, Toluene, Eth	iylene, Xylene		GRO — Gasoline Ra	ange Organics		
DRO — Diesel	Range Organics	i		ND — Non-detect			
ft. — Feet	ft. — Feet mg/kg — Milligrams per Kilogram						
TPH — Total Petroleum Hydrocarbons							
Notes							
Bold Red - Res	ults are above o	closure criteria					
Gray Highlight	- Background S	amples					



	Taylo	r Deep 12	Federa	al #006   r	APP223192	24026	
		Marat	thon Oil	Company	2.09.23		
	Table 2.	Laboratory	/ Analysi	s Results: Co	onfirmation <b>S</b>	Samples	
Sam	ole Descrip	tion		Petroleum	Hydrocarbons		Inorganic
			V	′olatile	Extrac	table	
			Benzene	Total BTEX	ТРН	GRO+DRO	Chloride
Sample ID	Depth (ft.)	Date	(mk/kg)	(mk/kg)	(mk/kg)	(mk/kg)	(mk/kg)
<b>Closure Crite</b>	ria		10	50	2500	1000	20000
CONF01	1.5	1/12/2023	ND	ND	ND	ND	ND
CONF02	1.5	1/12/2023	ND	ND	ND	ND	ND
CONF03	1.5	1/12/2023	ND	ND	ND	ND	ND
CONF04	1.5	1/12/2023	ND	ND	13	13	ND
CONF05	1.5	1/12/2023	ND	ND	ND	ND	ND
CONF06	1.5	1/12/2023	ND	ND	13	13	ND
CONF07	1.5	1/12/2023	ND	ND	ND	ND	ND
CONF08	2	1/13/2023	ND	ND	ND	ND	130
CONF09	1.5	1/12/2023	ND	ND	ND	ND	ND
CONF10	1.5	1/12/2023	ND	ND	ND	ND	ND
CONF11 Wall	0.5	1/12/2023	ND	ND	ND	ND	ND
CONF12 Wall	0.5	1/12/2023	ND	ND	ND	ND	ND
CONF13 Wall	0.5	1/12/2023	ND	ND	ND	ND	ND
CONF14 Wall	0.5	1/12/2023	ND	ND	ND	ND	ND
CONF15	0.5	1/13/2023	ND	ND	ND	ND	ND
CONF16	0.5	1/13/2023	ND	ND	ND	ND	ND
CONF17	0.5	1/13/2023	ND	ND	ND	ND	ND
CONF18	0.5	1/13/2023	ND	ND	ND	ND	ND
CONF19	0.5	1/13/2023	ND	ND	ND	ND	ND
CONF20	0.5	1/13/2023	ND	ND	9.3	9.3	ND
CONF21	1	1/13/2023	ND	ND	ND	ND	ND
CONF22 Wall	0.5	1/13/2023	ND	ND	ND	ND	ND
CONF23 Wall	0	1/13/2023	ND	ND	ND	ND	ND
ABBREVIATIO	NS						
BTEX — Benzene,	Toluene, Ethy	lene, Xylene		GRO — Gasoline Ra	ange Organics		
DRO — Diesel Range Organics ND — Non-detect							
ft. — Feet mg/kg — Milligrams per Kilogram							
TPH — Total Petroleum Hydrocarbons							
Notes							
Bold Red - Results	s are above clo	osure criteria					
Gray Highlight - Ba	ackground Sar	nnles					

Gray Highlight - Background Samples

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## ATTACHMENT A

C-141



Released to Imaging: 6/13/2023 9:17:49 AM

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	nAPP2231924026
District RP	
Facility ID	
Application ID	

## **Release Notification**

### **Responsible Party**

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Melodie Sanjari	Contact Telephone 575-988-8753
Contact email msanjari@marathonoil.com	Incident # (assigned by OCD)
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 8220	

### **Location of Release Source**

Latitude 32.7682724

Longitude -103.8161163

(NAD 83 in decimal degrees to 5 decimal places)

Site Name TAYLOR DEEP 12 FEDERAL #006	Site Type Oil & Gas Facility
Date Release Discovered: 11/14/2022	API# (if applicable) 30-015-38143

Unit Letter	Section	Township	Range	County
А	12	18S	31E	Eddy

Surface Owner: State Federal Tribal Private (Name: \_

### Nature and Volume of Release

Materi	Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)							
Crude Oil	Volume Released (bbls) 91.5	Volume Recovered (bbls) 78						
Produced Water	Volume Released (bbls) 213.7	Volume Recovered (bbls) 192						
	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

Night operator arrived on location to standing fluid within the tank and heater treater, gravel filled secondary containments and all of the tanks full. The well was shut in and it was determined that the well was frac hit, which caused a large surge in production. The following morning, it was noted that the large volume had caused the berms to fail which allowed fluid to run on the pad and slightly on the pasture. A total of 270 bbl. of the 305 total was recovered and the impacted surficial material was removed to prevent lateral or vertical migration.

ceived by OCD: 2/10/2023 1:45:59 PM rm C-141 State of New Mexico			Page 20 of
		Incident ID	nAPP2231924026
ge 2	Oil Conservation Division	District RP	
		Facility ID	
		Application ID	
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 par Volume.	ty consider this a major release?	?
If YES, was immediate n Yes, NOR submitted 11/2	otice given to the OCD? By whom? To whom? Wh 15/2022	en and by what means (phone, o	email, etc)?
	Initial Respons	e	
The responsible	party must undertake the following actions immediately unless the	y could create a safety hazard that wou	ld result in injury

 $\square$  The source of the release has been stopped.

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

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

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

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

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

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

Printed Name: <u>Melodie Sanjari</u>	Title:Environmental Professional
Signature: <u>Melodie Sanjari</u>	Date: 11/172022
email: <u>msanjari@marathonoil.com</u>	Telephone: <u>575-988-8753</u>
OCD Only Received by: Jocelyn Harimon	Date: 2/13/2023

Received by OCD: 2/10/2023 1:45:59 PM Form C-121 State of New Mexico

Oil Conservation Division

	rage 21 0J 13
Incident ID	nAPP2231924026
District RP	
Facility ID	
Application ID	

### Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>108</u> (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 <b>not</b> 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

Page 3

- Data table of soil contaminant concentration data
- $\boxtimes$  Depth to water determination
- Determination of water sources and significant watercourses within <sup>1</sup>/<sub>2</sub>-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.

Received by OCD: 2/10/2	023 1:45:59 PM State of New Mexico			Page 22 of 154
	Oil Conservation Division	Incident ID	nAPP2231924026	
Page 4			District RP	
			Facility ID	
			Application ID	
regulations all operators ar public health or the environ failed to adequately investi addition, OCD acceptance and/or regulations. Printed Name: <u>Melor</u> Signature: <u>Melor</u> email: <u>msanjari@mar</u>	die Sanjari	Cations and perform CD does not relieve t to groundwater, s esponsibility for co Title: Date: 2/10/20	n corrective actions for rele- e the operator of liability sho urface water, human health ompliance with any other fec <u>Environmental</u>	ases which may endanger ould their operations have or the environment. In
OCD Only				
Received by: Joc	elyn Harimon	Date: _2	2/13/2023	

Received by OCD: 2/10/2023 1:45:59 PM Form C-141 State of New Mexico

Oil Conservation Division

<u>Remediation Plan Checklist</u>: Each of the following items must be included in the plan.

Incident ID	nAPP2231924026
District RP	
Facility ID	
Application ID	

### **Remediation Plan**

Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation. Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction. Extents of contamination must be fully delineated. Contamination does not cause an imminent risk to human health, the environment, or groundwater. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Title: Environmental Professional Printed Name: Melodie Sanjari Signature: Melodie Sanjari Date: 2/10/2023 email: msanjari@marathonoil.com Telephone: 575-988-8753 OCD Only Received by: \_\_\_\_\_ Jocelyn Harimon \_\_\_\_\_ Date: 2/13/2023 Approved Approved with Attached Conditions of Approval Denied Deferral Approved Signature: Date:

Page 5

## ATTACHMENT B

Site Photos





Spill Area



Spill Area





Spill Area



Initial Scrape



Taylor Deep 12 Federal #006 | Incident: nAPP2231924026

Page 3 of 21



Initial Scrape



Initial Scrape





Contaminated Soil



Heater Treater Spill Area





Heater Treater Spill Area



Heater Treater Spill Area

 Energizing America
 Taylo

 wescominc.com | info@wescominc.com | 218-724-1322



Hole in liner behind stairs (SS12)



Hole 5ft South of stairs (SS13)





Hole 30ft South of Northwest Corner (SS16)



Hole 20ft North of Southwest Corner (SS15)





Hole 15ft North of Southeast corner (SS14)



Hole 15ft North of Southeast corner (SS14)

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Excavated area West of tanks



Excavated area West of tanks





Excavated area South of Heater Treater



Hand digging South of tanks





Excavated area South of Heater Treater



2 Holes West of stairs at heater treater (SS09 & SS10)

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Hole North of heater treater (SS11)



Spot check under gravel West of heater treater

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Spot checks under gravel Southwest of heater treater



Spot check under gravel South of heater treater

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Spot check under gravel Southeast of heater treater



Delineation under liner (SS09 & SS10)

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Delineation under liner (SS11)



Delineation under liner (SS12 & SS13)





Delineation under liner (SS14)



Delineation under liner (SS15)

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Delineation under liner (SS16)



Liner holes repaired



Taylor Deep 12 Federal #006 | Incident: nAPP2231924026

Page 18 of 21

**Released to Imaging: 6/13/2023 9:17:49** AM



Liner holes repaired



Liner holes repaired





Liner separation behind center tank and delineation under liner (SS21)



Excavated area South of heater treater





Excavated soil removed



Recollect sample SS21 - 2' & 3'

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 info@wescominc.com
 218-724-1322



Recollect sample SS17C



Recollect sample SS18B



# ATTACHMENT C

## **Closure Criteria Supporting Documents**

Energizing America wescominc.com | info@wescominc.com | 218-724-1322 ?

## New Mexico Office of the State Engineer Wells with Well Log Information

(A CLW###### in the POD suffix indicates the POD has been replaced	(R=POE been rep O=orpha	laced,														
& no longer serves a	C=the fi	le is	· 1	ers are 1=1												
water right	closed)			(quarters	are small	lest to	larges	t)	(NAD83	3 UTM in meters)				(in fe	et)	
		POD			qqq								Log File	Depth	Depth	License
POD Number	Code	Subbasin	County	Source	64164	Sec	Tws	Rng	Х	Y	Distance Start Date	Finish Date	Date	Ŵell	Water Driller	Number
<u>CP 00672</u>		СР	LE	Shallow	4 4	07	18S	32E	612475	3624947*	2035 07/17/1992	08/07/1992	08/12/1992	524	430 ABBOTT, MURRELL	46
CP 00672 CLW475398	0	СР	LE	Shallow	4 4	07	18S	32E	612475	3624947*	2035 01/22/1985	01/29/1985	02/08/1985	540	460 FELKINS, LARRY	882
<u>CP 00566 POD1</u>		СР	LE	Shallow	4 4 1	04	18S	32E	614960	3627280*	4211 06/01/1977	06/03/1977	06/13/1977	133	65 ABBOTT, MURRELL	46
<u>RA 12721 POD8</u>		RA	LE	Shallow	1 2 1	33	17S	32E	614640	3629463	4963 09/28/2020	09/28/2020	10/14/2020	130	108 JOHN W WHITE	1456
Record Count: 4																

#### UTMNAD83 Radius Search (in meters):

```
Easting (X): 610885
```

Northing (Y): 3626218.13

**Radius:** 5000

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

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, or suitability for any particular purpose of the data.

11/28/22 8:40 AM

WELLS WITH WELL LOG INFORMATION

# New Mexico Office of the State Engineer Point of Diversion Summary

<b>Well Tag</b> NA		DD Number A 12721 POD8		(quar	rters a	re si	malles Sec	t to lai Tws	Rng	NAD83 UT <b>X</b> 614640	M in meters) <b>Y</b> 3629463	•	
Driller License:1456Driller Name:JOHN W WHITE			Drill	er Co	ompa	any	: W	HITE	DRILLING	COMP	ANY		
Drill Start Date:         09/28/2020           Log File Date:         10/14/2020           Pump Type:         10/14/2020		Drill PCW Pipe	/ Rcv	v Dat	e:	: Size:	09/	28/2020	Plug Date: Source: Shallov Estimated Yield: 0 GPM				
Casing Size:		2.00	Dept					130	) feet	Dept	h Water:	108 feet	
Water Bearing Stratific			ation	s:	1 1 1	<b>op</b> 06 15 17 18		115 117 118	Sandstone Sandstone	e/Gravel/ e/Gravel/ e/Gravel/	'Conglomer 'Conglomer 'Conglomer 'Conglomer	ate ate	
Casing Perfo			ratior	ns:		<b>op</b> 90	Bott	<b>om</b> 130					

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



**U.S. Fish and Wildlife Service** 

# National Wetlands Inventory

Taylor Deep 12 Federal #006 - Page 50 of 154 **Riverine 4.67 Miles** 



### November 28, 2022

#### Wetlands

- Estuarine and Marine Deepwater
  - Estuarine and Marine Wetland

- Freshwater Emergent Wetland Freshwater Forested/Shrub Wetland
- **Freshwater Pond**

Lake Other Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Released to Imaging: 6/13/2023 9:17:49 AM

National Wetlands Inventory (NWI) This page was produced by the NWI mapper

10/2022 1.45.50 DL Recei ed by OCD

## **U.S. Fish and Wildlife Service** National Wetlands Inventory

Taylor Deep 12 Federal #006 - Page 51 of 154 FW Pond 2.78 Miles



### November 28, 2022

### Wetlands

- Estuarine and Marine Deepwater
  - Estuarine and Marine Wetland

- Freshwater Forested/Shrub Wetland

Freshwater Emergent Wetland

**Freshwater Pond** 

Lake Other Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Released to Imaging: 6/13/2023 9:17:49 AM

National Wetlands Inventory (NWI) This page was produced by the NWI mapper

U.S. Fish and Wildlife Service

## National Wetlands Inventory

Taylor Deep 12 Federal #006 - Page 52 of 154 Wetland 3.28 Miles



Other

Riverine

Freshwater Forested/Shrub Wetland

**Freshwater Pond** 

- - Estuarine and Marine Wetland

Estuarine and Marine Deepwater

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National Wetlands Inventory (NWI) This page was produced by the NWI mapper



Received by OCD: 2/10/2023 1:45:59 PM





Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

# Received by OCD: 2(10/2023 1:45:59,PM National Flood Hazard Layer FIRMette



### Legend

Page 55 of 154



Releasea to Imaging: 6/13/2023 997:49 AM 1,500

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

# ATTACHMENT D

Karst Map





# ATTACHMENT E

## Hall Environmental Laboratory Analysis Reports





December 19, 2022

Ashley Giovengo Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220 TEL: (575) 297-0956 FAX: Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

RE: Taylor Deep 12 Federal 006

OrderNo.: 2212216

Dear Ashley Giovengo:

Hall Environmental Analysis Laboratory received 12 sample(s) on 12/6/2022 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,

Ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**CLIENT:** Marathon Oil Company

Project: Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2212216

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 12/19/2022 Client Sample ID: BG01-0' Collection Date: 12/2/2022 2:33:00 PM .

Lab ID: 2212216-001	Matrix: SOIL	Rece	eived Date:	12/6/2	022 7:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst: JME
Diesel Range Organics (DRO)	ND	15	mg/Kg	1	12/9/2022 12:19:15 AM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/9/2022 12:19:15 AM
Surr: DNOP	93.3	21-129	%Rec	1	12/9/2022 12:19:15 AM
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	12/10/2022 2:18:59 PM
Surr: BFB	94.8	37.7-212	%Rec	1	12/10/2022 2:18:59 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.024	mg/Kg	1	12/10/2022 2:18:59 PM
Toluene	ND	0.048	mg/Kg	1	12/10/2022 2:18:59 PM
Ethylbenzene	ND	0.048	mg/Kg	1	12/10/2022 2:18:59 PM
Xylenes, Total	ND	0.097	mg/Kg	1	12/10/2022 2:18:59 PM
Surr: 4-Bromofluorobenzene	95.8	70-130	%Rec	1	12/10/2022 2:18:59 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	ND	60	mg/Kg	20	12/10/2022 12:29:51 PM

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- ND
- PQL Practical Quanitative Limit S
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- в Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL
  - Reporting Limit

Page 1 of 19

**Project:** Lab ID:

CLIENT: Marathon Oil Company

2212216-002

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2212216

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BG01-1' Collection Date: 12/2/2022 2:35:00 PM Received Date: 12/6/2022 7:30:00 AM

		1000	nica Dutei	12/0/2			
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH		
Diesel Range Organics (DRO)	ND	14	mg/Kg	1	12/9/2022 3:55:34 PM		
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/9/2022 3:55:34 PM		
Surr: DNOP	116	21-129	%Rec	1	12/9/2022 3:55:34 PM		
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB		
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/10/2022 3:53:07 PM		
Surr: BFB	94.1	37.7-212	%Rec	1	12/10/2022 3:53:07 PM		
EPA METHOD 8021B: VOLATILES					Analyst: NSB		
Benzene	ND	0.024	mg/Kg	1	12/10/2022 3:53:07 PM		
Toluene	ND	0.049	mg/Kg	1	12/10/2022 3:53:07 PM		
Ethylbenzene	ND	0.049	mg/Kg	1	12/10/2022 3:53:07 PM		
Xylenes, Total	ND	0.097	mg/Kg	1	12/10/2022 3:53:07 PM		
Surr: 4-Bromofluorobenzene	95.7	70-130	%Rec	1	12/10/2022 3:53:07 PM		
EPA METHOD 300.0: ANIONS					Analyst: NAI		
Chloride	ND	60	mg/Kg	20	12/10/2022 12:42:12 PM		

Matrix: SOIL

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit S
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- в Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 2 of 19

**CLIENT:** Marathon Oil Company

Project: Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2212216

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS01-0' Collection Date: 12/2/2022 11:41:00 AM Pageived Date: 12/6/2022 7:30:00 AM

Lab ID: 2212216-003	Matrix: SOIL	Re	eceive	ed Date:	12/6/2	2022 7:30:00 AM
Analyses	Result	RL (	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS					Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	12/9/2022 4:06:13 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/9/2022 4:06:13 PM
Surr: DNOP	148	21-129	S	%Rec	1	12/9/2022 4:06:13 PM
EPA METHOD 8015D: GASOLINE RANG	E					Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/10/2022 5:03:30 PM
Surr: BFB	94.4	37.7-212		%Rec	1	12/10/2022 5:03:30 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/10/2022 5:03:30 PM
Toluene	ND	0.050		mg/Kg	1	12/10/2022 5:03:30 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/10/2022 5:03:30 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/10/2022 5:03:30 PM
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	12/10/2022 5:03:30 PM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	ND	60		mg/Kg	20	12/10/2022 1:43:54 PM

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit S
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- в Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 3 of 19

**Project:** 

CLIENT: Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2212216

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS02-0' Collection Date: 12/2/2022 11:43:00 AM Received Date: 12/6/2022 7:30:00 AM

Lab ID: 2212216-004	Matrix: SOIL	Rece	ived Date:	12/6/2	022 7:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	13	mg/Kg	1	12/9/2022 4:16:51 PM
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	12/9/2022 4:16:51 PM
Surr: DNOP	127	21-129	%Rec	1	12/9/2022 4:16:51 PM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	12/10/2022 6:14:04 PM
Surr: BFB	91.9	37.7-212	%Rec	1	12/10/2022 6:14:04 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	12/10/2022 6:14:04 PM
Toluene	ND	0.050	mg/Kg	1	12/10/2022 6:14:04 PM
Ethylbenzene	ND	0.050	mg/Kg	1	12/10/2022 6:14:04 PM
Xylenes, Total	ND	0.10	mg/Kg	1	12/10/2022 6:14:04 PM
Surr: 4-Bromofluorobenzene	92.9	70-130	%Rec	1	12/10/2022 6:14:04 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	ND	60	mg/Kg	20	12/10/2022 1:56:14 PM

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- ND
- PQL Practical Quanitative Limit S
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- в Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL
  - Reporting Limit

Page 4 of 19

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS03A-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 12/2/2022 1:34:00 PM Lab ID: 2212216-005 Matrix: SOIL Received Date: 12/6/2022 7:30:00 AM Analyses Result **RL** Qual Units DF **Date Analyzed** EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 15 12/9/2022 4:27:30 PM mg/Kg 1 Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 12/9/2022 4:27:30 PM Surr: DNOP 21-129 146 S %Rec 1 12/9/2022 4:27:30 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 12/10/2022 6:37:30 PM 5.0 mg/Kg 1 Surr: BFB 90.8 37.7-212 %Rec 1 12/10/2022 6:37:30 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.025 12/10/2022 6:37:30 PM mg/Kg 1 Toluene ND 0.050 mg/Kg 1 12/10/2022 6:37:30 PM Ethylbenzene ND 0.050 mg/Kg 1 12/10/2022 6:37:30 PM Xylenes, Total ND 0.099 mg/Kg 1 12/10/2022 6:37:30 PM Surr: 4-Bromofluorobenzene 92.6 70-130 %Rec 1 12/10/2022 6:37:30 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 12/10/2022 2:08:34 PM ND 60 mg/Kg 20

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level.
   D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 19

S

**Project:** 

CLIENT: Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2212216

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS04-0' Collection Date: 12/2/2022 12:50:00 PM Received Date: 12/6/2022 7:30:00 AM

Lab ID: 2212216-006	Matrix: SOIL	Rece	ived Date:	12/6/2	022 7:30:00 AM
Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	39	14	mg/Kg	1	12/9/2022 4:38:07 PM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/9/2022 4:38:07 PM
Surr: DNOP	126	21-129	%Rec	1	12/9/2022 4:38:07 PM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/10/2022 7:00:58 PM
Surr: BFB	91.5	37.7-212	%Rec	1	12/10/2022 7:00:58 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	12/10/2022 7:00:58 PM
Toluene	ND	0.049	mg/Kg	1	12/10/2022 7:00:58 PM
Ethylbenzene	ND	0.049	mg/Kg	1	12/10/2022 7:00:58 PM
Xylenes, Total	ND	0.098	mg/Kg	1	12/10/2022 7:00:58 PM
Surr: 4-Bromofluorobenzene	92.5	70-130	%Rec	1	12/10/2022 7:00:58 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	ND	61	mg/Kg	20	12/10/2022 2:20:55 PM

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н
- Holding times for preparation or analysis exceeded Not Detected at the Reporting Limit
- ND
- PQL Practical Quanitative Limit S
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- в Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Project:** Lab ID:

CLIENT: Marathon Oil Company

2212216-007

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2212216

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS04-1' Collection Date: 12/2/2022 12:55:00 PM Received Date: 12/6/2022 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	15	mg/Kg	1	12/9/2022 4:48:43 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	12/9/2022 4:48:43 PM
Surr: DNOP	121	21-129	%Rec	1	12/9/2022 4:48:43 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/10/2022 7:24:29 PM
Surr: BFB	94.0	37.7-212	%Rec	1	12/10/2022 7:24:29 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.024	mg/Kg	1	12/10/2022 7:24:29 PM
Toluene	ND	0.049	mg/Kg	1	12/10/2022 7:24:29 PM
Ethylbenzene	ND	0.049	mg/Kg	1	12/10/2022 7:24:29 PM
Xylenes, Total	ND	0.097	mg/Kg	1	12/10/2022 7:24:29 PM
Surr: 4-Bromofluorobenzene	95.5	70-130	%Rec	1	12/10/2022 7:24:29 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	ND	60	mg/Kg	20	12/10/2022 2:33:15 PM
			0 0		

Matrix: SOIL

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- ND
- PQL Practical Quanitative Limit S
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- в Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL
  - Reporting Limit

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**Project:** Lab ID:

CLIENT: Marathon Oil Company

2212216-008

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2212216

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS05-0' Collection Date: 12/2/2022 1:11:00 PM Received Date: 12/6/2022 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	14	mg/Kg	1	12/9/2022 4:59:18 PM	
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/9/2022 4:59:18 PM	
Surr: DNOP	122	21-129	%Rec	1	12/9/2022 4:59:18 PM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: NSB	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/10/2022 8:34:52 PM	
Surr: BFB	91.2	37.7-212	%Rec	1	12/10/2022 8:34:52 PM	
EPA METHOD 8021B: VOLATILES					Analyst: NSB	
Benzene	ND	0.024	mg/Kg	1	12/10/2022 8:34:52 PM	
Toluene	ND	0.049	mg/Kg	1	12/10/2022 8:34:52 PM	
Ethylbenzene	ND	0.049	mg/Kg	1	12/10/2022 8:34:52 PM	
Xylenes, Total	ND	0.098	mg/Kg	1	12/10/2022 8:34:52 PM	
Surr: 4-Bromofluorobenzene	94.0	70-130	%Rec	1	12/10/2022 8:34:52 PM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	12/10/2022 2:45:35 PM	

Matrix: SOIL

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit S
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- в Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL
  - Reporting Limit

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Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS06-0 **Project:** Taylor Deep 12 Federal 006 Collection Date: 12/2/2022 1:13:00 PM Lab ID: 2212216-009 Matrix: SOIL Received Date: 12/6/2022 7:30:00 AM Analyses Result **RL** Qual Units DF **Date Analyzed** EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 15 12/9/2022 5:09:50 PM mg/Kg 1 Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 12/9/2022 5:09:50 PM Surr: DNOP 122 21-129 %Rec 1 12/9/2022 5:09:50 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 12/10/2022 8:58:19 PM 4.8 mg/Kg 1 Surr: BFB 91.2 37.7-212 %Rec 1 12/10/2022 8:58:19 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.024 12/10/2022 8:58:19 PM mg/Kg 1 Toluene ND 0.048 mg/Kg 1 12/10/2022 8:58:19 PM ND Ethylbenzene 0.048 mg/Kg 1 12/10/2022 8:58:19 PM Xylenes, Total ND 0.097 mg/Kg 1 12/10/2022 8:58:19 PM Surr: 4-Bromofluorobenzene 70-130 %Rec 1 12/10/2022 8:58:19 PM 93.6 **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 12/10/2022 2:57:56 PM ND 60 mg/Kg 20

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level.
   D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Released to Imaging: 6/13/2023 9:17:49 AM

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Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS07-0 **Project:** Taylor Deep 12 Federal 006 Collection Date: 12/2/2022 1:47:00 PM Lab ID: 2212216-010 Matrix: SOIL Received Date: 12/6/2022 7:30:00 AM Analyses Result **RL** Qual Units DF **Date Analyzed** EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 14 12/9/2022 5:52:09 PM mg/Kg 1 Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 12/9/2022 5:52:09 PM Surr: DNOP 124 21-129 %Rec 1 12/9/2022 5:52:09 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 12/10/2022 9:21:46 PM 4.8 mg/Kg 1 Surr: BFB 90.6 37.7-212 %Rec 1 12/10/2022 9:21:46 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.024 12/10/2022 9:21:46 PM mg/Kg 1 Toluene ND 0.048 mg/Kg 1 12/10/2022 9:21:46 PM Ethylbenzene ND 0.048 mg/Kg 1 12/10/2022 9:21:46 PM Xylenes, Total ND 0.097 mg/Kg 1 12/10/2022 9:21:46 PM Surr: 4-Bromofluorobenzene 70-130 %Rec 1 12/10/2022 9:21:46 PM 92.4 **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 12/10/2022 3:10:16 PM ND 60 mg/Kg 20

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
  - % Recovery outside of standard limits. If undiluted results may be estimated.
- В Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits Р
- Sample pH Not In Range
- RL Reporting Limit

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Released to Imaging: 6/13/2023 9:17:49 AM

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### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 12/19/2022

<b>CLIENT:</b>	Marathon Oil Company		Clie	nt Sar	nple ID:	SS08-0	)'
<b>Project:</b>	Taylor Deep 12 Federal 006		C	ollectio	on Date:	12/2/20	022 2:43:00 PM
Lab ID:	2212216-011	Matrix: SOIL	ŀ	Receiv	ed Date:	022 7:30:00 AM	
Analyses		Result	RL	Qual	Units	DF	Date Analyzed
EPA ME	THOD 8015M/D: DIESEL RANG	E ORGANICS					Analyst: SB
Diesel Ra	ange Organics (DRO)	21000	1400		mg/Kg	100	12/15/2022 10:30:18 AM
Motor Oi	I Range Organics (MRO)	7200	4600		mg/Kg	100	12/15/2022 10:30:18 AM
Surr: [	ONOP	0	21-129	S	%Rec	100	12/15/2022 10:30:18 AM
EPA ME	THOD 8015D: GASOLINE RANG	<b>GE</b>					Analyst: NSB
Gasoline	Range Organics (GRO)	1700	24		mg/Kg	5	12/10/2022 9:45:10 PM
Surr: E	3FB	2320	37.7-212	S	%Rec	5	12/10/2022 9:45:10 PM
EPA ME	THOD 8021B: VOLATILES						Analyst: NSB
Benzene		0.39	0.12		mg/Kg	5	12/10/2022 9:45:10 PM
Toluene		51	2.4		mg/Kg	50	12/11/2022 3:17:58 PM
Ethylben	zene	91	2.4		mg/Kg	50	12/11/2022 3:17:58 PM
Xylenes,	Total	120	4.9		mg/Kg	50	12/11/2022 3:17:58 PM
Surr: 4	4-Bromofluorobenzene	144	70-130	S	%Rec	50	12/11/2022 3:17:58 PM
EPA ME	THOD 300.0: ANIONS						Analyst: NAI
Chloride		130	61		mg/Kg	20	12/10/2022 3:47:17 PM

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Released to Imaging: 6/13/2023 9:17:49 AM

**CLIENT:** Marathon Oil Company

Project: Taylor Deep 12 Federal 006

Analytical Report
Lab Order 2212216

Date Reported: 12/19/2022

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS08-1' Collection Date: 12/2/2022 2:46:00 PM Baseived Date: 12/6/2022 7:20:00 AM

Lab ID: 2212216-012	Matrix: SOIL	Rece	ived Date:	12/6/2	022 7:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	14	mg/Kg	1	12/9/2022 6:13:04 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/9/2022 6:13:04 PM
Surr: DNOP	111	21-129	%Rec	1	12/9/2022 6:13:04 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/11/2022 3:41:38 PM
Surr: BFB	94.1	37.7-212	%Rec	1	12/11/2022 3:41:38 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	12/11/2022 3:41:38 PM
Toluene	ND	0.049	mg/Kg	1	12/11/2022 3:41:38 PM
Ethylbenzene	ND	0.049	mg/Kg	1	12/11/2022 3:41:38 PM
Xylenes, Total	ND	0.098	mg/Kg	1	12/11/2022 3:41:38 PM
Surr: 4-Bromofluorobenzene	92.0	70-130	%Rec	1	12/11/2022 3:41:38 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	100	60	mg/Kg	20	12/10/2022 3:59:37 PM

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Released to Imaging: 6/13/2023 9:17:49 AM

Client: Project:		athon Oil Comp lor Deep 12 Fed	•	6							
Sample ID:	MB-72006	SampT	ype: <b>mb</b>	lk	Tes	tCode: EF	A Method	300.0: Anions	5		
Client ID:	PBS	Batch	ID: 720	006	F	RunNo: <b>93</b>	8192				
Prep Date:	12/9/2022	Analysis D	ate: 12	/10/2022	5	SeqNo: 33	358070	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72006	SampT	ype: Ics		Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID:	LCSS	Batch	ID: 720	006	F	RunNo: <b>9</b> 3	8192				
Prep Date:	12/9/2022	Analysis D	ate: 12	/10/2022	S	SeqNo: 33	358071	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	95.8	90	110			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2212216

19-Dec-22

WO#:
# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	n Oil Company eep 12 Federal 006		
Sample ID: MB-71925	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 71925	RunNo: 93133	
Prep Date: 12/7/2022	Analysis Date: 12/8/2022	SeqNo: 3354846	Units: <b>mg/Kg</b>
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 15		
Motor Oil Range Organics (MRO)	ND 50		400
Surr: DNOP	12 10.0	0 119 21	129
Sample ID: LCS-71925	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 71925	RunNo: 93133	
Prep Date: 12/7/2022	Analysis Date: 12/8/2022	SeqNo: 3354847	Units: mg/Kg
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	59 15 50.0	0 0 118 64.4	127
Surr: DNOP	5.5 5.00	0 111 21	129
Sample ID: LCS-71938	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 71938	RunNo: <b>93160</b>	
Prep Date: 12/8/2022	Analysis Date: 12/9/2022	SeqNo: 3358506	Units: mg/Kg
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	49 15 50.0	0 0 98.0 64.4	127
Surr: DNOP	6.3 5.00	0 126 21	129
Sample ID: MB-71938	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 71938	RunNo: <b>93160</b>	
Prep Date: 12/8/2022	Analysis Date: 12/9/2022	SeqNo: 3358507	Units: <b>mg/Kg</b>
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 15		
Motor Oil Range Organics (MRO)	ND 50		
Surr: DNOP	12 10.0	0 124 21	129
Sample ID: MB-71989	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 71989	RunNo: 93210	
Prep Date: 12/9/2022	Analysis Date: 12/12/2022	SeqNo: 3361735	Units: %Rec
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Surr: DNOP	11 10.0	0 108 21	129

#### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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2212216

19-Dec-22

Client: Project:		on Oil Comp Deep 12 Fed	•	6							
Sample ID: Client ID:	LCS-71989 LCSS		ype: LC	-		tCode: EF RunNo: 93		8015M/D: Die	sel Range	Organics	
Prep Date:	12/9/2022	Analysis D		2/12/2022		SeqNo: 3		Units: %Rec	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		5.0		5.000		101	21	129			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2212216

19-Dec-22

# **QC SUMMARY REPORT** Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Marathon Taylor De			6							
Sample ID: m	ıb-71918	SampT	уре: МВ	LK	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID: P	BS	Batch	n ID: <b>719</b>	18	F	RunNo: <b>9</b> 3	3146				
Prep Date:	12/7/2022	Analysis D	Date: 12	/10/2022	S	SeqNo: 33	357250	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C Surr: BFB	Drganics (GRO)	ND 940	5.0	1000		93.5	37.7	212			
Sample ID: Ic	:s-71918	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID: L	CSS	Batch	n ID: <b>719</b>	18	F	RunNo: 93	3146				
Prep Date:	12/7/2022	Analysis D	Date: 12	/10/2022	S	SeqNo: 33	357251	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C Surr: BFB	Organics (GRO)	24 1900	5.0	25.00 1000	0	96.5 188	72.3 37.7	137 212			
Sample ID: m	nb-71927	SampT	уре: МВ	LK	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID: P	BS	Batch	n ID: <b>719</b>	27	F	RunNo: 93	3146				
Prep Date:	12/7/2022	Analysis D	Date: 12	/10/2022	S	SeqNo: 3	357274	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C Surr: BFB	Drganics (GRO)	ND 910	5.0	1000		91.4	37.7	212			
Sample ID: Ic	s-71927	SampT	ype: LC	s	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID: L	CSS	Batch	n ID: <b>719</b>	27	F	RunNo: <b>9</b> 3	3146				
Prep Date:	12/7/2022	Analysis D	Date: 12	/10/2022	S	SeqNo: 33	357275	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C	Organics (GRO)	23	5.0	25.00	0	93.8	72.3	137			
Surr: BFB		1900		1000		190	37.7	212			
Sample ID: 22	212216-002ams	SampT	уре: <b>МS</b>	;	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID: B	G01-1'	Batch	n ID: 719	27	F	RunNo: 93	3146				
Prep Date:	12/7/2022	Analysis D	Date: 12	/10/2022	S	SeqNo: 3	357277	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C Surr: BFB	Drganics (GRO)	23 1900	4.9	24.39 975.6	0	94.4 190	70 37.7	130 212			
Sample ID: 22	212216-002amsd	SampT	уре: <b>МS</b>	D	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID: B	G01-1'	Batch	n ID: <b>719</b>	27	F	RunNo: 93	3146		2		
Prep Date:	12/7/2022	Analysis D	Date: 12	/10/2022		SeqNo: 33		Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- % Recovery outside of standard limits. If undiluted results may be estimated. S
- В Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value

Analyte detected below quantitation limits

J Р Sample pH Not In Range

RL Reporting Limit

Page 16 of 19

2212216

19-Dec-22

Client:MarathonProject:Taylor De			6							
Sample ID: 2212216-002amsd	SampT	уре: МЗ	D	Tes	tCode: EF	A Method	8015D: Gasol	ine Range	)	
Client ID: BG01-1'	Batcl	n ID: 719	927	F	RunNo: <b>93</b>	8146				
Prep Date: 12/7/2022	Analysis E	Date: 12	/10/2022	S	SeqNo: 33	57278	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.37	0	92.8	70	130	1.72	20	
Surr: BFB	1900		974.7		194	37.7	212	0	0	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- В Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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2212216

19-Dec-22

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	on Oil Comp Deep 12 Fed	•	6							
Sample ID: mb-71918	SampT	уре: <b>МЕ</b>	BLK	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID: PBS	Batch	ID: 719	918	F	RunNo: <b>9</b> 3	3146				
Prep Date: 12/7/2022	Analysis D	ate: 12	/10/2022	;	SeqNo: 33	357332	Units: mg/K	q		
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025			JUILO	LOWLINI	TilgitLittit	Joint D		Quai
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.3	70	130			
Sample ID: LCS-71918	SampT	ype: LC	S	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID: LCSS	Batch	n ID: 719	918	F	RunNo: <b>9</b> 3	3146				
Prep Date: 12/7/2022	Analysis D	ate: 12	/10/2022	:	SeqNo: 33	357333	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.3	80	120			
Toluene	0.87	0.050	1.000	0	87.3	80	120			
Ethylbenzene	0.87	0.050	1.000	0	86.6	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.8	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.3	70	130			
Sample ID: mb-71927	SampT	уре: МВ	BLK	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID: PBS	Batch	n ID: 719	927	F	RunNo: <b>9</b> 3	3146				
Prep Date: 12/7/2022	Analysis D	ate: 12	/10/2022	:	SeqNo: 33	357356	Units: <b>mg/K</b>	g		
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	0.93		1.000		92.7	70	130			
Sample ID: LCS-71927	SampT	ype: LC	s	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID: LCSS	Batch	n ID: 719	927	F	RunNo: <b>9</b> 3	3146				
Prep Date: 12/7/2022	Analysis D	ate: 12	/10/2022	:	SeqNo: 33	357357	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	92.2	80	120			
Toluene	0.93	0.050	1.000	0	93.5	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.1	80	120			
Surr: 4-Bromofluorobenzene	0.93		1.000		93.4	70	130			

#### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2212216

19-Dec-22

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Marathon Taylor De			6							
Sample ID: 2212	216-003ams	SampT	Гуре: М	6	Tes	tCode: EF	A Method	8021B: Volati	iles		
Client ID: SS01	-0'	Batcl	h ID: 71	927	F	RunNo: 93	8146				
Prep Date: 12/7	/2022	Analysis D	Date: 12	2/10/2022	S	SeqNo: 33	357360	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.91	0.025	0.9921	0	91.8	68.8	120			
Toluene		0.93	0.050	0.9921	0	93.6	73.6	124			
Ethylbenzene		0.93	0.050	0.9921	0	93.8	72.7	129			
Xylenes, Total		2.8	0.099	2.976	0.01936	93.3	75.7	126			
Surr: 4-Bromofluoro	benzene	0.93		0.9921		93.4	70	130			
Sample ID: 22122	216-003amsd	SampT	Гуре: М	SD.	Tes	tCode: EF	A Method	8021B: Volati	iles		
Client ID: SS01	-0'	Batcl	h ID: 71	927	F	RunNo: <b>9</b> 3	8146				
Prep Date: 12/7	/2022	Analysis E	Date: 12	2/10/2022	5	SeqNo: 3	357361	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.93	0.025	0.9921	0	93.5	68.8	120	1.93	20	
Toluene		0.95	0.050	0.9921	0	95.5	73.6	124	1.96	20	
Ethylbenzene		0.94	0.050	0.9921	0	94.9	72.7	129	1.18	20	
Xylenes, Total		2.8	0.099	2.976	0.01936	94.4	75.7	126	1.17	20	
	benzene	0.96		0.9921		96.8	70	130	0	0	

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2212216

19-Dec-22

HALL ENVIRONMENTAL ANALYSIS LABORATORY	TE	ll Environmental A Albuq L: 505-345-3975 F Website: www.hall	4901 Haw querque, NM FAX: 505-34	kins NE 187109 Sar 15-4107	nple Log-In C	Check List
Client Name: Marathon Oil Co	ompany Work	Order Number:	2212216		RcptNo	: 1
Received By: Juan Rojas Completed By: Sean Livingst		22 7:30:00 AM 22 8:33:53 AM	\$	Gloweng S-L	not	
Reviewed By: KPCA	2.06.22					
<ul> <li><u>Chain of Custody</u></li> <li>1. Is Chain of Custody complete?</li> <li>2. How was the sample delivered</li> </ul>			Yes 🗹 <u>Courier</u>	No 🗌	Not Present 🗌	
Log In 3. Was an attempt made to cool t	he samples?		Yes 🗹	No 🗔		
4. Were all samples received at a	temperature of >0° C	to 6.0°C	Yes 🗹	No 🗌		
5. Sample(s) in proper container(	s)?	,	Yes 🗹	No 🗌		
<ul><li>6. Sufficient sample volume for ine</li><li>7. Are samples (except VOA and except VOA an</li></ul>			res 🗹	No 🗌		
8. Was preservative added to bott			res 🗌	No 🗹	na 🗆	
9. Received at least 1 vial with hea 10. Were any sample containers re			Yes □ Yes □	No 🗌 No 🗹	NA 🗹	
11. Does paperwork match bottle la (Note discrepancies on chain of		Ŋ	res 🗹	No 🗌	bottles checked for pH: (<2 o	12 unless noted)
12. Are matrices correctly identified 13. Is it clear what analyses were re			ſes 🗹 ſes 🗹	No 🗌 No 🗌	Adjusted?	
14. Were all holding times able to b (If no, notify customer for autho		١	(es 🗹	No 🗌	Checked by:	A 12-6-22
Special Handling (if applica				_	_	
15. Was client notified of all discre	pancies with this order?	,	Yes 📙	No 🛄	NA 🗹	
Person Notified:		Date: Date: Date:	eMail	Phone 🗌 Fax	In Person	
Regarding: Client Instructions:						
16. Additional remarks:						-
17. <u>Cooler Information</u>					ł	
Cooler No Temp °C Contract Contract Temp °C Contract Temp	ondition Seal Intact	Seal No Se	al Date	Signed By		
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Chain-	of-Cu	Chain-of-Custody Record	Turn-Around Time:	Time:				3		Ū		) di	2			HALL ENVIRONMENTAL	
Client: Marythen		Oil Company	Standard	Rush.	5 Day				N	ž	SIS	25		R	Ĕ	ANALYSIS LABORATORY	
		1	Project Name: 244	Taylor HOOL	Deep 12			5	ww.h	allenv	ironm	www.hallenvironmental.com	Com				
Mailing Address:	5	f. 12			Present of the State of the Sta	Р	-901 F	4901 Hawkins NE	s NE	- Alb	ənbn	Albuquerque, NM 87109	NM 8	37109			
			Project #:				Tel. 5	Tel. 505-345-3975	-3975		ax 5	Fax 505-345-4107	15-41	07		-	
Phone #: 57	5 ~	988-8753	CL.22	.02905	and the second second					Anal	sis F	Analysis Request	st				
email or Fax#: ກຸ ຣ ຜ ກ	·	ari@marathonoil.com	Project Mana	Project Manager: A5 4 /  × y	Giovengo					*O5		(+	(ງມູສ				
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Standard		Level 4 (Full Validation)							150	)Ч (							
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	□ Other		On Ice:	P Yes	D No				_	_			JA)				
🗆 EDD (Type)			# of Coolers:	1					_	_	(		шı		1		
			Cooler Temp(Including CF):	(Including CF):	1-62-52°C)				_		AO		01110				
Date Time	Matrix	Samole Name	Container Tvne and #	Preservative Tvne	HEAL No.		08:H97	N) 803	AHAS ARDS	Э) F, I	v) 0928	5) 0728	D leto T				
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January 25, 2023

Ashley Giovengo Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220 TEL: (575) 297-0956 FAX:

RE: Taylor Deep 12 Federal 006

OrderNo.: 2301576

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Ashley Giovengo:

Hall Environmental Analysis Laboratory received 45 sample(s) on 1/17/2023 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF01-1.5' Collection Date: 1/12/2023 11:24:00 AM **Received Date:** 1/17/2023 7:45:00 AM

Lab ID: 2301576-001	Matrix: SOIL	Rece	eived Date:	1/17/2	023 7:45:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	1/20/2023 1:32:09 AM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	1/20/2023 1:32:09 AM
Surr: DNOP	103	69-147	%Rec	1	1/20/2023 1:32:09 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/19/2023 12:43:00 AM
Surr: BFB	93.7	37.7-212	%Rec	1	1/19/2023 12:43:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/19/2023 12:43:00 AM
Toluene	ND	0.047	mg/Kg	1	1/19/2023 12:43:00 AM
Ethylbenzene	ND	0.047	mg/Kg	1	1/19/2023 12:43:00 AM
Xylenes, Total	ND	0.094	mg/Kg	1	1/19/2023 12:43:00 AM
Surr: 4-Bromofluorobenzene	92.6	70-130	%Rec	1	1/19/2023 12:43:00 AM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	ND	60	mg/Kg	20	1/19/2023 1:54:07 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

ND PQL Practical Quanitative Limit

- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 1 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF02-1.5' Collection Date: 1/12/2023 11:27:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-002	Matrix: SOIL	Rece	ived Date:	1/17/2	023 7:45:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	1/20/2023 1:42:28 AM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	1/20/2023 1:42:28 AM
Surr: DNOP	103	69-147	%Rec	1	1/20/2023 1:42:28 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/19/2023 1:03:00 AM
Surr: BFB	91.6	37.7-212	%Rec	1	1/19/2023 1:03:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/19/2023 1:03:00 AM
Toluene	ND	0.048	mg/Kg	1	1/19/2023 1:03:00 AM
Ethylbenzene	ND	0.048	mg/Kg	1	1/19/2023 1:03:00 AM
Xylenes, Total	ND	0.095	mg/Kg	1	1/19/2023 1:03:00 AM
Surr: 4-Bromofluorobenzene	93.9	70-130	%Rec	1	1/19/2023 1:03:00 AM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	ND	60	mg/Kg	20	1/19/2023 2:06:27 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 2 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF03-1.5' Collection Date: 1/12/2023 11:28:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-003	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	1/20/2023 1:52:47 AM	
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/20/2023 1:52:47 AM	
Surr: DNOP	93.5	69-147	%Rec	1	1/20/2023 1:52:47 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/19/2023 1:22:00 AM	
Surr: BFB	92.9	37.7-212	%Rec	1	1/19/2023 1:22:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.024	mg/Kg	1	1/19/2023 1:22:00 AM	
Toluene	ND	0.048	mg/Kg	1	1/19/2023 1:22:00 AM	
Ethylbenzene	ND	0.048	mg/Kg	1	1/19/2023 1:22:00 AM	
Xylenes, Total	ND	0.097	mg/Kg	1	1/19/2023 1:22:00 AM	
Surr: 4-Bromofluorobenzene	95.2	70-130	%Rec	1	1/19/2023 1:22:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 2:18:47 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

Above Quantitation Range/Estimated Value Е

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 3 of 56

**CLIENT:** Marathon Oil Company

**Project:** Taylor Deep 12 Federal 006

Analytical Report Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF04-1.5' Collection Date: 1/12/2023 11:36:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-004	Matrix: SOIL	Received Date: 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	<b>BE ORGANICS</b>				Analyst: DGH	
Diesel Range Organics (DRO)	13	9.6	mg/Kg	1	1/20/2023 2:03:03 AM	
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/20/2023 2:03:03 AM	
Surr: DNOP	115	69-147	%Rec	1	1/20/2023 2:03:03 AM	
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/19/2023 2:01:00 AM	
Surr: BFB	95.2	37.7-212	%Rec	1	1/19/2023 2:01:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.025	mg/Kg	1	1/19/2023 2:01:00 AM	
Toluene	ND	0.050	mg/Kg	1	1/19/2023 2:01:00 AM	
Ethylbenzene	ND	0.050	mg/Kg	1	1/19/2023 2:01:00 AM	
Xylenes, Total	ND	0.10	mg/Kg	1	1/19/2023 2:01:00 AM	
Surr: 4-Bromofluorobenzene	91.9	70-130	%Rec	1	1/19/2023 2:01:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 2:31:07 AM	

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit

RL Re

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF05-1.5' Collection Date: 1/12/2023 11:38:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-005	Matrix: SOIL	Reco	<b>Received Date:</b> 1/17/2023 7:45:00 AM			
Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	1/20/2023 2:13:19 AM	
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	1/20/2023 2:13:19 AM	
Surr: DNOP	117	69-147	%Rec	1	1/20/2023 2:13:19 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/19/2023 2:21:00 AM	
Surr: BFB	86.4	37.7-212	%Rec	1	1/19/2023 2:21:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.024	mg/Kg	1	1/19/2023 2:21:00 AM	
Toluene	ND	0.049	mg/Kg	1	1/19/2023 2:21:00 AM	
Ethylbenzene	ND	0.049	mg/Kg	1	1/19/2023 2:21:00 AM	
Xylenes, Total	ND	0.098	mg/Kg	1	1/19/2023 2:21:00 AM	
Surr: 4-Bromofluorobenzene	89.9	70-130	%Rec	1	1/19/2023 2:21:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 2:43:28 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 5 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF06-1.5' Collection Date: 1/12/2023 11:39:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-006	Matrix: SOIL	Reco	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH		
Diesel Range Organics (DRO)	13	9.0	mg/Kg	1	1/20/2023 2:23:34 AM		
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	1/20/2023 2:23:34 AM		
Surr: DNOP	99.7	69-147	%Rec	1	1/20/2023 2:23:34 AM		
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM		
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/19/2023 2:40:00 AM		
Surr: BFB	90.2	37.7-212	%Rec	1	1/19/2023 2:40:00 AM		
EPA METHOD 8021B: VOLATILES					Analyst: CCM		
Benzene	ND	0.025	mg/Kg	1	1/19/2023 2:40:00 AM		
Toluene	ND	0.049	mg/Kg	1	1/19/2023 2:40:00 AM		
Ethylbenzene	ND	0.049	mg/Kg	1	1/19/2023 2:40:00 AM		
Xylenes, Total	ND	0.098	mg/Kg	1	1/19/2023 2:40:00 AM		
Surr: 4-Bromofluorobenzene	89.5	70-130	%Rec	1	1/19/2023 2:40:00 AM		
EPA METHOD 300.0: ANIONS					Analyst: NAI		
Chloride	ND	59	mg/Kg	20	1/19/2023 2:55:49 AM		

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF07-1.5' Collection Date: 1/12/2023 11:45:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-007	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/20/2023 2:44:04 AM	
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/20/2023 2:44:04 AM	
Surr: DNOP	95.4	69-147	%Rec	1	1/20/2023 2:44:04 AM	
EPA METHOD 8015D: GASOLINE RANG	Ε				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/19/2023 2:59:00 AM	
Surr: BFB	90.3	37.7-212	%Rec	1	1/19/2023 2:59:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.025	mg/Kg	1	1/19/2023 2:59:00 AM	
Toluene	ND	0.050	mg/Kg	1	1/19/2023 2:59:00 AM	
Ethylbenzene	ND	0.050	mg/Kg	1	1/19/2023 2:59:00 AM	
Xylenes, Total	ND	0.10	mg/Kg	1	1/19/2023 2:59:00 AM	
Surr: 4-Bromofluorobenzene	93.0	70-130	%Rec	1	1/19/2023 2:59:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 3:32:52 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

Above Quantitation Range/Estimated Value Е

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 7 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF09-1.5' Collection Date: 1/12/2023 11:50:00 AM **Received Date:** 1/17/2023 7:45:00 AM

Lab ID: 2301576-008	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	1/20/2023 2:54:24 AM	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/20/2023 2:54:24 AM	
Surr: DNOP	102	69-147	%Rec	1	1/20/2023 2:54:24 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	1/19/2023 3:19:00 AM	
Surr: BFB	91.7	37.7-212	%Rec	1	1/19/2023 3:19:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.023	mg/Kg	1	1/19/2023 3:19:00 AM	
Toluene	ND	0.046	mg/Kg	1	1/19/2023 3:19:00 AM	
Ethylbenzene	ND	0.046	mg/Kg	1	1/19/2023 3:19:00 AM	
Xylenes, Total	ND	0.091	mg/Kg	1	1/19/2023 3:19:00 AM	
Surr: 4-Bromofluorobenzene	92.3	70-130	%Rec	1	1/19/2023 3:19:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 4:34:32 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

ND PQL Practical Quanitative Limit

- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 8 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF10-1.5' Collection Date: 1/12/2023 11:55:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-009	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	1/20/2023 3:04:46 AM	
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/20/2023 3:04:46 AM	
Surr: DNOP	101	69-147	%Rec	1	1/20/2023 3:04:46 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	1/19/2023 3:38:00 AM	
Surr: BFB	88.1	37.7-212	%Rec	1	1/19/2023 3:38:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.023	mg/Kg	1	1/19/2023 3:38:00 AM	
Toluene	ND	0.046	mg/Kg	1	1/19/2023 3:38:00 AM	
Ethylbenzene	ND	0.046	mg/Kg	1	1/19/2023 3:38:00 AM	
Xylenes, Total	ND	0.093	mg/Kg	1	1/19/2023 3:38:00 AM	
Surr: 4-Bromofluorobenzene	90.5	70-130	%Rec	1	1/19/2023 3:38:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	59	mg/Kg	20	1/19/2023 5:11:33 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range Reporting Limit

RL

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

Analytical Report Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF11Wall-0.5' Collection Date: 1/12/2023 1:25:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-010	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	8.9	mg/Kg	1	1/20/2023 3:15:08 AM	
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	1/20/2023 3:15:08 AM	
Surr: DNOP	97.0	69-147	%Rec	1	1/20/2023 3:15:08 AM	
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/19/2023 3:58:00 AM	
Surr: BFB	89.2	37.7-212	%Rec	1	1/19/2023 3:58:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.024	mg/Kg	1	1/19/2023 3:58:00 AM	
Toluene	ND	0.048	mg/Kg	1	1/19/2023 3:58:00 AM	
Ethylbenzene	ND	0.048	mg/Kg	1	1/19/2023 3:58:00 AM	
Xylenes, Total	ND	0.096	mg/Kg	1	1/19/2023 3:58:00 AM	
Surr: 4-Bromofluorobenzene	92.3	70-130	%Rec	1	1/19/2023 3:58:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 5:23:54 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF12Wall-0.5' Collection Date: 1/12/2023 1:27:00 PM **Received Date:** 1/17/2023 7:45:00 AM

Lab ID: 2301576-011	Matrix: SOIL	Received Date: 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	1/20/2023 3:25:30 AM	
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/20/2023 3:25:30 AM	
Surr: DNOP	105	69-147	%Rec	1	1/20/2023 3:25:30 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/19/2023 4:17:00 AM	
Surr: BFB	89.2	37.7-212	%Rec	1	1/19/2023 4:17:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.024	mg/Kg	1	1/19/2023 4:17:00 AM	
Toluene	ND	0.048	mg/Kg	1	1/19/2023 4:17:00 AM	
Ethylbenzene	ND	0.048	mg/Kg	1	1/19/2023 4:17:00 AM	
Xylenes, Total	ND	0.097	mg/Kg	1	1/19/2023 4:17:00 AM	
Surr: 4-Bromofluorobenzene	91.5	70-130	%Rec	1	1/19/2023 4:17:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	59	mg/Kg	20	1/19/2023 5:36:14 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 11 of 56

**CLIENT:** Marathon Oil Company

**Project:** Taylor Deep 12 Federal 006

Analytical Report
Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF13Wall-0.5' Collection Date: 1/12/2023 1:33:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-012	Matrix: SOIL	Received Date: 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/20/2023 3:35:53 AM	
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/20/2023 3:35:53 AM	
Surr: DNOP	98.5	69-147	%Rec	1	1/20/2023 3:35:53 AM	
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/19/2023 4:36:00 AM	
Surr: BFB	92.7	37.7-212	%Rec	1	1/19/2023 4:36:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.023	mg/Kg	1	1/19/2023 4:36:00 AM	
Toluene	ND	0.047	mg/Kg	1	1/19/2023 4:36:00 AM	
Ethylbenzene	ND	0.047	mg/Kg	1	1/19/2023 4:36:00 AM	
Xylenes, Total	ND	0.093	mg/Kg	1	1/19/2023 4:36:00 AM	
Surr: 4-Bromofluorobenzene	93.0	70-130	%Rec	1	1/19/2023 4:36:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 5:48:35 AM	

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit

RL Rep

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF14Wall-0.5' Collection Date: 1/12/2023 1:35:00 PM **Received Date:** 1/17/2023 7:45:00 AM

Lab ID: 2301576-013	Matrix: SOIL	Received Date: 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	8.6	mg/Kg	1	1/20/2023 3:46:16 AM	
Motor Oil Range Organics (MRO)	ND	43	mg/Kg	1	1/20/2023 3:46:16 AM	
Surr: DNOP	107	69-147	%Rec	1	1/20/2023 3:46:16 AM	
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/19/2023 4:56:00 AM	
Surr: BFB	89.6	37.7-212	%Rec	1	1/19/2023 4:56:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.025	mg/Kg	1	1/19/2023 4:56:00 AM	
Toluene	ND	0.049	mg/Kg	1	1/19/2023 4:56:00 AM	
Ethylbenzene	ND	0.049	mg/Kg	1	1/19/2023 4:56:00 AM	
Xylenes, Total	ND	0.099	mg/Kg	1	1/19/2023 4:56:00 AM	
Surr: 4-Bromofluorobenzene	92.0	70-130	%Rec	1	1/19/2023 4:56:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 6:00:55 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 13 of 56

**CLIENT:** Marathon Oil Company

Project: Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF15-0.5' Collection Date: 1/13/2023 9:40:00 AM

Matrix: SOIL	Reco	<b>Received Date:</b> 1/17/2023 7:45:00 AM			
Result	RL Qu	ual Units	DF	Date Analyzed	
ORGANICS				Analyst: DGH	
ND	9.8	mg/Kg	1	1/20/2023 3:56:44 AM	
ND	49	mg/Kg	1	1/20/2023 3:56:44 AM	
119	69-147	%Rec	1	1/20/2023 3:56:44 AM	
E				Analyst: CCM	
ND	5.0	mg/Kg	1	1/22/2023 8:27:00 PM	
94.1	37.7-212	%Rec	1	1/22/2023 8:27:00 PM	
				Analyst: CCM	
ND	0.025	mg/Kg	1	1/19/2023 8:23:00 PM	
ND	0.050	mg/Kg	1	1/19/2023 8:23:00 PM	
ND	0.050	mg/Kg	1	1/19/2023 8:23:00 PM	
ND	0.099	mg/Kg	1	1/19/2023 8:23:00 PM	
95.5	70-130	%Rec	1	1/19/2023 8:23:00 PM	
				Analyst: NAI	
ND	60	mg/Kg	20	1/19/2023 6:37:58 AM	
	Result E ORGANICS ND ND 119 E ND 94.1 ND ND ND ND ND 95.5	Result         RL Qu           E ORGANICS         ND         9.8           ND         49           119         69-147           E         ND         5.0           94.1         37.7-212           ND         0.025           ND         0.050           ND         0.050           ND         0.099           95.5         70-130	Result         RL         Qual         Units           E ORGANICS         ND         9.8         mg/Kg           ND         49         mg/Kg           119         69-147         %Rec           E         ND         5.0         mg/Kg           94.1         37.7-212         %Rec           ND         0.025         mg/Kg           ND         0.050         mg/Kg           95.5         70-130         %Rec	Result         RL Qual         Units         DF           CORGANICS         ND         9.8         mg/Kg         1           ND         49         mg/Kg         1           119         69-147         %Rec         1           E         ND         5.0         mg/Kg         1           94.1         37.7-212         %Rec         1           ND         0.025         mg/Kg         1           ND         0.050         mg/Kg         1           ND         0.099         mg/Kg         1           95.5         70-130         %Rec         1	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit % Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 14 of 56

Lab ID:

**CLIENT:** Marathon Oil Company

2301576-015

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF16-0.5' Collection Date: 1/13/2023 9:42:00 AM Received Date: 1/17/2023 7:45:00 AM

2001210 2001010 010						
Analyses	Result	RL Q	ual Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/20/2023 4:07:12 AM	
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/20/2023 4:07:12 AM	
Surr: DNOP	105	69-147	%Rec	1	1/20/2023 4:07:12 AM	
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/22/2023 9:26:00 PM	
Surr: BFB	96.3	37.7-212	%Rec	1	1/22/2023 9:26:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.025	mg/Kg	1	1/19/2023 9:22:00 PM	
Toluene	ND	0.049	mg/Kg	1	1/19/2023 9:22:00 PM	
Ethylbenzene	ND	0.049	mg/Kg	1	1/19/2023 9:22:00 PM	
Xylenes, Total	ND	0.098	mg/Kg	1	1/19/2023 9:22:00 PM	
Surr: 4-Bromofluorobenzene	93.0	70-130	%Rec	1	1/19/2023 9:22:00 PM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 6:50:18 AM	

Matrix: SOIL

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 15 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF17-0.5' Collection Date: 1/13/2023 9:45:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-016	Matrix: SOIL	Rece	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH		
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/20/2023 4:17:42 AM		
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/20/2023 4:17:42 AM		
Surr: DNOP	126	69-147	%Rec	1	1/20/2023 4:17:42 AM		
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/22/2023 9:46:00 PM		
Surr: BFB	93.9	37.7-212	%Rec	1	1/22/2023 9:46:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: CCM		
Benzene	ND	0.024	mg/Kg	1	1/19/2023 10:20:00 PM		
Toluene	ND	0.048	mg/Kg	1	1/19/2023 10:20:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	1/19/2023 10:20:00 PM		
Xylenes, Total	ND	0.095	mg/Kg	1	1/19/2023 10:20:00 PM		
Surr: 4-Bromofluorobenzene	92.5	70-130	%Rec	1	1/19/2023 10:20:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: NAI		
Chloride	ND	60	mg/Kg	20	1/19/2023 7:02:38 AM		

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF18-0.5' Collection Date: 1/13/2023 9:52:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-017	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.0	mg/Kg	1	1/20/2023 4:28:13 AM	
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	1/20/2023 4:28:13 AM	
Surr: DNOP	107	69-147	%Rec	1	1/20/2023 4:28:13 AM	
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/22/2023 10:05:00 PM	
Surr: BFB	89.4	37.7-212	%Rec	1	1/22/2023 10:05:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.025	mg/Kg	1	1/19/2023 10:40:00 PM	
Toluene	ND	0.050	mg/Kg	1	1/19/2023 10:40:00 PM	
Ethylbenzene	ND	0.050	mg/Kg	1	1/19/2023 10:40:00 PM	
Xylenes, Total	ND	0.099	mg/Kg	1	1/19/2023 10:40:00 PM	
Surr: 4-Bromofluorobenzene	91.5	70-130	%Rec	1	1/19/2023 10:40:00 PM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 7:14:59 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 17 of 56

**CLIENT:** Marathon Oil Company

**Project:** Taylor Deep 12 Federal 006

Analytical Report Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF19-0.5' Collection Date: 1/13/2023 9:54:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-018	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/20/2023 4:38:45 AM	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/20/2023 4:38:45 AM	
Surr: DNOP	107	69-147	%Rec	1	1/20/2023 4:38:45 AM	
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/22/2023 10:25:00 PM	
Surr: BFB	90.3	37.7-212	%Rec	1	1/22/2023 10:25:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.024	mg/Kg	1	1/19/2023 10:59:00 PM	
Toluene	ND	0.048	mg/Kg	1	1/19/2023 10:59:00 PM	
Ethylbenzene	ND	0.048	mg/Kg	1	1/19/2023 10:59:00 PM	
Xylenes, Total	ND	0.097	mg/Kg	1	1/19/2023 10:59:00 PM	
Surr: 4-Bromofluorobenzene	91.6	70-130	%Rec	1	1/19/2023 10:59:00 PM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 7:27:19 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF20-0.5' Collection Date: 1/13/2023 9:56:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-019	Matrix: SOIL	Rece	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH		
Diesel Range Organics (DRO)	9.3	8.8	mg/Kg	1	1/20/2023 4:59:42 AM		
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	1/20/2023 4:59:42 AM		
Surr: DNOP	117	69-147	%Rec	1	1/20/2023 4:59:42 AM		
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM		
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/22/2023 10:45:00 PM		
Surr: BFB	91.1	37.7-212	%Rec	1	1/22/2023 10:45:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: CCM		
Benzene	ND	0.024	mg/Kg	1	1/19/2023 11:19:00 PM		
Toluene	ND	0.049	mg/Kg	1	1/19/2023 11:19:00 PM		
Ethylbenzene	ND	0.049	mg/Kg	1	1/19/2023 11:19:00 PM		
Xylenes, Total	ND	0.097	mg/Kg	1	1/19/2023 11:19:00 PM		
Surr: 4-Bromofluorobenzene	93.2	70-130	%Rec	1	1/19/2023 11:19:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: NAI		
Chloride	ND	60	mg/Kg	20	1/19/2023 7:39:41 AM		

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 19 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/25/2023 Client Sample ID: CONF21-1' Collection Date: 1/13/2023 2:01:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-020 Matrix: SOIL Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.5 mg/Kg 1 1/20/2023 5:10:16 AM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 1/20/2023 5:10:16 AM Surr: DNOP 120 69-147 %Rec 1 1/20/2023 5:10:16 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/22/2023 11:04:00 PM 4.9 mg/Kg 1 Surr: BFB 87.8 37.7-212 %Rec 1 1/22/2023 11:04:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/19/2023 11:38:00 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/19/2023 11:38:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/19/2023 11:38:00 PM Xylenes, Total ND 0.097 mg/Kg 1/19/2023 11:38:00 PM 1 Surr: 4-Bromofluorobenzene 92.9 70-130 %Rec 1 1/19/2023 11:38:00 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 1/19/2023 7:52:02 AM ND 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 20 of 56

Lab ID:

**CLIENT:** Marathon Oil Company

2301576-021

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF22Wall-0.5' Collection Date: 1/13/2023 2:55:00 PM Received Date: 1/17/2023 7:45:00 AM

<b>Euo ID</b> 2001070 021	Soll					
Analyses	Result	RL Qual Units		DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/20/2023 5:20:55 AM	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/20/2023 5:20:55 AM	
Surr: DNOP	115	69-147	%Rec	1	1/20/2023 5:20:55 AM	
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/22/2023 11:24:00 PM	
Surr: BFB	88.2	37.7-212	%Rec	1	1/22/2023 11:24:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.025	mg/Kg	1	1/19/2023 11:58:00 PM	
Toluene	ND	0.050	mg/Kg	1	1/19/2023 11:58:00 PM	
Ethylbenzene	ND	0.050	mg/Kg	1	1/19/2023 11:58:00 PM	
Xylenes, Total	ND	0.10	mg/Kg	1	1/19/2023 11:58:00 PM	
Surr: 4-Bromofluorobenzene	91.4	70-130	%Rec	1	1/19/2023 11:58:00 PM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 8:04:22 AM	

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF23Wall-0' Collection Date: 1/13/2023 1:58:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-022	Matrix: SOIL	<b>Received Date:</b> 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/20/2023 5:31:33 AM	
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/20/2023 5:31:33 AM	
Surr: DNOP	109	69-147	%Rec	1	1/20/2023 5:31:33 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/22/2023 11:43:00 PM	
Surr: BFB	87.1	37.7-212	%Rec	1	1/22/2023 11:43:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.024	mg/Kg	1	1/20/2023 12:17:00 AM	
Toluene	ND	0.048	mg/Kg	1	1/20/2023 12:17:00 AM	
Ethylbenzene	ND	0.048	mg/Kg	1	1/20/2023 12:17:00 AM	
Xylenes, Total	ND	0.097	mg/Kg	1	1/20/2023 12:17:00 AM	
Surr: 4-Bromofluorobenzene	92.5	70-130	%Rec	1	1/20/2023 12:17:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	ND	60	mg/Kg	20	1/19/2023 8:16:42 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: CONF08-2' Collection Date: 1/13/2023 10:03:00 AM **Received Date:** 1/17/2023 7:45:00 AM

Lab ID: 2301576-023	Matrix: SOIL	Received Date: 1/17/2023 7:45:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/20/2023 5:42:23 AM	
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/20/2023 5:42:23 AM	
Surr: DNOP	106	69-147	%Rec	1	1/20/2023 5:42:23 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/23/2023 12:03:00 AM	
Surr: BFB	85.9	37.7-212	%Rec	1	1/23/2023 12:03:00 AM	
EPA METHOD 8021B: VOLATILES					Analyst: CCM	
Benzene	ND	0.025	mg/Kg	1	1/20/2023 12:37:00 AM	
Toluene	ND	0.049	mg/Kg	1	1/20/2023 12:37:00 AM	
Ethylbenzene	ND	0.049	mg/Kg	1	1/20/2023 12:37:00 AM	
Xylenes, Total	ND	0.098	mg/Kg	1	1/20/2023 12:37:00 AM	
Surr: 4-Bromofluorobenzene	94.4	70-130	%Rec	1	1/20/2023 12:37:00 AM	
EPA METHOD 300.0: ANIONS					Analyst: NAI	
Chloride	130	60	mg/Kg	20	1/19/2023 8:29:03 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- ND PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/25/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS09-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 10:27:00 AM Lab ID: 2301576-024 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 1 1/20/2023 5:53:10 AM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/20/2023 5:53:10 AM Surr: DNOP 105 69-147 %Rec 1 1/20/2023 5:53:10 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 12:22:00 AM 4.9 mg/Kg 1 Surr: BFB 83.8 37.7-212 %Rec 1 1/23/2023 12:22:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 1:15:00 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 1:15:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 1:15:00 AM Xylenes, Total ND 0.099 mg/Kg 1/20/2023 1:15:00 AM 1 Surr: 4-Bromofluorobenzene 91.8 70-130 %Rec 1 1/20/2023 1:15:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 7:12:01 PM ND 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 24 of 56

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS09-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 10:33:00 AM Lab ID: 2301576-025 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 8.7 mg/Kg 1 1/20/2023 6:03:58 AM Motor Oil Range Organics (MRO) ND 43 mg/Kg 1 1/20/2023 6:03:58 AM Surr: DNOP 69-147 %Rec 1 1/20/2023 6:03:58 AM 113 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 12:42:00 AM 5.0 mg/Kg 1 Surr: BFB 90.3 37.7-212 %Rec 1 1/23/2023 12:42:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 1:35:00 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/20/2023 1:35:00 AM Ethylbenzene ND 0.050 mg/Kg 1 1/20/2023 1:35:00 AM Xylenes, Total ND mg/Kg 1/20/2023 1:35:00 AM 0.10 1 Surr: 4-Bromofluorobenzene 92.1 70-130 %Rec 1 1/20/2023 1:35:00 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg ND 60 20 1/19/2023 9:18:26 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceed.

H Holding times for preparation or analysis exceeded

NDNot Detected at the Reporting LimitPQLPractical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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Date Reported: 1/25/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS10-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 10:35:00 AM Lab ID: 2301576-026 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 2900 200 mg/Kg 20 1/19/2023 2:36:26 PM Motor Oil Range Organics (MRO) 2700 1000 mg/Kg 20 1/19/2023 2:36:26 PM Surr: DNOP 0 69-147 S %Rec 20 1/19/2023 2:36:26 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) 7.9 1/23/2023 1:01:00 AM 4.9 mg/Kg 1 Surr: BFB 90.6 37.7-212 %Rec 1 1/23/2023 1:01:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 1:54:00 AM 0.025 mg/Kg 1 Toluene 2.9 0.049 mg/Kg 1 1/20/2023 1:54:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 1:54:00 AM Xylenes, Total ND 0.098 mg/Kg 1/20/2023 1:54:00 AM 1 Surr: 4-Bromofluorobenzene 92.3 70-130 %Rec 1 1/20/2023 1:54:00 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 1/19/2023 9:30:47 AM ND 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 26 of 56

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS10-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 10:42:00 AM Lab ID: 2301576-027 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.1 mg/Kg 1 1/20/2023 6:14:42 AM Motor Oil Range Organics (MRO) ND 45 mg/Kg 1 1/20/2023 6:14:42 AM Surr: DNOP 126 69-147 %Rec 1 1/20/2023 6:14:42 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 1:21:00 AM 5.0 mg/Kg 1 Surr: BFB 86.9 37.7-212 %Rec 1 1/23/2023 1:21:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 2:14:00 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/20/2023 2:14:00 AM Ethylbenzene ND 0.050 mg/Kg 1 1/20/2023 2:14:00 AM Xylenes, Total ND mg/Kg 1/20/2023 2:14:00 AM 0.099 1 Surr: 4-Bromofluorobenzene 90.0 70-130 %Rec 1 1/20/2023 2:14:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 10:04:50 PM ND 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceed.

H Holding times for preparation or analysis exceeded

 ND
 Not Detected at the Reporting Limit

 PQL
 Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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Lab ID:

**CLIENT:** Marathon Oil Company

2301576-028

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS11-0' Collection Date: 1/13/2023 10:44:00 AM Received Date: 1/17/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS					Analyst: DGH
Diesel Range Organics (DRO)	2900	190		mg/Kg	20	1/19/2023 3:22:06 PM
Motor Oil Range Organics (MRO)	2800	940		mg/Kg	20	1/19/2023 3:22:06 PM
Surr: DNOP	0	69-147	S	%Rec	20	1/19/2023 3:22:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/23/2023 1:40:00 AM
Surr: BFB	89.9	37.7-212		%Rec	1	1/23/2023 1:40:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	1/20/2023 2:33:00 AM
Toluene	1.2	0.050		mg/Kg	1	1/20/2023 2:33:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	1/20/2023 2:33:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	1/20/2023 2:33:00 AM
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	1/20/2023 2:33:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	ND	61		mg/Kg	20	1/19/2023 10:41:52 PM

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS11-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 10:49:00 AM Lab ID: 2301576-029 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 1 1/20/2023 6:25:26 AM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/20/2023 6:25:26 AM Surr: DNOP 106 69-147 %Rec 1 1/20/2023 6:25:26 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 2:00:00 AM 4.9 mg/Kg 1 Surr: BFB 87.0 37.7-212 %Rec 1 1/23/2023 2:00:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 2:53:00 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 2:53:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 2:53:00 AM Xylenes, Total ND 0.098 mg/Kg 1/20/2023 2:53:00 AM 1 Surr: 4-Bromofluorobenzene 90.1 70-130 %Rec 1 1/20/2023 2:53:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 10:54:12 PM ND 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 29 of 56

Lab ID:

**CLIENT:** Marathon Oil Company

2301576-030

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS12-0' Collection Date: 1/13/2023 11:02:00 AM Received Date: 1/17/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS					Analyst: DGH
Diesel Range Organics (DRO)	1600	95		mg/Kg	10	1/19/2023 4:04:29 PM
Motor Oil Range Organics (MRO)	1200	470		mg/Kg	10	1/19/2023 4:04:29 PM
Surr: DNOP	0	69-147	S	%Rec	10	1/19/2023 4:04:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/23/2023 2:19:00 AM
Surr: BFB	85.7	37.7-212		%Rec	1	1/23/2023 2:19:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	1/20/2023 3:12:00 AM
Toluene	ND	0.049		mg/Kg	1	1/20/2023 3:12:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	1/20/2023 3:12:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	1/20/2023 3:12:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	1/20/2023 3:12:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	ND	60		mg/Kg	20	1/19/2023 11:06:33 PM

Matrix: SOIL

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS12-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:05:00 AM Lab ID: 2301576-031 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 10 mg/Kg 1 1/20/2023 6:36:08 AM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 1/20/2023 6:36:08 AM Surr: DNOP 104 69-147 %Rec 1 1/20/2023 6:36:08 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 4.7 1/23/2023 2:39:00 AM mg/Kg 1 Surr: BFB 88.7 37.7-212 %Rec 1 1/23/2023 2:39:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 3:31:00 AM 0.024 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 1/20/2023 3:31:00 AM Ethylbenzene ND 0.047 mg/Kg 1 1/20/2023 3:31:00 AM Xylenes, Total ND 0.095 mg/Kg 1 1/20/2023 3:31:00 AM Surr: 4-Bromofluorobenzene 91.9 70-130 %Rec 1 1/20/2023 3:31:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 11:18:54 PM 190 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceed.

H Holding times for preparation or analysis exceeded

NDNot Detected at the Reporting LimitPQLPractical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS13-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:07:00 AM Lab ID: 2301576-032 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH **Diesel Range Organics (DRO)** 29 9.6 mg/Kg 1 1/20/2023 6:46:50 AM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 1/20/2023 6:46:50 AM Surr: DNOP 104 69-147 %Rec 1 1/20/2023 6:46:50 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 4.7 1/23/2023 2:58:00 AM mg/Kg 1 Surr: BFB 85.4 37.7-212 %Rec 1 1/23/2023 2:58:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 3:51:00 AM 0.024 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 1/20/2023 3:51:00 AM Ethylbenzene ND 0.047 mg/Kg 1 1/20/2023 3:51:00 AM Xylenes, Total ND 0.095 mg/Kg 1/20/2023 3:51:00 AM 1 Surr: 4-Bromofluorobenzene 93.4 70-130 %Rec 1 1/20/2023 3:51:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 11:31:15 PM 170 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 32 of 56

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS13-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:10:00 AM Lab ID: 2301576-033 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 1 1/20/2023 6:57:30 AM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 1/20/2023 6:57:30 AM Surr: DNOP 108 69-147 %Rec 1 1/20/2023 6:57:30 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 3:17:00 AM 4.9 mg/Kg 1 Surr: BFB 83.8 37.7-212 %Rec 1 1/23/2023 3:17:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/20/2023 4:10:00 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 4:10:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 4:10:00 AM Xylenes, Total ND 0.098 mg/Kg 1 1/20/2023 4:10:00 AM Surr: 4-Bromofluorobenzene 92.8 70-130 %Rec 1 1/20/2023 4:10:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 11:43:36 PM ND 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceed.

H Holding times for preparation or analysis exceeded

 ND
 Not Detected at the Reporting Limit

 PQL
 Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS14-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:13:00 AM Lab ID: 2301576-034 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** 2600 96 mg/Kg 10 1/20/2023 11:30:42 AM Motor Oil Range Organics (MRO) 1200 480 mg/Kg 10 1/20/2023 11:30:42 AM Surr: DNOP 0 69-147 S %Rec 10 1/20/2023 11:30:42 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 5 1/23/2023 6:32:00 AM 23 mg/Kg 5 Surr: BFB 99.0 37.7-212 %Rec 1/23/2023 6:32:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 6:32:00 AM 0.12 mg/Kg 5 Toluene 4.4 0.23 mg/Kg 5 1/23/2023 6:32:00 AM Ethylbenzene ND 0.23 mg/Kg 5 1/23/2023 6:32:00 AM Xylenes, Total ND 0.47 mg/Kg 5 1/23/2023 6:32:00 AM Surr: 4-Bromofluorobenzene 93.7 70-130 %Rec 5 1/23/2023 6:32:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS mg/Kg Chloride 1/19/2023 11:55:56 PM 240 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 34 of 56

**EPA METHOD 300.0: ANIONS** 

Chloride

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS14-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:16:00 AM Lab ID: 2301576-035 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.9 mg/Kg 1 1/20/2023 11:41:16 AM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/20/2023 11:41:16 AM Surr: DNOP 104 69-147 %Rec 1 1/20/2023 11:41:16 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 7:31:00 AM 4.9 mg/Kg 1 Surr: BFB 85.9 37.7-212 %Rec 1 1/23/2023 7:31:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 7:31:00 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/23/2023 7:31:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/23/2023 7:31:00 AM Xylenes, Total ND 0.097 mg/Kg 1/23/2023 7:31:00 AM 1 Surr: 4-Bromofluorobenzene 87.0 70-130 %Rec 1 1/23/2023 7:31:00 AM

320

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

mg/Kg

20

59

Р Sample pH Not In Range

RL Reporting Limit Page 35 of 56

Analyst: CAS

1/20/2023 12:32:58 AM

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS15-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:19:00 AM Lab ID: 2301576-036 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 920 99 mg/Kg 10 1/20/2023 11:51:47 AM Motor Oil Range Organics (MRO) 500 490 mg/Kg 10 1/20/2023 11:51:47 AM Surr: DNOP 0 69-147 S %Rec 10 1/20/2023 11:51:47 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 8:29:00 AM 4.8 mg/Kg 1 Surr: BFB 95.1 37.7-212 %Rec 1 1/23/2023 8:29:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 8:29:00 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/23/2023 8:29:00 AM Ethylbenzene ND 0.048 mg/Kg 1 1/23/2023 8:29:00 AM Xylenes, Total ND 0.096 mg/Kg 1/23/2023 8:29:00 AM 1 Surr: 4-Bromofluorobenzene 88.4 70-130 %Rec 1 1/23/2023 8:29:00 AM **EPA METHOD 300.0: ANIONS** 

ND

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

**Qualifiers:** 

Chloride

Value exceeds Maximum Contaminant Level D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

mg/Kg

20

60

Р Sample pH Not In Range

RL Reporting Limit Page 36 of 56

Analyst: CAS

1/20/2023 1:09:58 AM

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS15-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:22:00 AM Lab ID: 2301576-037 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.6 mg/Kg 1 1/20/2023 12:02:17 PM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 1/20/2023 12:02:17 PM Surr: DNOP 108 69-147 %Rec 1 1/20/2023 12:02:17 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 4.7 1/23/2023 8:49:00 AM mg/Kg 1 Surr: BFB 89.9 37.7-212 %Rec 1 1/23/2023 8:49:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 8:49:00 AM 0.023 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 1/23/2023 8:49:00 AM Ethylbenzene ND 0.047 mg/Kg 1 1/23/2023 8:49:00 AM Xylenes, Total ND 0.094 mg/Kg 1/23/2023 8:49:00 AM 1 Surr: 4-Bromofluorobenzene 86.2 70-130 %Rec 1 1/23/2023 8:49:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 340 60 20 1/20/2023 1:22:19 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceed

H Holding times for preparation or analysis exceeded

 ND
 Not Detected at the Reporting Limit

 PQL
 Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit

RL Repo

Page 37 of 56

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS16-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:25:00 AM Lab ID: 2301576-038 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 170 10 mg/Kg 1 1/20/2023 12:12:49 PM Motor Oil Range Organics (MRO) 120 50 mg/Kg 1 1/20/2023 12:12:49 PM Surr: DNOP 94.1 69-147 %Rec 1 1/20/2023 12:12:49 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 9:09:00 AM 4.6 mg/Kg 1 Surr: BFB 85.9 37.7-212 %Rec 1 1/23/2023 9:09:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 9:09:00 AM 0.023 mg/Kg 1 Toluene ND 0.046 mg/Kg 1 1/23/2023 9:09:00 AM Ethylbenzene ND 0.046 mg/Kg 1 1/23/2023 9:09:00 AM Xylenes, Total ND 0.093 mg/Kg 1/23/2023 9:09:00 AM 1 Surr: 4-Bromofluorobenzene 84.0 70-130 %Rec 1 1/23/2023 9:09:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 840 60 20 1/20/2023 1:34:40 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 38 of 56

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS16-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 11:29:00 AM Lab ID: 2301576-039 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 9.5 mg/Kg 1 1/20/2023 12:34:03 PM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 1/20/2023 12:34:03 PM Surr: DNOP 106 69-147 %Rec 1 1/20/2023 12:34:03 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 9:28:00 AM 4.9 mg/Kg 1 Surr: BFB 86.0 37.7-212 %Rec 1 1/23/2023 9:28:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 9:28:00 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/23/2023 9:28:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/23/2023 9:28:00 AM Xylenes, Total ND 0.098 mg/Kg 1/23/2023 9:28:00 AM 1 Surr: 4-Bromofluorobenzene 86.9 70-130 %Rec 1 1/23/2023 9:28:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/20/2023 1:47:01 AM 230 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 39 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS17B-0' Collection Date: 1/13/2023 3:01:00 PM **Dessived Dete:** 1/17/2022 7:45:00 AM

Lab ID: 2301576-040	Matrix: SOIL	Rece	eived Date:	1/17/2	023 7:45:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	12	9.7	mg/Kg	1	1/20/2023 12:44:35 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/20/2023 12:44:35 PM
Surr: DNOP	110	69-147	%Rec	1	1/20/2023 12:44:35 PM
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/23/2023 9:48:00 AM
Surr: BFB	85.5	37.7-212	%Rec	1	1/23/2023 9:48:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/23/2023 9:48:00 AM
Toluene	ND	0.049	mg/Kg	1	1/23/2023 9:48:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	1/23/2023 9:48:00 AM
Xylenes, Total	ND	0.099	mg/Kg	1	1/23/2023 9:48:00 AM
Surr: 4-Bromofluorobenzene	87.0	70-130	%Rec	1	1/23/2023 9:48:00 AM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	2200	60	mg/Kg	20	1/20/2023 1:59:22 AM

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- ND PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Lab ID:

**CLIENT:** Marathon Oil Company

2301576-041

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/25/2023 Client Sample ID: SS18-0' Collection Date: 1/13/2023 1:22:00 PM Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM . Onel Unit .... . . . . ----.

Result	RL	Qual	Units	DF	Date Analyzed
GANICS					Analyst: DGH
1700	190		mg/Kg	20	1/20/2023 12:55:09 PM
1800	950		mg/Kg	20	1/20/2023 12:55:09 PM
0	69-147	S	%Rec	20	1/20/2023 12:55:09 PM
					Analyst: CCM
ND	4.8		mg/Kg	1	1/23/2023 10:27:00 AM
91.1	37.7-212		%Rec	1	1/23/2023 10:27:00 AM
					Analyst: CCM
ND	0.024		mg/Kg	1	1/23/2023 10:27:00 AM
ND	0.048		mg/Kg	1	1/23/2023 10:27:00 AM
ND	0.048		mg/Kg	1	1/23/2023 10:27:00 AM
ND	0.097		mg/Kg	1	1/23/2023 10:27:00 AM
88.4	70-130		%Rec	1	1/23/2023 10:27:00 AM
					Analyst: JTT
ND	60		mg/Kg	20	1/21/2023 12:10:11 AM
	GANICS 1700 1800 0 ND 91.1 ND ND ND ND 88.4	GANICS         1700         190           1800         950         0         69-147           ND         4.8         91.1         37.7-212           ND         0.024         ND         0.048           ND         0.048         ND         0.097           88.4         70-130         70-130	SANICS         1700         190           1800         950         0         69-147         S           ND         4.8         91.1         37.7-212         ND         0.024           ND         0.048         ND         0.048         ND         0.097           88.4         70-130         70-130         70-130         70-130         70-130	SANICS         1700         190         mg/Kg           1800         950         mg/Kg           0         69-147         S         %Rec           ND         4.8         mg/Kg           91.1         37.7-212         %Rec           ND         0.024         mg/Kg           ND         0.048         mg/Kg           ND         0.097         mg/Kg           88.4         70-130         %Rec	SANCE         ITO0         190         mg/Kg         20           1800         950         mg/Kg         20           0         69-147         S         %Rec         20           ND         4.8         mg/Kg         1           91.1         37.7-212         %Rec         1           ND         0.024         mg/Kg         1           ND         0.048         mg/Kg         1           ND         0.048         mg/Kg         1           ND         0.097         mg/Kg         1           ND         0.097         mg/Kg         1           88.4         70-130         %Rec         1

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit % Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 41 of 56

**CLIENT:** Marathon Oil Company

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS19A-0' Collection Date: 1/13/2023 2:07:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301576-042	Matrix: SOIL	Rece	eived Date:	1/17/2	023 7:45:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/20/2023 1:05:45 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/20/2023 1:05:45 PM
Surr: DNOP	98.6	69-147	%Rec	1	1/20/2023 1:05:45 PM
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/23/2023 10:47:00 AM
Surr: BFB	90.5	37.7-212	%Rec	1	1/23/2023 10:47:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.023	mg/Kg	1	1/23/2023 10:47:00 AM
Toluene	ND	0.047	mg/Kg	1	1/23/2023 10:47:00 AM
Ethylbenzene	ND	0.047	mg/Kg	1	1/23/2023 10:47:00 AM
Xylenes, Total	ND	0.094	mg/Kg	1	1/23/2023 10:47:00 AM
Surr: 4-Bromofluorobenzene	90.6	70-130	%Rec	1	1/23/2023 10:47:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	ND	60	mg/Kg	20	1/21/2023 12:22:32 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/25/2023

1/21/2023 12:34:52 AM

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS20-0' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 1:28:00 PM Lab ID: 2301576-043 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 10 mg/Kg 1 1/20/2023 1:26:51 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 1/20/2023 1:26:51 PM Surr: DNOP 105 69-147 %Rec 1 1/20/2023 1:26:51 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 11:06:00 AM 4.9 mg/Kg 1 Surr: BFB 86.9 37.7-212 %Rec 1 1/23/2023 11:06:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 11:06:00 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/23/2023 11:06:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/23/2023 11:06:00 AM Xylenes, Total ND 0.098 mg/Kg 1/23/2023 11:06:00 AM 1 Surr: 4-Bromofluorobenzene 88.1 70-130 %Rec 1 1/23/2023 11:06:00 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT

ND

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

**Qualifiers:** 

Chloride

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

mg/Kg

20

60

RL Reporting Limit Page 43 of 56

Lab ID:

**CLIENT:** Marathon Oil Company

2301576-044

Taylor Deep 12 Federal 006

**Analytical Report** Lab Order 2301576

Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SS21-0' Collection Date: 1/13/2023 2:20:00 PM Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS					Analyst: DGH
Diesel Range Organics (DRO)	14000	200		mg/Kg	20	1/20/2023 1:37:27 PM
Motor Oil Range Organics (MRO)	5300	980		mg/Kg	20	1/20/2023 1:37:27 PM
Surr: DNOP	0	69-147	S	%Rec	20	1/20/2023 1:37:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	1400	25		mg/Kg	5	1/23/2023 11:26:00 AM
Surr: BFB	1270	37.7-212	S	%Rec	5	1/23/2023 11:26:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	0.89	0.12		mg/Kg	5	1/23/2023 11:26:00 AM
Toluene	25	2.5		mg/Kg	50	1/24/2023 3:08:00 PM
Ethylbenzene	14	0.25		mg/Kg	5	1/23/2023 11:26:00 AM
Xylenes, Total	91	5.0		mg/Kg	50	1/24/2023 3:08:00 PM
Surr: 4-Bromofluorobenzene	497	70-130	S	%Rec	5	1/23/2023 11:26:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	1/21/2023 12:47:13 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/25/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Marathon Oil Company Client Sample ID: SS21-1' **Project:** Taylor Deep 12 Federal 006 Collection Date: 1/13/2023 2:01:00 PM Lab ID: 2301576-045 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH **Diesel Range Organics (DRO)** 56 9.9 mg/Kg 1 1/20/2023 2:19:46 PM Motor Oil Range Organics (MRO) 59 49 mg/Kg 1 1/20/2023 2:19:46 PM 69-147 Surr: DNOP 119 %Rec 1 1/20/2023 2:19:46 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/23/2023 11:46:00 AM 4.8 mg/Kg 1 Surr: BFB 112 37.7-212 %Rec 1 1/23/2023 11:46:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/23/2023 11:46:00 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/23/2023 11:46:00 AM Ethylbenzene ND 0.048 mg/Kg 1 1/23/2023 11:46:00 AM Xylenes, Total ND 0.096 mg/Kg 1/23/2023 11:46:00 AM 1 Surr: 4-Bromofluorobenzene 93.2 70-130 %Rec 1 1/23/2023 11:46:00 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/21/2023 12:59:33 AM ND 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

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Analyte

Sample ID: LCS-72686

Client ID: LCSS

Chloride

# QC SUMMARY REPORT Hall

Result

ND

PQL

SampType: Ics

Batch ID: 72686

1.5

Client ID:	PBS	Batc	h ID: 727	23		Run	No: 94	4086				
Prep Date:	1/19/2023	Analysis [	Date: 1/	19/2023		Seq	No: 3:	396840	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref	Val %	REC	LowLimit	HighLimit	%RPD	RPDLimit	Qu
Chloride		ND	1.5									
Sample ID:	LCS-72723	Samp	Type: Ics			TestCo	de: EF	PA Method	300.0: Anions	6		
Client ID:	LCSS	Batc	h ID: 727	/23		Run	No: 94	4086				
Prep Date:	1/19/2023	Analysis [	Date: <b>1/</b> *	19/2023		Sea						
			-			OCY	NO. 3.	396841	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref		REC	396841 LowLimit	Units: <b>mg/K</b> HighLimit	<b>g</b> %RPD	RPDLimit	Qu
Analyte Chloride		Result 14							•	•	RPDLimit	Qu
,			PQL	SPK value		Val %	REC	LowLimit	HighLimit	•	RPDLimit	Qu
Chloride	exceeds Maximum Conta	14	PQL	SPK value	B Ana	Val % 0	REC 94.6	LowLimit 90	HighLimit 110	•	RPDLimit	Qu
Chloride	e Diluted Due to Matrix	14 aminant Level.	PQL	SPK value	B Ana E Abo	Val % 0	REC 94.6 d in the attion Rang	LowLimit 90 ssociated Methor ge/Estimated Value	HighLimit 110	•	RPDLimit	Qu
Chloride		14 aminant Level. r analysis exceeded	PQL	SPK value	B Ana E Aba J Ana	Val % 0	REC 94.6 d in the attion Rang d below c	LowLimit 90 ssociated Method ge/Estimated Val yuantitation limits	HighLimit 110	•		
Chloride	e Diluted Due to Matrix g times for preparation of	14 aminant Level. r analysis exceeded .imit	PQL 1.5	SPK value 15.00	B Ana E Abo J Ana P San	Val % 0	REC 94.6 d in the at tion Range d below of In Range	LowLimit 90 ssociated Method ge/Estimated Val yuantitation limits	HighLimit 110	•	RPDLimit Page 46 o	

L		ntal Analysis Laboratory	wo#:	2301576 25-Jan-23
Client: Project:		athon Oil Company or Deep 12 Federal 006		
Sample ID:	MB-72686	SampType: mblk	TestCode: EPA Method 300.0: Anions	
Client ID:	PBS	Batch ID: 72686	RunNo: 94056	
Prep Date:	1/18/2023	Analysis Date: 1/18/2023	SeqNo: 3395603 Units: mg/Kg	

HighLimit

TestCode: EPA Method 300.0: Anions

RunNo: 94056

%RPD

RPDLimit

Qual

SPK value SPK Ref Val %REC LowLimit

Prep Date:	1/18/2023	Analysis D	ate: 1/	18/2023	:	SeqNo: 3	395604	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	96.4	90	110			
Sample ID:	MB-72693	SampT	ype: <b>mt</b>	olk	Tes	stCode: EF	PA Method	300.0: Anions	;		
Client ID:	PBS	Batch	ID: 72	693	F	RunNo: <b>9</b> 4	4056				
Prep Date:	1/18/2023	Analysis D	ate: 1/	19/2023	:	SeqNo: 3	395667	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72693	SampT	ype: Ics	5	Tes	stCode: EF	PA Method	300.0: Anions	;		
Client ID:	LCSS	Batch	ID: 72	693	F	RunNo: <b>9</b> 4	4056				
Prep Date:	1/18/2023	Analysis D	ate: 1/	19/2023	:	SeqNo: 3	395668	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		15	1.5	15.00	0	97.6	90	110			
Sample ID:	MB-72723	SampT	ype: <b>m</b> t	olk	Tes	stCode: EF	PA Method	300.0: Anions	;		
Client ID:	PBS	Batch	ID: 72	723	F	RunNo: 94	4086				
Prep Date:	1/19/2023	Analysis D	ate: 1/	19/2023	:	SeqNo: 3	396840	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72723	SampT	ype: Ics	;	Tes	stCode: EF	PA Method	300.0: Anions	5		
Client ID:	LCSS	Batch	ID: 72	723	F	RunNo: 94	4086				
Prep Date:	1/19/2023	Analysis D	ate: 1/	19/2023	:	SeqNo: 3	396841	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.6	90	110			

Client: Project:		athon Oil Compa lor Deep 12 Fede	•	6							
Sample ID:	MB-72729	SampTy	pe: <b>ME</b>	LK	Tes	tCode: EF	PA Method	300.0: Anions	;		
Client ID:	PBS					RunNo: <b>9</b> 4	1097				
Prep Date:	1/20/2023					SeqNo: 33	397311	Units: mg/K	g		
Analyte		Result PQL SPK valu				%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72729	SampTy	pe: LC	s	Tes	tCode: EF	PA Method	300.0: Anions	;		
Client ID:	LCSS	Batch	ID: 727	29	F	RunNo: <b>9</b> 4	1097				
Prep Date:	1/20/2023	Analysis Da	te: 1/2	20/2023	S	SeqNo: 33	397312	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.2	90	110			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301576

25-Jan-23

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Oil Company eep 12 Federal 006				
Sample ID: LCS-72679	SampType: LCS	Tes	tCode: EPA Method	8015M/D: Diesel Range	Organics
Client ID: LCSS	Batch ID: 72679	F	RunNo: <b>94064</b>		
Prep Date: 1/18/2023	Analysis Date: 1/19/202	23	SeqNo: <b>3395762</b>	Units: <b>mg/Kg</b>	
Analyte	Result PQL SPK	K value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	46 10	50.00 0	92.0 61.9	130	
Surr: DNOP	5.9	5.000	118 69	147	
Sample ID: LCS-72682	SampType: LCS	Tes	tCode: EPA Method	8015M/D: Diesel Range	Organics
Client ID: LCSS	Batch ID: 72682	F	RunNo: <b>94064</b>		
Prep Date: 1/18/2023	Analysis Date: 1/19/202	23	SeqNo: 3395765	Units: mg/Kg	
Analyte	Result PQL SPK	K value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	47 10	50.00 0	94.3 61.9	130	
Surr: DNOP	6.0	5.000	119 69	147	
Sample ID: MB-72679	SampType: MBLK	Tes	tCode: EPA Method	8015M/D: Diesel Range	Organics
Client ID: PBS	Batch ID: 72679	F	RunNo: <b>94064</b>		
Prep Date: 1/18/2023	Analysis Date: 1/19/202	23	SeqNo: <b>3395766</b>	Units: mg/Kg	
Analyte	Result PQL SPK	Kvalue SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	ND 10				
Motor Oil Range Organics (MRO)	ND 50	40.00	400 00	4.47	
Surr: DNOP	11	10.00	106 69	147	
Sample ID: MB-72682	SampType: MBLK	Tes	tCode: EPA Method	8015M/D: Diesel Range	Organics
Client ID: PBS	Batch ID: 72682	F	RunNo: <b>94064</b>		
Prep Date: 1/18/2023	Analysis Date: 1/19/202	23	SeqNo: <b>3395769</b>	Units: <b>mg/Kg</b>	
Analyte	Result PQL SPK	Kvalue SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	ND 10				
Motor Oil Range Organics (MRO)	ND 50				
Surr: DNOP	12	10.00	117 69	147	
Sample ID: 2301576-033AMS	SampType: MS	Tes	stCode: EPA Method	8015M/D: Diesel Range	Organics
Client ID: SS13-1'	Batch ID: 72682	F	RunNo: <b>94064</b>		
Prep Date: 1/18/2023	Analysis Date: 1/20/202	23	SeqNo: <b>3396916</b>	Units: <b>mg/Kg</b>	
Analyte	Result PQL SPK	Kvalue SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	43 9.7	48.54 0	87.6 54.2	135	
Surr: DNOP	5.4	4.854	112 69	147	

#### Qualifiers:

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- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
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- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Client: Project:	Marathon Taylor De	-	•	6								
Sample ID:	2301576-033AMSD	SampT	уре: МS	SD	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID:	SS13-1'	Batch	n ID: 726	682	F	RunNo: <b>94064</b>						
Prep Date:	1/18/2023	Analysis D	ate: 1/2	20/2023	S	SeqNo: 33	96917	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range (	Drganics (DRO)	40	9.4	46.82	0	84.5	54.2	135	7.25	29.2		
Surr: DNOP		5.3		4.682		114	69	147	0	0		
Sample ID:	LCS-72711	SampT	ype: LC	S	Tes	tCode: EF	A Method	8015M/D: Die	sel Range	Organics		
Client ID:	LCSS	Batch	n ID: 727	711	F	RunNo: <b>9</b> 4	118					
Prep Date:	1/19/2023	Analysis D	ate: 1/2	20/2023	S	SeqNo: 33	98454	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range (	Drganics (DRO)	41	10	50.00	0	81.0	61.9	130				
Surr: DNOP		5.1		5.000		103	69	147				
Sample ID:	MB-72711	SampT	уре: МВ	BLK	Tes	tCode: EF	A Method	8015M/D: Die	sel Range	Organics		
Client ID:	PBS	Batch	n ID: 727	711	F	RunNo: <b>9</b> 4	118					
Prep Date:	1/19/2023	Analysis D	ate: 1/2	20/2023	S	SeqNo: 33	98456	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range (	Organics (DRO)	ND	10									
Motor Oil Rang	e Organics (MRO)	ND	50									
Surr: DNOP		9.9		10.00		98.5	69	147				

Qualifiers:

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- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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25-Jan-23

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:		n Oil Comp Deep 12 Fed	•	6							
Sample ID:	lcs-72649	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Client ID:	LCSS		ID: 72			RunNo: 94		001021 04001	ino rango		
Prep Date:	1/17/2023	Analysis D	ate: 1/	18/2023		SeqNo: 3		Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		2000		1000		200	37.7	212	, or tr 2		444
Sample ID:	mb-72649	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Client ID:	PBS	•	ID: 72			RunNo: 94		001021 04001	ino rango		
Prep Date:	1/17/2023	Analysis D	ate: 1/	18/2023		SeqNo: 3		Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		960		1000		96.0	37.7	212	, or tr 2		444
Sample ID:	lcs-72664	SampT	ype: LC	s	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Client ID:	LCSS		ID: 72			RunNo: <b>9</b> 4					
Prep Date:	1/17/2023	Analysis D	ate: 1/	18/2023	S	SeqNo: 33	394826	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
,	ge Organics (GRO)	23	5.0	25.00	0	90.4	72.3	137			
Surr: BFB		2100		1000		210	37.7	212			
Sample ID:	mb-72664	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Sample ID: Client ID:	mb-72664 PBS	•	ype: <b>ME</b> ID: <b>72</b>			tCode: EF		8015D: Gasol	ine Range		
•		•	ID: 72	664	F		4040	8015D: Gasol Units: mg/K	-		
Client ID: Prep Date: Analyte	PBS 1/17/2023	Batch	ID: 72	664 18/2023	F	RunNo: <b>9</b> 4	4040		-	RPDLimit	Qual
Client ID: Prep Date: Analyte	PBS	Batch Analysis D	D: 720	664 18/2023	F	RunNo: <b>9</b> 4 SeqNo: <b>3</b> 3	4040 394827	Units: <b>mg/K</b>	g		Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	PBS 1/17/2023 ge Organics (GRO)	Batch Analysis D Result ND 910	DID: <b>72</b> 0 ate: <b>1/</b> PQL 5.0	564 18/2023 SPK value 1000	F SPK Ref Val	RunNo: 94 SeqNo: 33 %REC 91.0	4040 394827 LowLimit 37.7	Units: <b>mg/K</b> g HighLimit 212	g %RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang	PBS 1/17/2023 ge Organics (GRO)	Batch Analysis D Result ND 910 SampT	D: 720 ate: 1/	564 18/2023 SPK value 1000 S	F SPK Ref Val Tes	RunNo: 94 SeqNo: 33 %REC 91.0	4040 394827 LowLimit 37.7 PA Method	Units: <b>mg/K</b> HighLimit	g %RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID:	PBS 1/17/2023 ge Organics (GRO) Ics-72670	Batch Analysis D Result ND 910 SampT	ype: LC	564 18/2023 SPK value 1000 S 570	F SPK Ref Val Tes F	RunNo: 94 SeqNo: 3: %REC 91.0 tCode: EF	4040 394827 LowLimit 37.7 PA Method 4120	Units: <b>mg/K</b> g HighLimit 212	g %RPD ine Range	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID:	PBS 1/17/2023 ge Organics (GRO) Ics-72670 LCSS	Batch Analysis D Result ND 910 SampT Batch	ype: LC	564 18/2023 SPK value 1000 S 570 22/2023	F SPK Ref Val Tes F	RunNo: 94 SeqNo: 33 %REC 91.0 ttCode: EF RunNo: 94 SeqNo: 33	4040 394827 LowLimit 37.7 PA Method 4120	Units: mg/Kg HighLimit 212 8015D: Gasol Units: mg/Kg	g %RPD ine Range	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte	PBS 1/17/2023 ge Organics (GRO) Ics-72670 LCSS	Batch Analysis D Result ND 910 SampT Batch Analysis D	ype: LC ate: 1/ PQL 5.0 ype: LC ID: 720 ate: 1/	564 18/2023 SPK value 1000 S 570 22/2023	F SPK Ref Val Tes F	RunNo: 94 SeqNo: 33 %REC 91.0 tCode: EF RunNo: 94 SeqNo: 33	4040 394827 LowLimit 37.7 PA Method 4120 398467	Units: mg/Kg HighLimit 212 8015D: Gasol	g %RPD ine Range g	RPDLimit	
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte	PBS 1/17/2023 ge Organics (GRO) Ics-72670 LCSS 1/17/2023	Batch Analysis D Result ND 910 SampT Batch Analysis D Result	ype: LC ate: 1/ 5.0 ype: LC ate: 1/ PQL	564 18/2023 SPK value 1000 S 570 22/2023 SPK value	F SPK Ref Val Tes SPK Ref Val	RunNo: 94 SeqNo: 3 %REC 91.0 tCode: EF RunNo: 94 SeqNo: 3 %REC	4040 394827 LowLimit 37.7 PA Method 4120 398467 LowLimit	Units: mg/Kg HighLimit 212 8015D: Gasol Units: mg/Kg HighLimit	g %RPD ine Range g	RPDLimit	
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	PBS 1/17/2023 ge Organics (GRO) Ics-72670 LCSS 1/17/2023	Batch Analysis D Result ND 910 SampT Batch Analysis D Result 20 2000	ype: LC ate: 1/ 5.0 ype: LC ate: 1/ PQL	564 18/2023 SPK value 1000 S 570 22/2023 SPK value 25.00 1000	F SPK Ref Val Tes SPK Ref Val 0	RunNo: 94 SeqNo: 3 %REC 91.0 tCode: EF RunNo: 94 SeqNo: 3 %REC 81.5 199	4040 394827 LowLimit 37.7 PA Method 4120 398467 LowLimit 72.3 37.7	Units: mg/Kg HighLimit 212 8015D: Gasol Units: mg/Kg HighLimit 137	g %RPD ine Range g %RPD	RPDLimit	
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	PBS 1/17/2023 ge Organics (GRO) Ics-72670 LCSS 1/17/2023 ge Organics (GRO)	Batch Analysis D Result ND 910 SampT Batch Analysis D Result 20 2000 SampT	ype: LC PQL 5.0 ype: LC 1D: 72( 1D: 72( 1D: 72( 20) PQL 5.0	564 18/2023 SPK value 1000 S 570 22/2023 SPK value 25.00 1000 BLK	F SPK Ref Val Tes SPK Ref Val 0 Tes	RunNo: 94 SeqNo: 3 %REC 91.0 tCode: EF RunNo: 94 SeqNo: 3 %REC 81.5 199	4040 394827 LowLimit 37.7 PA Method 4120 398467 LowLimit 72.3 37.7 PA Method	Units: mg/Kg HighLimit 212 8015D: Gasol Units: mg/Kg HighLimit 137 212	g %RPD ine Range g %RPD	RPDLimit	
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID:	PBS 1/17/2023 pe Organics (GRO) Ics-72670 LCSS 1/17/2023 pe Organics (GRO) mb-72670	Batch Analysis D Result ND 910 SampT Batch Analysis D Result 20 2000 SampT	ype: LC PQL 5.0 ype: LC 1D: 72( 1D: 72( 1D: 72( 5.0 ype: ME 1D: 72(	564 18/2023 SPK value 1000 S 570 22/2023 SPK value 25.00 1000 3LK 570	F SPK Ref Val Tes SPK Ref Val 0 Tes F	RunNo: 94 SeqNo: 33 %REC 91.0 tCode: EF RunNo: 94 SeqNo: 33 %REC 81.5 199 tCode: EF	4040 394827 LowLimit 37.7 PA Method 4120 398467 LowLimit 72.3 37.7 PA Method 4120	Units: mg/Kg HighLimit 212 8015D: Gasol Units: mg/Kg HighLimit 137 212	g %RPD ine Range %RPD ine Range	RPDLimit	
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID:	PBS 1/17/2023 ge Organics (GRO) Ics-72670 LCSS 1/17/2023 ge Organics (GRO) mb-72670 PBS	Batch Analysis D Result ND 910 SampT Batch Analysis D Result 20 2000 SampT Batch	ype: LC PQL 5.0 ype: LC 1D: 72( 1D: 72( 1D: 72( 5.0 ype: ME 1D: 72(	564 18/2023 SPK value 1000 S 570 22/2023 SPK value 25.00 1000 3LK 570 22/2023	F SPK Ref Val Tes SPK Ref Val 0 Tes F	RunNo: 94 SeqNo: 3 %REC 91.0 tCode: EF RunNo: 94 SeqNo: 3 %REC 81.5 199 tCode: EF RunNo: 94	4040 394827 LowLimit 37.7 PA Method 4120 398467 LowLimit 72.3 37.7 PA Method 4120	Units: mg/Kg HighLimit 212 8015D: Gasol Units: mg/Kg HighLimit 137 212 8015D: Gasol	g %RPD ine Range %RPD ine Range	RPDLimit	
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte	PBS 1/17/2023 ge Organics (GRO) Ics-72670 LCSS 1/17/2023 ge Organics (GRO) mb-72670 PBS	Batch Analysis D Result ND 910 SampT Batch Analysis D 2000 SampT Batch Analysis D	ype: LC ate: 1/ PQL 5.0 ype: LC ate: 1/ PQL 5.0 ype: ME ype: ME ate: 1/ ype: 1/	564 18/2023 SPK value 1000 S 570 22/2023 SPK value 25.00 1000 3LK 570 22/2023	F SPK Ref Val Tes SPK Ref Val 0 Tes F S	RunNo: 94 SeqNo: 33 %REC 91.0 tCode: EF RunNo: 94 SeqNo: 33 %REC 81.5 199 tCode: EF RunNo: 94 SeqNo: 33	4040 394827 LowLimit 37.7 PA Method 4120 398467 LowLimit 72.3 37.7 PA Method 4120 398468	Units: mg/Kg HighLimit 212 8015D: Gasol Units: mg/Kg HighLimit 137 212 8015D: Gasol Units: mg/Kg	g %RPD ine Range %RPD ine Range	RPDLimit	Qual

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301576

25-Jan-23

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Marathon Taylor De	-		6							
Sample ID:	2301576-014ams	SampT	ype: MS	;	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	CONF15-0.5'	Batch	n ID: 726	670	F	RunNo: <b>9</b> 4	1120				
Prep Date:	1/17/2023	Analysis D	ate: 1/2	22/2023	S	SeqNo: 33	398470	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	22	4.9	24.70	0	87.7	70	130			
Surr: BFB		2000		988.1		199	37.7	212			
Sample ID:	2301576-014amsd	SampT	ype: MS	D	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	CONF15-0.5'	Batch	n ID: 726	670	F	RunNo: <b>9</b> 4	120				
Prep Date:	1/17/2023	Analysis D	ate: 1/2	22/2023	S	SeqNo: 33	398471	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	20	4.9	24.65	0	81.5	70	130	7.57	20	
Surr: BFB		2100		986.2		211	37.7	212	0	0	
Sample ID:	lcs-72706	SampT	ype: LC	s	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	LCSS	Batch	n ID: 727	706	F	RunNo: <b>9</b> 4	<b>120</b>				
Prep Date:	1/19/2023	Analysis D	ate: 1/2	23/2023	S	SeqNo: 33	398491	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	19	5.0	25.00	0	77.8	72.3	137			
Surr: BFB		1900		1000		194	37.7	212			
Sample ID:	mb-72706	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	PBS	Batch	n ID: 727	706	F	RunNo: <b>9</b> 4	<b>120</b>				
Prep Date:	1/19/2023	Analysis D	ate: 1/2	23/2023	S	SeqNo: 33	398492	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	ND	5.0								
Surr: BFB		860		1000		85.6	37.7	212			
Sample ID:	2301576-034ams	SampT	ype: MS	;	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	SS14-0'	Batch	n ID: <b>727</b>	706	F	RunNo: <b>9</b> 4	1120				
Prep Date:	1/19/2023	Analysis D	ate: 1/2	23/2023	S	SeqNo: 33	398497	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	35	23	23.34	11.23	103	70	130			
Surr: BFB		5800		4669		125	37.7	212			
Sample ID:	2301576-034amsd	SampT	ype: MS	D	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	SS14-0'	Batch	n ID: 727	706	F	RunNo: <b>9</b> 4	120				
Prep Date:	1/19/2023	Analysis D	ate: 1/2	23/2023	S	SeqNo: 33	398498	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

2301576

25-Jan-23

Client: Project:		Oil Compa ep 12 Feder	•	6							
Sample ID:	2301576-034amsd	SampTy	De: MS	SD	Tes	tCode: EF	PA Method	8015D: Gasoli	ne Range		
Client ID:	SS14-0'	Batch I	D: 72	706	F	RunNo: <b>9</b> 4	<b>120</b>				
Prep Date:	1/19/2023	Analysis Dat	te: 1/	23/2023	S	SeqNo: 33	398498	Units: mg/Kg	J		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	31	23	23.28	11.23	83.8	70	130	14.1	20	
Surr: BFB		5600		4655		121	37.7	212	0	0	
Sample ID:	lcs-72758	SampTy	be: LC	s	Tes	tCode: EF	PA Method	8015D: Gasoli	ne Range		
Client ID:	LCSS	Batch I	D: 72	758	F	RunNo: <b>9</b> 4	1152				
Prep Date:											
.,	1/23/2023	Analysis Dat	te: 1/	24/2023	S	SeqNo: 34	100159	Units: %Rec			
Analyte	1/23/2023		te: <b>1/</b> : PQL		SPK Ref Val	eqNo: <b>3</b> 4% %REC	<b>100159</b> LowLimit	Units: <b>%Rec</b> HighLimit	%RPD	RPDLimit	Qual
	1/23/2023								%RPD	RPDLimit	Qual
Analyte Surr: BFB	1/23/2023 mb-72758	Result	PQL	SPK value 1000	SPK Ref Val	%REC 109	LowLimit 37.7	HighLimit			Qual
Analyte Surr: BFB		Result 1100	PQL De: ME	SPK value 1000 BLK	SPK Ref Val	%REC 109	LowLimit 37.7 PA Method	HighLimit 212			Qual
Analyte Surr: BFB Sample ID:	mb-72758	Result 1100 SampTyp	PQL De: <b>ME</b> D: <b>72</b>	SPK value 1000 BLK 758	SPK Ref Val Tes	%REC 109 tCode: <b>EF</b>	LowLimit 37.7 PA Method	HighLimit 212			Qual
Analyte Surr: BFB Sample ID: Client ID:	mb-72758 PBS	Result 1100 SampTyr Batch I Analysis Dat	PQL De: <b>ME</b> D: <b>72</b>	SPK value 1000 3LK 758 24/2023	SPK Ref Val Tes	%REC 109 tCode: EF RunNo: 94 SeqNo: 34	LowLimit 37.7 PA Method	HighLimit 212 8015D: Gasoli			Qual

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301576

25-Jan-23

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:	Marath	on Oil Com	pany								
Project:	Taylor	Deep 12 Fed	leral 00	6							
Sample ID:	lcs-72649	Samp	Гуре: <b>LC</b> :	s	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID:	LCSS		h ID: 726			RunNo: <b>9</b> 4					
Prep Date:	1/17/2023	Analysis [	Date: <b>1/</b> 1	18/2023		SeqNo: 33	395112	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	mofluorobenzene	0.95		1.000		94.5	70	130			
Sample ID:	mb-72649	Samp	Гуре: МВ	BLK	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID:	PBS	Batcl	h ID: <b>726</b>	649	F	RunNo: <b>9</b> 4	4040				
Prep Date:	1/17/2023	Analysis [	Date: <b>1/</b> 1	18/2023	5	SeqNo: 33	395113	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	mofluorobenzene	0.93		1.000		93.3	70	130			
Sample ID:	lcs-72664	Samp	Гуре: LC	s	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID:	LCSS	Batcl	h ID: 726	64	F	RunNo: <b>9</b> 4	4040				
Prep Date:	1/17/2023	Analysis [	Date: 1/1	18/2023	S	SeqNo: 33	395136	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.88	0.025	1.000	0	88.4	80	120			
Toluene		0.89	0.050	1.000	0	89.3	80	120			
Ethylbenzene		0.89	0.050	1.000	0	89.1	80	120			
Xylenes, Total	I	2.7	0.10	3.000	0	88.8	80	120			
Surr: 4-Bror	mofluorobenzene	0.95		1.000		94.7	70	130			
Sample ID:	mb-72664	Samp	Гуре: МВ	BLK	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID:	PBS	Batc	h ID: 726	64	F	RunNo: <b>9</b> 4	4040				
Prep Date:	1/17/2023	Analysis [	Date: 1/*	18/2023	Ś	SeqNo: 33	395137	Units: mg/K	g		
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	I	ND	0.10								
Surr: 4-Bror	mofluorobenzene	0.92		1.000		91.8	70	130			
Sample ID:	lcs-72670	SampT	Гуре: <b>LC</b>	s	Tes	stCode: EF	PA Method	8021B: Volati	les		
Client ID:	LCSS	Batc	h ID: 726	670	F	RunNo: <b>9</b> 4	4091				
Prep Date:	1/17/2023	Analysis [	Date: 1/1	19/2023	5	SeqNo: 33	397115	Units: mg/K	g		
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.91	0.025	1.000	0	91.0	80	120			
Toluene		0.92	0.050	1.000	0	92.1	80	120			
Ethylbenzene		0.91	0.050	1.000	0	91.2	80	120			
Xylenes, Total	I	2.7	0.10	3.000	0	91.0	80	120			

#### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

WO#: 2301576 25-Jan-23

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	n Oil Com Deep 12 Feo		6							
Sample ID: Ics-72670	Samp	Туре: <b>LC</b>	s	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batc	h ID: 726	670	F	RunNo: <b>9</b> 4	4091				
Prep Date: 1/17/2023	Analysis I	Date: 1/	19/2023	S	SeqNo: 3	397115	Units: <b>mg/K</b>	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		93.7	70	130			
Sample ID: mb-72670	Samp	Туре: МЕ	BLK	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: PBS	Batc	h ID: 726	670	F	RunNo: <b>9</b> 4	4091				
Prep Date: 1/17/2023	Analysis I	Date: 1/	19/2023	S	SeqNo: 3	397116	Units: <b>mg/K</b>	g		
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	4 000		00.0	70	400			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.0	70	130			
Sample ID: 2301576-015ams	Samp	Туре: <b>МS</b>	5	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: CONF16-0.5'	Batc	h ID: 726	670	F	RunNo: <b>9</b> 4	4091				
Prep Date: 1/17/2023	Analysis I	Date: 1/	19/2023	5	SeqNo: 3	397119	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	0.9940	0	92.4	68.8	120			
Toluene	0.93	0.050	0.9940	0	94.0	73.6	124			
Ethylbenzene	0.93	0.050	0.9940	0	93.5	72.7	129			
Xylenes, Total	2.8	0.099	2.982	0	93.0	75.7	126			
Surr: 4-Bromofluorobenzene	0.92		0.9940		92.4	70	130			
Sample ID: 2301576-015amso	<b>l</b> Samp	Туре: <b>МS</b>	D	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: CONF16-0.5'	Batc	h ID: 726	670	F	RunNo: <b>9</b> 4	4091				
Prep Date: 1/17/2023	Analysis I	Date: 1/	19/2023	Ş	SeqNo: 3	397120	Units: <b>mg/K</b>	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	0.9911	0	96.0	68.8	120	3.52	20	
Toluene	0.97	0.050	0.9911	0	97.9	73.6	124	3.84	20	
Ethylbenzene	0.97	0.050	0.9911	0	97.5	72.7	129	3.86	20	
Xylenes, Total	2.9	0.099	2.973	0	96.8	75.7	126	3.68	20	
Surr: 4-Bromofluorobenzene	0.91		0.9911		92.1	70	130	0	0	
Sample ID: 2301576-035ams	Samp	Type: MS	;	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: SS14-1'	Batc	h ID: 727	706	F	RunNo: <b>9</b> 4	4120				
Prep Date: 1/19/2023	Analysis I	Date: 1/2	23/2023	5	SeqNo: 3	398527	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301576

25-Jan-23

# **QC SUMMARY REPORT** Hall Environmental Analysis Laboratory, Inc.

Client:MarathonProject:Taylor De			6							
Sample ID: 2301576-035ams	Samp	Туре: <b>МS</b>	6	Tes	tCode: EF	A Method	8021B: Volat	iles		
Client ID: SS14-1'	Batc	h ID: 727	706	F	RunNo: <b>9</b> 4	120				
Prep Date: 1/19/2023	Analysis I	Date: 1/2	23/2023	Ş	SeqNo: 33	98527	Units: <b>mg/k</b>	٤g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9804	0	85.9	68.8	120			
Toluene	0.86	0.049	0.9804	0	87.7	73.6	124			
Ethylbenzene	0.84	0.049	0.9804	0	86.1	72.7	129			
Xylenes, Total	2.5	0.098	2.941	0	84.9	75.7	126			
Surr: 4-Bromofluorobenzene	0.88		0.9804		89.3	70	130			
Sample ID: 2301576-035amsd	Samp	Type: MS	SD	Tes	tCode: EF	A Method	8021B: Volat	iles		
Client ID: SS14-1'	Batc	h ID: 727	706	F	RunNo: <b>9</b> 4	120				
Prep Date: 1/19/2023	Analysis I	Date: 1/2	23/2023	S	SeqNo: 33	98528	Units: <b>mg/k</b>	٤g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.024	0.9747	0	85.2	68.8	120	1.40	20	
Toluene	0.85	0.049	0.9747	0	87.0	73.6	124	1.39	20	
Ethylbenzene	0.83	0.049	0.9747	0	85.6	72.7	129	1.15	20	
Xylenes, Total	2.5	0.097	2.924	0	85.1	75.7	126	0.411	20	
Surr: 4-Bromofluorobenzene	0.87		0.9747		88.8	70	130	0	0	
Sample ID: Ics-72706	Samp	Туре: <b>LC</b>	s	Tes	tCode: EF	A Method	8021B: Volat	iles		
Client ID: LCSS	Batc	h ID: 727	706	F	RunNo: <b>9</b> 4	120				
Prep Date: 1/19/2023	Analysis I	Date: 1/2	23/2023	Ş	SeqNo: 33	99479	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.5	80	120			
Toluene	0.91	0.050	1.000	0	90.8	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.6	80	120			
Xylenes, Total	2.7	0.10	3.000	0	88.8	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		88.9	70	130			
Sample ID: mb-72706	Samp	Туре: <b>МЕ</b>	BLK	Tes	tCode: EF	A Method	8021B: Volat	iles		
Client ID: PBS	Batc	h ID: 727	706	F	RunNo: <b>9</b> 4	120				
Prep Date: 1/19/2023	Analysis I	Date: 1/2	23/2023	Ş	SeqNo: 33	99480	Units: mg/k	٢g		
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	0.86		1.000							

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank В
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

2301576

25-Jan-23

	Marathon Oil Compa Faylor Deep 12 Feder							
Sample ID: Ics-7275	3 SampTy	pe: LCS	TestCode:	EPA Method	8021B: Volati	es		
Client ID: LCSS	Batch I	ID: <b>72758</b>	RunNo:	94152				
Prep Date: 1/23/20	23 Analysis Da	te: 1/24/2023	SeqNo:	3400370	Units: <b>%Rec</b>			
Analyte	Result	PQL SPK value	SPK Ref Val %REC	CowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenz	ene 0.97	1.000	97.4	70	130			
Sample ID: mb-7275	8 SampTy	pe: MBLK	TestCode:	EPA Method	8021B: Volati	es		
Client ID: PBS	Batch I	ID: <b>72758</b>	RunNo:	94152				
Prep Date: 1/23/20	23 Analysis Da	te: 1/24/2023	SeqNo:	3400371	Units: %Rec			
Analyte	Result	PQL SPK value	SPK Ref Val %REC	CowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenz	ene 0.94	1.000	93.7	70	130			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301576

25-Jan-23

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Alb TEL: 505-345-3975 Website: www.hc	4901 uquerque 5 FAX: 5	Hawkins NE e, NM 87109 05-345-4107	San	nple Log-In Check List
Client Name: Marathon Oil Company	Work Order Number	: 23015	576		RcptNo: 1
Received By: Juan Rojas	1/17/2023 7:45:00 AM		5	lean a g	
Completed By: Sean Livingston	1/17/2023 8:07:20 AM			Sal	not
Reviewed By: KPG 1.17-2 KPG 1.17-23 Chain of Custody	3~~/17/23				<i>0</i>
				No 🗌	
1. Is Chain of Custody complete?		Yes		NO	Not Present
2. How was the sample delivered?		<u>Courie</u>	<u>er</u>		
Log In					
3. Was an attempt made to cool the sample	s?	Yes		No 🗌	
4. Were all samples received at a temperatu	re of >0° C to 6.0°C	Yes		No 🗍	
5. Sample(s) in proper container(s)?		Yes		No 🗌	
6. Sufficient sample volume for indicated tes	t(s)?	Yes		No 🗌	
7. Are samples (except VOA and ONG) prop	erly preserved?	Yes		No 🗌	
8. Was preservative added to bottles?		Yes [		No 🗹	NA 🗌
9. Received at least 1 vial with headspace <	I/4" for AQ VOA?	Yes [		No 🗌	NA 🗹
10. Were any sample containers received bro	ken?	Yes [		No 🗹	# of preserved
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes	2	No 🗆	bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain	of Custody?	Yes		No 🗌	Adjusted?
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 🗋	Checked by: KPU 1723
Special Handling (if applicable)					
15. Was client notified of all discrepancies with	th this order?	Yes		No 🗌	
Person Notified:	Date:				
By Whom:	Via:	] eMai	Phone	e 🗌 Fax	In Person
Regarding					
Client Instructions:	· _ · · · · · · · · · · · · · · · · · ·				
16. Additional remarks:					
17. <u>Cooler Information</u>					
Cooler No         Temp °C         Condition           1         2.1         Good	Seal Intact Seal No S lot Present Morty	Seal Dat	e Sigi	ned By	
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Client:		Marat	Marathon Oil Company	🏚 Standard	X Rush	5 Daw				R	ANALYSIS	XS	IS	4	BOR	LABORATORY
				Project Name:		n				ş	www.hallenvironmental.com	llenvii	onme	ental.c	Ш	
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				Project #:			-	Г	Tel. 50	5-345	505-345-3975	ιĽ.	Fax 50	5-345	505-345-4107	
Phone #:			575-988-8753		CL.22.02905	05						Analysis		Request	ų.	
email or Fax#:	¢#:	msa	msanjari@marathonoil.com	Project Manager	ger:		(1)			-		*OS		(tue		
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🗆 EDD (Type)	pe)			# of Coolers:	1	Morty						ON				
				Cooler Temp(including CF):	~	1.2-1.0+0.										
	2	Motriv	Sample Name	Container Tvne and #	Preservative Tvpe	HEAL No.				N) 803	a sha AADS	$ \rightarrow $	<u></u>	2) 0728  2 leto7		
2002			CONF01 - 1.5			t n lor s		×	_			4-	_			
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1/12/2023	11:38 Soil	Soil	CONF05 - 1.5'	1 Jar	lce		NOS ×	×				×				
1/12/2023	11:39 Soil	Soil	CONF06 - 1.5	1 Jar	lce		x N	_×				×				
1/12/2023	11:45 Soil	Soil	CONF07 - 1.5'	1 Jar	lce	L	× tron	_ ×				×		_		
1/12/2023	11:50 Soil	Soil	CONF09 - 1.5'	1 Jar	lce	J	x YOO	_×				×				
1/12/2023	11:55 Soil	Soil	CONF10 - 1.5'	1 Jar	lce		х <u>рос</u>	_×			_	×		-		
1/12/2023	13:25 Soil	Soil	CONF11Wall5'	1 Jar	lce	Ċ.	010 ×	_×				×	$-\dagger$	_		
1/12/2023	13:27 Soil	Soil	CONF12Wall5'	1 Jar	lce	0	x 110	×				×				
1/12/2023	13:33 Soil	Soil	CONF13Wall5'	1 Jar	lce			_×				×				
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Received by OCD: 2// Client:	Received by OCD: 2/10/2023 145:530 Record Client: Marathon Oil Company	Turn-Around Time:	HALL ENVIRONMENTAL
Mailing Address:	On File	Taylor Deep 12 Federal #006	4901 Hawkins NE - Albuquerque, NM 87109
		Project #:	Tel. 505-345-3975 Fax 505-345-4107
Phone #:	575-988-8753	CL.22.02905	sis Requ
email or Fax#:	<u>msanjari@marathonoil.com</u>	Project Manager:	*OS
QA/QO Package:		Ashley Giovengo	s (802 PCB's PCB's PO4, 5 PO4,
		Complete Cole Burton	0 <sup>2;</sup> 102; 102;
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			Project Name:		)		Ŵ	www.hallenvironmental.com	nvironm	nental.	com	
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			Project #:			Tel.	505-345-3975	3975	Fax 5	505-34	Fax 505-345-4107	
Phone #;		575-988-8753		CL.22.02905	05			An	Analysis Request	seque	st	
email or Fax#:	<u>ms</u>	msanjari@marathonoil.com	Project Manager	ger:		(0)			too	(100	(1112)	
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1/13/2022	9:54 Soil	CONF195'	1 Jar	120	2(%	×		_×	_			
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L	10:03 Soil	CONF08 - 2'	1 Jar	, ce	520	×		×	_			
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Client:         Marathon Oil Company         É Standard         Rush         É Qual           Mailing Address:         On File         Taylor Deep 12 Federal #006         4901 Hawki           Mailing Address:         On File         Taylor Deep 12 Federal #006         4901 Hawki           Mailing Address:         On File         Taylor Deep 12 Federal #006         4901 Hawki           Project Kim         Standard         Ashley Glowengo         4901 Hawki           OACC Package:         CL22.02905         CL22.02905         700           Ashley Glowengo         Ashley Glowengo         Ashley Glowengo         201 Hawki           OACC Package:         Dotter         Ashley Glowengo         200           Ashley Clowengo         Ooner         Ashley Glowengo         200           Ashley Clowengo         Oner         Ashley Glowengo         200           Ashley Clowengo         Oner         Bamper         Ashley Glowengo           Ashley Clowengo         Orber         Ashley Glowengo         200           Ashley Clowengo         Mainartithonolicom         Bamper         Ashley Glowengo           Ashley Clowengo         Other         Ashley Clowengo         202           Ashley Clowengo         Ashley Clowengo         202         2	
Project Name:         Froject Name:         Ashley Giovengo         4901 Hawk           575-988-8763         Froject Name:         Froject Name:         Froject Name:         Project Name:           Ashley Giovengo         Froject Namager:         CL.22.02905         Froject Name:         Project Namager:           Image:         Image:         Ashley Giovengo         Recent Namager:         Ashley Giovengo         Ashley Giovengo           Image:         Image:         Ashley Giovengo         Sampler:         CO.22.02905         CBS           Image:         Image:         Ashley Giovengo         Sampler:         C.22.02905         CBS           Image:         Image:         Ashley Giovengo         Sampler:         CI.22.02905         CBS           Image:         Image:         Image:         Art No.         EBB (Method 604.1)         Image:           Image:         SS010         SS010         Image:         Image	Rush 5 Day
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Received ANOC	Pi-2/04263	Received MOCD: 2/10/2023 1:45:59 M Record	Turn-Around	Time:								Pc	Page 143 of 154
Client:	Man	Marathon Oil Company	Standard	K Rush	5 Day			ANA	HALL E	NV	IRC	BOR	HALL ENVIRONMENTAL ANALYSTS LABORATORY
			Project Name	¢ 			E	MM	www.hallenvironmental.com	vironn	hental	moo	
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Date	Time Matrix	sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX/	08:H9T 9 1808	M) 803 A sHA9	кску ( 1) н	N) 0978	S) 0728 Total C		
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1/13/2022	11:25 Soil	SS16 - 0'	1 Jar	lce	0.3X	×			×				
1/13/2022	11:29 Soil	SS16 - 1'	1 Jar	lce	0.39	××			×				
1/13/2022	15:01 Soil	SS17B - 0'	1 Jar	lce	040 2415	××			×				
1/13/2022	13:22 Soil	SS18 - 0'	1 Jar	lce	041	×			×				
1/13/2022	14:07 Soil	SS19A - 0'	1 Jar	lce	042	××			×				
1/13/2022	13:28 Soil	SS20 - 0'	1 Jar	lce	043	×××			×				
1/13/2022	14:20 Soil	SS21 - 0'	1 Jar	lce	244	××			×				
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	cessary, samples s	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.	contracted to other a	ccredited laboratories	. This serves as notice of th	is possibil	tv. Any sul	-contracte	data will	be clearly	' notated	on the analytic	cal report.

Lab ID:

**Analytical Report** Lab Order 2302002

# Hall Environmental Analysis Laboratory, Inc.

Date Reported:

**CLIENT:** Marathon Oil Company **Project:** Taylor Deep Federal 12 006

2302002-001

Client Sample ID: SS21-2' Collection Date: 1/31/2023 10:00:00 AM

Matrix: MEOH (SOIL)

Received Date: 2/1/2023 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/1/2023 5:00:14 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/1/2023 5:00:14 PM
Surr: DNOP	112	69-147	%Rec	1	2/1/2023 5:00:14 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	2/1/2023 12:24:00 PM
Surr: BFB	102	37.7-212	%Rec	1	2/1/2023 12:24:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	2/1/2023 12:24:00 PM
Toluene	ND	0.050	mg/Kg	1	2/1/2023 12:24:00 PM
Ethylbenzene	ND	0.050	mg/Kg	1	2/1/2023 12:24:00 PM
Xylenes, Total	ND	0.10	mg/Kg	1	2/1/2023 12:24:00 PM
Surr: 4-Bromofluorobenzene	103	70-130	%Rec	1	2/1/2023 12:24:00 PM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	ND	60	mg/Kg	20	2/1/2023 8:26:32 PM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 1 of 0

Lab ID:

**Analytical Report** 

# Hall Environmental Analysis Laboratory, Inc.

Lab Order 2302002 Date Reported:

CLIENT:	Marathon Oil Company
Project:	Taylor Deep Federal 12 006

2302002-003

Client Sample ID: SS17C-0' Collection Date: 1/31/2023 9:42:00 AM

Matrix: MEOH (SOIL)

Received Date: 2/1/2023 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	8.9	mg/Kg	1	2/1/2023 5:21:19 PM
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	2/1/2023 5:21:19 PM
Surr: DNOP	114	69-147	%Rec	1	2/1/2023 5:21:19 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	2/1/2023 1:04:00 PM
Surr: BFB	104	37.7-212	%Rec	1	2/1/2023 1:04:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	2/1/2023 1:04:00 PM
Toluene	ND	0.050	mg/Kg	1	2/1/2023 1:04:00 PM
Ethylbenzene	ND	0.050	mg/Kg	1	2/1/2023 1:04:00 PM
Xylenes, Total	ND	0.10	mg/Kg	1	2/1/2023 1:04:00 PM
Surr: 4-Bromofluorobenzene	103	70-130	%Rec	1	2/1/2023 1:04:00 PM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	ND	60	mg/Kg	20	2/1/2023 8:38:57 PM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

Above Quantitation Range/Estimated Value Е

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 2 of 0

Lab ID:

**Analytical Report** 

# Hall Environmental Analysis Laboratory, Inc.

Lab Order 2302329

Date Reported:

CLIENT:	Marathon Oil Company
Project:	Taylor Deep Federal 12 006

2302329-001

# Client Sample ID: SS18 B-0' Collection Date: 2/7/2023 10:11:00 AM

Matrix: MEOH (SOIL)

Received Date: 2/8/2023 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG	GANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	2/8/2023 11:48:23 AM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/8/2023 11:48:23 AM
Surr: DNOP	93.1	69-147	%Rec	1	2/8/2023 11:48:23 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	2/8/2023 2:12:00 PM
Surr: BFB	98.5	37.7-212	%Rec	1	2/8/2023 2:12:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.019	mg/Kg	1	2/8/2023 2:12:00 PM
Toluene	ND	0.037	mg/Kg	1	2/8/2023 2:12:00 PM
Ethylbenzene	ND	0.037	mg/Kg	1	2/8/2023 2:12:00 PM
Xylenes, Total	ND	0.075	mg/Kg	1	2/8/2023 2:12:00 PM
Surr: 4-Bromofluorobenzene	95.5	70-130	%Rec	1	2/8/2023 2:12:00 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	75	59	mg/Kg	20	2/9/2023 2:01:29 PM

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 1 of 0

# ATTACHMENT F

Liner Integrity Inspection Forms



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Carlsbad, NM New Town & Williston, ND Duluth, MN



Liner Integrity Inspection - Photos attached

Date: 1-11-23	
Facility: Taylor Deep 12 Federal #606 48-Hour Notification Given On: 1-6-23	
Responsible party has Visually inspected the liner	<b>②</b> / N
Liner Remains Intact	Y / 🕢
Liner had the ability to contain the leak in question	Y /🕲

Notes:

hole	under	stairs	91	NE	cor	her		
							corner	
hols	2061	- Nort	h of	Su	Corne	in .		
hole	158.	t North	Gf	SECO	srher			
						enter	tank	
	hole hole hole	hole Sft hole Joft hole Joft hole 158	hole Sft south hole Joft South hole Joft North hole 15ft North	hole Sft south of hole Joft South of hole Joft North of hole 158t North of	hole Sft south of Stairs hole Joft South of NW hole Joft North of SW hole 158t North of SF	hole Sft south of Stairs at hole Joft South of NW Corv hole Joft North of Sw Corne hole 15ft North of SF corner	hole 30ft South of NW Corner hole 20ft North of Sw Corner hole 15ft North of SEcorner	hole Sft south of Stairs at NE corner hole Joft South of NW Corner hole Joft North of Sw Corner

Company Representative (s)

Cole Burton Released to Imaging: 6/13/2023 9:17:49 AM



Carlsbad, NM New Town & Williston, ND Duluth, MN

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W/N

Y/N

Y/(N)

Liner Integrity Inspection - Photos attached

Date: 1-12-23			
Facility: Taylor D	ep 12 Federal	#006	
48-Hour Notification Given	On: 1-6-23		

Responsible party has Visually inspected the liner

Liner Remains Intact

Liner had the ability to contain the leak in question

Notes: Heafer Treater Containment

2	hole	s on	Eas	+ side	hext	40 5	fairs	3f+ -	from	wall	
1	hale	ph N	0113	Side	2 ft 1	From	wall	¢			
G.	ravel	remo	ved	from	North	find	East	Sides	and	5 (2ft	2) arras
LY	Fallak	nout in	14 + 111	on pat							
N	one	sf th	5 5	(2++2)	areas	had	any	eviden	( 0	F liner	fuilure
R	emori	al of	any .	furthe	r yra	vel	n oul	d (0)	npror	4158 +1	tuilure be
		integ									

Company Representative (s)

Cole Burton



# ATTACHMENT G

# 48-Hour Confirmation Sampling & Liner Inspection Notification Email

Energizing America wescominc.com | info@wescominc.com | 218-724-1322

From:	Cole Burton
To:	OCD. Enviro (ocd.enviro@emnrd.nm.gov)
Cc:	Ashley Giovengo; Joey Croce; Shar Harvester; Israel Estrella; "Sanjari, Melodie (MRO)"; Cody York
Subject:	48-Hour Confirmation Sample Notice & Liner Inspection Notice - Taylor Deep 12 Federal #006 (nAPP2231924026)
Date:	Monday, January 9, 2023 8:16:00 AM

Hello All,

We intend to take confirmation samples and perform a liner inspection at the Taylor Deep 12 Federal #006 (nAPP2231924026) starting on Wednesday (1/11/23) through Friday (1/13/23).

Please let us know if you plan to be onsite to oversee this sampling event.

Thanks,

Cole Burton, Environmental Field Technician O (218) 724-1322 | C (505) 205-0455 WescomInc.com | cole.burton@WescomInc.com "I am in charge of my own safety."

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

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Action 185045

CONDITIONS

Operator:	OGRID:						
MARATHON OIL PERMIAN LLC	372098						
990 Town & Country Blvd.	Action Number:						
Houston, TX 77024	185045						
	Action Type:						
	[C-141] Release Corrective Action (C-141)						
CONDITIONS							
Created By Condition		Condition					

-		Date
rhamlet	Marathon's deferral requests to complete final remediation during any future major construction/alteration or final plugging/abandonment, whichever occurs first. Wescom and Marathon do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The areas requested for deferral are the impacted soil beneath the tank containment and soil from beneath the heater treater containment shown on Figure 4 of the report. The areas have been delineated and documented in the report. At this time, OCD approves this request. The Deferral Request and C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue. This is a federal site and will require like approval from the BLM.	6/13/2023