Received by OCD: 7/24/2023 6:30:56 AM State of New Mexico
Page 6 Oil Conservation Division

| IIADIUU | <u> </u> |
|----------------|----------|
| Incident ID | |
| District RP | |
| Facility ID | |
| Application ID | |

Closure

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

| Closure Report Attachment Checklist: Each of the following items n | nust be included in the closure report. | | | | | | |
|---|---|--|--|--|--|--|--|
| A scaled site and sampling diagram as described in 19.15.29.11 NMAC | | | | | | | |
| Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection) | | | | | | | |
| ☐ Laboratory analyses of final sampling (Note: appropriate ODC Distr | rict office must be notified 2 days prior to final sampling) | | | | | | |
| □ Description of remediation activities | | | | | | | |
| | | | | | | | |
| and regulations all operators are required to report and/or file certain release may endanger public health or the environment. The acceptance of a C-1 should their operations have failed to adequately investigate and remediate human health or the environment. In addition, OCD acceptance of a C-14 compliance with any other federal, state, or local laws and/or regulations. restore, reclaim, and re-vegetate the impacted surface area to the condition accordance with 19.15.29.13 NMAC including notification to the OCD we Printed Name:Melodie Sanjari Title: | 41 report by the OCD does not relieve the operator of liability to contamination that pose a threat to groundwater, surface water, 41 report does not relieve the operator of responsibility for The responsible party acknowledges they must substantially not that existed prior to the release or their final land use in when reclamation and re-vegetation are complete. Environmental Professional | | | | | | |
| OCD Only | | | | | | | |
| Received by: | human health, or the environment nor does not relieve the responsible | | | | | | |
| Closure Approved by: | Date: 07/31/2023 | | | | | | |
| Printed Name:Jocelyn Harimon | Title: Environmental Specialist | | | | | | |
| | | | | | | | |



CLOSURE REQUEST REPORT ADDENDUM

Site Location:

Shugart West 19 Fed #8 & #9 Eddy County, New Mexico Incident Numbers nAB1527326452 & NAB1601157221

June 21, 2023 Ensolum Project No. 03A2040004

Prepared for:

Marathon Oil Permian, LLC 4111 South Tidwell Road Carlsbad, New Mexico 88220 Attention: Melodie Sanjari

Prepared by:

Ashley N. Giovengo Senior Engineer Daniel R. Moir, PG Senior Managing Geologist

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| 2.0 | SITE CHARACTERIZATION | |
| 3.0 | DELINEATION ACTIVITIES | |
| | CLOSURE REQUEST | |

REFERENCE MATERIALS

FIGURES

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Figure 2: Site & Sampling Locations

Figure 3: Delineation Soil Sample Locations

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Table 1: Delineation Soil Sample Analytical Results

APPENDICES

Appendix A: C-141 Forms

Appendix B: Lithologic Soil Sampling Logs

Appendix C: Photographic Log

Appendix D: Laboratory Analytical Reports & Chain-of-Custody Documentation



1.0 INTRODUCTION

Ensolum, LLC (Ensolum) has prepared this *Closure Request Report* Addendum (CRRA) on behalf of Marathon Oil Permian, LLC, hereafter referred to as Marathon, regarding the crude oil and produced water releases at the Shugart West 19 Fed #8 & #9 (Site), located in Unit B, Section 19, Township 18 South, Range 31 East, in Eddy County, New Mexico (**Figure 1**). Global Positioning System (GPS) coordinates for the Site are as follows: North 32.734617 and West -103.907571. Surface owner of the Site is Federal Land managed by the Bureau of Land Management (BLM).

On October 24, 2019, A *Closure Request* (CR), authored by Souder, Miller & Associates (SMA), was submitted to the New Mexico Oil Conservation Division (NMOCD) for the releases associated with Incident Numbers nAB1527326452 & nAB1601157221; however, the request was denied. The original CR was submitted prior to the release of NMOCD's *Procedures for Implementation of the Spill Rule*, dated September 6, 2019, and as a result, it was determined lateral and vertical delineation to the strictest closure criteria per NMOCD Table I Closure Criteria would be required. This CRRA addresses additional delineation sampling to the strictest Closure Criteria associated with the crude oil and produced water releases (nAB1527326452 & nAB1601157221). Based on laboratory analytical results, Marathon respectfully requests no further action (NFA) for Incident Numbers nAB1527326452 & nAB1601157221. The original CR and other supporting documents can be viewed on the NMOCD web portal.

1.1 Background

On September 29, 2015, a release was discovered at Site due to internal corrosion of a 2x4 swage on an oil circulating line, approximately 40 barrels (bbls) of produced water was released inside the earthen containment. A total of 35 bbls was recovered during the initial response activities. The incident was reported to NMOCD by the previous operator Merit Energy Company (Merit) and assigned Incident Number nAB1527326452.

On January 11, 2016, a leaking tank bottom resulted in the release of 10 bbls of produced water and 6 bbls of crude oil at the Shugart West 19 Federal #9 Site. A total of 2 bbls of produced water and 1 bbl of crude oil was recovered from the earthen containment. The release was reported to the NMOCD and assigned Incident Number nAB1601157221.

2.0 SITE CHARACTERIZATION

The Site was assessed for applicability of Table I, Closure Criteria for Soils Impacted by a Release, from Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) during the original CR. Results from the characterization desktop review were presented in the October 2019 CR and are presented on page 3 of Form C-141 (**Appendix A**), Site Assessment/Characterization. Potential Site receptors are identified on **Figure 1**.

Based on the desktop review of nearby receptors and depth to groundwater determination at the Site, the following NMOCD Table I Closure Criteria (Closure Criteria) was applied:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total Petroleum Hydrocarbon (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- Total Petroleum Hydrocarbon (TPH): 2500 mg/kg



Chloride: 20,000 mg/kg

3.0 DELINEATION ACTIVITIES

Beginning on May 17, 2023, Ensolum personnel arrived onsite to perform delineation soil sampling in the vicinity of sample locations CS3 and CS4 and SW4 through SW9, see **Figure 2**. Ensolum personnel collected 10 surface soil samples (SS01 through 10) to determine the lateral extent of the spill area's in accordance with the strictest Closure Criteria.

In order to determine the vertical extent of the releases, a pothole was advanced as the surface soil sample location SS09 via hand auger to a depth of 2 feet below ground surface (bgs).

Delineation soil samples were field screened for TPH using a PetroFLAG® analyzer system and for chloride utilizing the Mohr method titration. Field screening results and observations from the pothole were recorded on lithologic/soil sampling logs (**Appendix B**) and photographic documentation is included in **Appendix C**.

Delineation soil samples were properly packaged, preserved, and transported to Hall Environmental Analysis Laboratory, following proper chain-of-custody procedures and were analyzed for the following constituents of concern (COCs): TPH following United States Environmental Protection Agency (EPA) Method 8015D, BTEX following EPA Method 8021B, and chloride following EPA Method 300.0.

Laboratory analytical results indicated COC concentrations for all delineation samples associated with Incident Numbers nAB1527326452 & nAB1601157221 were in compliance with the strictest Closure Criteria per NMOCD Table I except for SS03B, which was recollected. Surface sample SS03B exceeded the strictest Closure Criteria; however, it is located in the area nearest the production tanks. Ensolum personnel returned to the Site on June 2, 2023 to recollect a lateral sample in the vicinity of SS03B. Sample SS03C was below the strictest Closure Criteria and void of elevated surface contamination associated with ongoing operations near the production tanks. Delineation soil sample locations are identified on **Figures 3**, laboratory analytical results are presented in **Table 1** and laboratory analytical reports are included in **Appendix D**.



4.0 CLOSURE REQUEST

On behalf of Marathon, Ensolum herby requests closure for the releases associated with Incident Numbers nAB1527326452 & nAB1601157221 based on the findings and conclusion listed below:

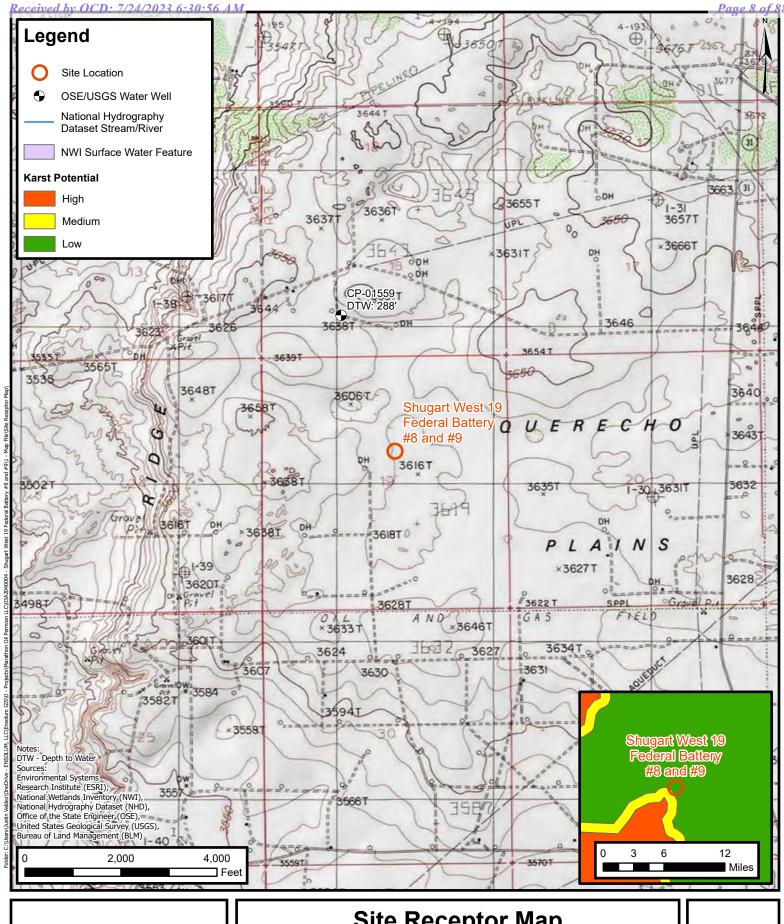
- Horizontal and vertical delineation sampling in the vicinity of soil sample locations CS3 and CS4 and SW4 through SW9 has been completed in accordance with the strictest Closure Criteria per NMOCD Table 1; and
- The lateral and vertical extents of the release have been adequately assessed as required in NMOCD's denial.

Remedial actions completed at the Site for Incident Numbers nAB1527326452 & nAB1601157221 have been protective of human health, the environment, and groundwater.





FIGURES



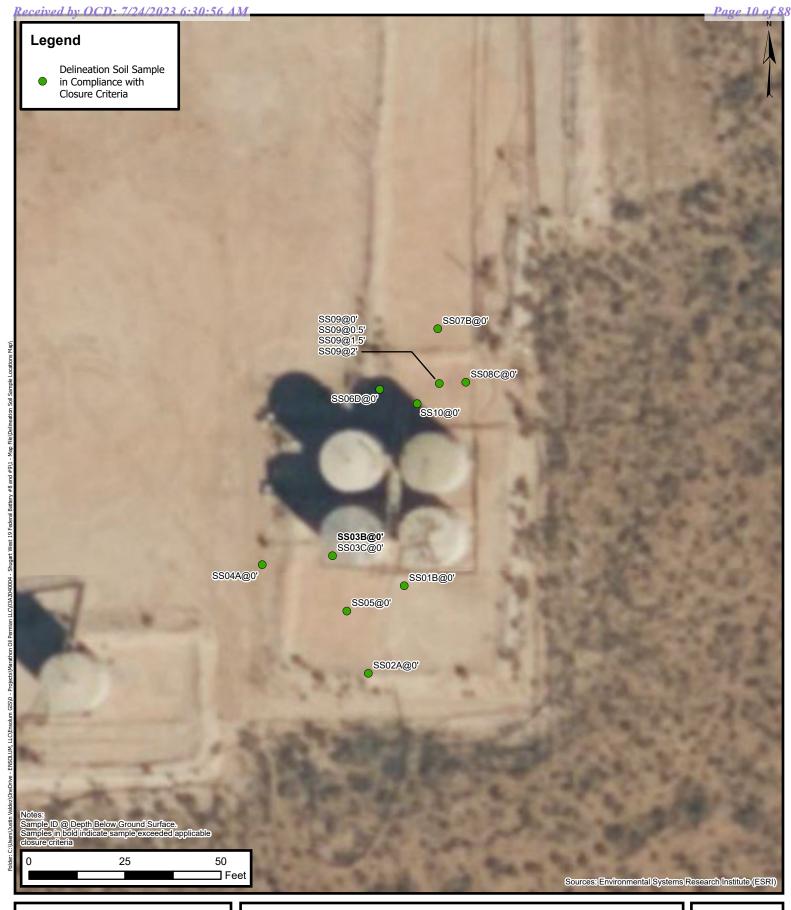


Site Receptor Map

Marathon Oil Permian LLC Shugart West 19 Fed Battery #8 and #9 Incident Number: NAB1527326452 / NAB1601157221 Unit B Sec 19 T18S R31E Eddy County, New Mexico

FIGURE

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Delineation Soil Sample Locations

Marathon Oil Permian LLC
Shugart West 19 Fed Battery #8 and #9
Incident Number: NAB1527326452NAB1601157221
Unit B Sec 19 T18S R31E
Eddy County, New Mexico

FIGURE 3

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TABLES



TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS Shugart West 19 Federal #8 and #9 Marathon Oil Permian LLC Eddy County, New Mexico

| Sample I.D. | Sample Date | Sample Depth (feet bgs) | Benzene (mg/kg) | Total BTEX (mg/kg) | TPH GRO (mg/kg) | TPH DRO (mg/kg) | TPH ORO (mg/kg) | GRO+DRO (mg/kg) | Total TPH (mg/kg) | Chlorid (mg/kg |
|--------------------------|----------------------|----------------------------|--------------------|-----------------------|--------------------|--------------------|--------------------|--------------------|----------------------|-------------------|
| NMOCD Table 1 Clo | osure Criteria (NMAC | 2 19.15.29) | 10 | 50 | NE | NE | NE | 1,000 | 2,500 | 20,000 |
| Delineation Soil Samples | | | | | | | | | | |
| SS01B | 05/17/2023 | 0 | <0.025 | <0.10 | <5.0 | <8.4 | <42 | <8.9 | <42 | <60 |
| SS02A | 05/17/2023 | 0 | <0.025 | <0.10 | <4.9 | <9.3 | <47 | <9.3 | <47 | <60 |
| SS03B | 05/17/2023 | 0 | <0.025 | <0.10 | <5.0 | 24 | <49 | 24 | 24 | 2,20 |
| SS03C | 06/02/2023 | 0 | <0.025 | <0.10 | <4.9 | <9.9 | <50 | <10 | <50 | <59 |
| SS04A | 05/17/2023 | 0 | <0.025 | <0.10 | <4.9 | <9.7 | <48 | <9.7 | <48 | 320 |
| SS05 | 05/17/2023 | 0 | <0.024 | <0.10 | <4.9 | 18 | 57 | 18 | 75 | <60 |
| SS06D | 05/17/2023 | 0 | <0.024 | <0.10 | <4.8 | <10 | <50 | <10 | <50 | <60 |
| SS07B | 05/17/2023 | 0 | <0.024 | <0.10 | <4.8 | 11 | <49 | 11 | 11 | 180 |
| SS08C | 05/17/2023 | 0 | <0.024 | <0.10 | <4.9 | 9.8 | <47 | 9.8 | 9.8 | <60 |
| SS09 | 05/17/2023 | 0 | <0.024 | <0.10 | <4.8 | 19 | <48 | 19 | 19 | 84 |
| SS09 | 05/17/2023 | 0.5 | <0.024 | <0.09 | <4.7 | 18 | <49 | 18 | 18 | 95 |
| SS09 | 05/17/2023 | 1 | <0.023 | <0.09 | <4.7 | 16 | <50 | 16 | 16 | <60 |
| SS09 | 05/17/2023 | 2 | <0.025 | <0.10 | <4.9 | 12 | <44 | 12 | <12 | <60 |
| SS10 | 05/17/2023 | 0 | <0.024 | <0.10 | <4.9 | <9.7 | <48 | <9.7 | <48 | <60 |

Notes:

bgs: below ground surface mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

"<": Laboratory analytical results less than reportable limit

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.

Ensolum 1 of 1



APPENDIX A

C-141 Forms

District 1 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210

1000 Rio Brazos Road, Aztec, NM 87410

District III

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141

State of New Mexico **Energy Minerals and Natural Resources**

SEP 29 2015

Revised August 8, 2011

2RP-3304

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Oil Conservation Division 1220 South St. Francis Dr.

Submit 1 Copy to appropriate District Office in **RECEIVED** ccordance with 19.15.29 NMAC.

| District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 1220 S. St. Francis Dr., Santa Fe, NM 87505 | | | | | _ | - | REC | EIAER | | | | |
|---|---------------|-------------------------------------|-------------|--------------------|---|--|-----------------------------------|------------|-----------------------|--------------|----------|----------------|
| | | | Rele | | | | orrective A | ction | | | | |
| NAB 15 | 52732 | 6452 | | | | OPERAT | | xl | ☐ Initia | al Report | П | Final Report |
| Name of Co | mpany Mo | erit Energy (| Co. | 4591 | | Contact Ch | | ~ (| | 240 p = -1 | | |
| | | Eunice, N. | и. 88231 | | | | No. 575-420-550 | | | | | |
| Facility Nat | me Shugari | 19#8 | | | | Facility Typ | e Oil & Gas Pro | oduction | battery | | | |
| Surface Ow | ner BLM | | | Mineral C | wner B | LM | | | API No | . 3001530 | 92300 |) |
| | | | | LOCA | ATION | OF RE | LEASE | | | | | |
| Unit Letter | sec. | Township | Range | Feet from the | • | South Line Feet from the E | | | East/West Line County | | | |
| 19#8 | 100 | 18-S | 31-E | 660. | FNL | | 2310 | FEL | | Eddy | | |
| \mathcal{B} | 19 | | <u></u> | | | | | | | | | |
| | | Latitude_ | 32D44'0 | 4.14"N | | Longitude | 103D54'26.82" | w | | | | • |
| | | | | NAT | | OF REL | | | | | | |
| Type of Rele | ase Produc | ced water | | NA | OKE | | Release 40 | | Volume I | Recovered 3 | 35 | |
| | | ection tank on | 19#8 tan | k battery, 2x4 swa | ige on | | lour of Occurrence | | | Hour of Dis | covery | y 8:01 a.m. |
| back of tank Was Immedi | | Siven? | | | | 9-29-2015 If YES, To | | | 9-29-201 | 5 | | <u>.</u> |
| , was milited | ate Proffee C | |] Yes { | □ No □ Not | | BLM and | OCD | | | | | |
| Required | | | | | | Mike Brate | cher - OCD & Jan | nes Amo: | s-BLM | | | |
| By Whom? | | | | | | Date and Hour 9-29-15 8:23 A.M BLM./ 8:08 a.m. A.M. OCD If YES, Volume Impacting the Watercourse. | | | | | | |
| Was a Water | course Reac | | Yes x | T No | | If YES, Vo | olume Impacting t | he Water | course. | | | |
| If a Watergoo | uraa waa Ira | pacted, Descr | | | | | | | | | | |
| II a waterco | uise was iii | pacieu, Desci | ibe rully. | | | | | | | | | |
| NO | | | | | | | | | | | | |
| NO | | | | | | | | | | | | |
| | | em and Reme | | | | | | | | | | |
| Internal corre | osion on 2x | 4 swage on ci | rculating l | ine on back of oil | tank, Re | emoved and r | eplaced all old or | bad fittir | igs on line | 3. | | |
| | | | | | | | | | | | | |
| Describe And | A CC - 4 - 3 | , 1 (?] | A _4: T_1 | * | | | | | | | | |
| | | and Cleanup and Cleanup and Cleanup | | |)1 A.M. | on 9-29-201: | 5. No leaking evid | lent on pr | evious da | y. All fluid | was co | ntained inside |
| firewall, vac | uumed and l | hauled off all | standing f | luid .Well follow | up with | further clean | up. | • | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| I hereby cert | ify that the | information g | iven abov | e is true and comp | olete to tl | he best of my | knowledge and und perform correct | inderstan | d that pur | suant to NM | IOCD : | rules and |
| public health | n operators | ronment. The | e acceptan | ce of a C-141 rep | ort by the | e NMOCD n | narked as "Final R | ceport" de | es not rel | ieve the ope | erator c | of liability |
| should their | operations h | ave failed to | adequately | y investigate and | remediat | e contaminat | ion that pose a thi | eat to gre | ound wate | r, surface w | ater, hi | uman health |
| | | iddition, NM(ws and/or regi | | ptance of a C-141 | report d | oes not reliev | ve the operator of | responsil | oility for c | compliance | with an | iy other |
| rederal, state | , or local la | ws and/or reg | mations. | | Τ | | OIL CON | SERV. | ATION | DIVISION | ON | |
| a | | | | | | | <u> </u> | <u> </u> | 1.1 | , | | |
| Signature: C | hris Flores | | | - | | Approved by | Signed 1 | By N | 1/4 / | KARTULE | ٤ | - |
| Printed Nam | e: chris flo | res | | | | Approved by | | | | | | |
| Title: field fo | oreman | | | | | Approval Da | ite: 4/30/1 | 5 | Expiration | Date: N | A | |
| E-mail Addr | ess: chris.fl | ores@meriten | ergy.com | | | Conditions of | of Approval: | - | | | | |
| E-mail Address: chris.flores@meritenergy.com Date: 9-29-2015 Phone: 575-420-5506 | | | | | **mediation per O.C.D. Rules & Guideline Cached | | | | | | | |

ATER THAN:

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e of New Mexico

| Incident ID | nAB1527326452 |
|----------------|---------------|
| District RP | 2RP-3304 |
| Facility ID | |
| Application ID | |

| Was this a major release as defined by | If YES, for what reason(s) does the resp Volume exceeded 25 bbls. | onsible party consider this a major release? | | | | | | |
|---|---|---|--|--|--|--|--|--|
| 19.15.29.7(A) NMAC? | | | | | | | | |
| ⊠ Yes □ No | | | | | | | | |
| | | | | | | | | |
| If YES was immediate n | tice given to the OCD? By whom? To y | whom? When and by what means (phone email_etc)? | | | | | | |
| | If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was given to NMOCD on 05/02/2023 via website. | | | | | | | |
| | | | | | | | | |
| | Initial l | Response | | | | | | |
| The responsible | party must undertake the following actions immedia | tely unless they could create a safety hazard that would result in injury | | | | | | |
| The source of the rele | ease has been stopped. | | | | | | | |
| ☐ The impacted area ha | s been secured to protect human health ar | nd the environment. | | | | | | |
| Released materials ha | ave been contained via the use of berms of | r dikes, absorbent pads, or other containment devices. | | | | | | |
| All free liquids and re | ecoverable materials have been removed a | and managed appropriately. | | | | | | |
| If all the actions describe | If all the actions described above have <u>not</u> 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. | | | | | | | | |
| | | ne best of my knowledge and understand that pursuant to OCD rules and | | | | | | |
| public health or the environ | ment. The acceptance of a C-141 report by the | otifications and perform corrective actions for releases which may endanger e 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>Isaac Cast</u> | Printed Name: <u>Isaac Castro</u> Title: <u>Environmental Professional</u> | | | | | | | |
| Signature: <u>Isaac (</u> | <u>Castro</u> | Date: <u>10/24/2019</u> | | | | | | |
| email: icastro@marathon | oil.com | Telephone: <u>575-988-0561</u> | | | | | | |
| | | | | | | | | |
| OCD Only | | | | | | | | |
| Received by: | | Date: | | | | | | |

State of New Mexico

| Incident ID | nAB1527326452 |
|----------------|---------------|
| District RP | 2RP-3304 |
| Facility ID | |
| Application ID | |

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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? | (ft bgs) ☐ Yes ⊠ No | | | | |
|--|----------------------|--|--|--|--|
| Did this release impact groundwater or surface water? | | | | | |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | | | | | |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | | | | | |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | | | | | |
| 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? | | | | | |
| 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? | | | | | |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | | | | | |
| Are the lateral extents of the release within a 100-year floodplain? | | | | | |
| Did the release impact areas not on an exploration, development, production, or storage site? | | | | | |
| 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. | | | | | |
| <u>Characterization Report Checklist</u> : Each of the following items must be included in the report. | | | | | |
| Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Field data Data table of soil contaminant concentration data Depth to water determination Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release Boring or excavation logs Photographs including date and GIS information | | | | | |
| ☑ Topographic/Aerial maps ☑ Laboratory data including chain of custody | | | | | |

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

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| | | | | | |

| Incident ID | nAB1527326452 |
|----------------|---------------|
| District RP | 2RP-3304 |
| Facility ID | |
| Application ID | |

| to the best of my knowledge and understand that pursuant to OCD rules and se notifications and perform corrective actions for releases which may endanger y the OCD does not relieve the operator of liability should their operations have a threat to groundwater, surface water, human health or the environment. In ator of responsibility for compliance with any other federal, state, or local laws |
|--|
| Title: Environmental Professional |
| _ Date:10/24/19 |
| Telephone:575-988-0561 |
| |
| |
| Date: |
| |

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| Incident ID | nAB1527326452 |
|----------------|---------------|
| District RP | 2RP-3304 |
| Facility ID | |
| Application ID | |

Closure

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

| Closure Report Attachment Checklist: Each of the following | g items must be included in the closure report. | | | | | | |
|---|---|--|--|--|--|--|--|
| A scaled site and sampling diagram as described in 19.15.29 | 9.11 NMAC | | | | | | |
| Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection) | | | | | | | |
| ☐ Laboratory analyses of final sampling (Note: appropriate Ol | DC District office must be notified 2 days prior to final sampling) | | | | | | |
| □ Description of remediation activities | | | | | | | |
| | | | | | | | |
| and regulations all operators are required to report and/or file cert may endanger public health or the environment. The acceptance should their operations have failed to adequately investigate and rehuman health or the environment. In addition, OCD acceptance compliance with any other federal, state, or local laws and/or regurestore, reclaim, and re-vegetate the impacted surface area to the accordance with 19.15.29.13 NMAC including notification to the Printed Name: Isaac Castro | • | | | | | | |
| OCD Only | | | | | | | |
| Received by: | Date: | | | | | | |
| | ty of liability should their operations have failed to adequately investigate and se water, human health, or the environment nor does not relieve the responsible d/or regulations. | | | | | | |
| Closure Approved by: | Date: | | | | | | |
| Printed Name: | Title: | | | | | | |
| | | | | | | | |

1625 N. French Dr., Hobbs, NM 88240

District II 811 S. First St., Artesia, NM 88210

1000 Rio Brazos Road, Aztec, NM 87410

District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

District I

District III

Page 19 of 88

NM OIL CONSERVATION ARTESIA DISTRICT

State, of New Mexico Energy Minerals and Natural Resources

1411 7 7 0040

Form C-141/ Revised August 8, 2011

Oil Conservation Division

JAN 1 1 2016
Submit 1 Copy

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

RECEIVED

1220 South St. Francis Dr. Santa Fe. NM 87505

| Release Notification and Corrective Action | | | | | | | | | | | | |
|--|--|---|--|--|--------------------------------|--|---|---------------------------------------|---|---|------------------------------|---|
| DABI | TO0115 | 57221 | | | _ | OPERAT | OR | ; | x Initia | al Report | | Final Report |
| Name of Co | mpany M | ERIT ENER | | 1454 | \longrightarrow | Contact Chr | | | | | | <u> </u> |
| | | 89, Eunice N | 10 | | | No. 575-420-55 | | | | | | |
| Facility Name SHUGART WEST 19FED # 9 Facility Type : Tank Battery | | | | | | | | | | | | |
| Surface Ow | ner BLM | | | Mineral (| Owner 1 | BLM/ | | | API No | .30-01530 | 92400 | |
| | | | | | | N OF RE | • | | - . | • | | |
| Unit Letter B | | | | | | | | | | County Ed | idy | |
| Latitude_32.734617Longitude-103.907571 | | | | | | | | | | | | |
| | | | | NAT | TURE | OF REL | EASE 10 PA | W 60 | i | 2PW | 10 | el _ |
| Type of Rele | | d water | | | | Volume of | Release:16 | | Volume I | Recovered: 3 | | |
| Source of Re Oil Production | | | | | | Date and H | lour of Occurren | ce | Date and | Hour of Dis | covery | 1-11-16 |
| Was Immedi | | Given? | | | | If YES, To | Whom? | | 1 | | | |
| Required | | x[| Yes [| □ No □ Not | | James Am Mike Brate | | | | v; | ; | <u>.</u> |
| By Whom? Chris Flores Date and Hour 1-11-16 James Amos 8:09 am- left voice mail Mike Bratcher 8:13 am- left voicemail | | | | | | | | | | | | |
| Was a Watercourse Reached? Yes x No No No No No No No | | | | | | | | | | | | |
| NA | | pacted, Descr | | | | _l | | | | | = | |
| Tank bottom Call in vacu | Describe Cause of Problem and Remedial Action Taken.* Tank bottom started leaking over night ,bad tank bottom: Call in vacuum trucks one with 100 barrels of fresh water one empty. Pump fresh water then skim up all standing fluid and empty out oil tank to begin repairs. | | | | | | | | | | | |
| Around tank | battery con extract oily | dirt as soon as | berm or fi | rewall mop and s | kim up a | all standing fl | uid possible. | | | .f' | _ | |
| regulations a public health should their or the enviro | II operators or the envi operations b nment. In a | are required to ronment. The nave failed to | o report a acceptana adequately OCD accep | nd/or file certain ce of a C-141 rep y investigate and | release rort by the remedia | notifications a ne NMOCD m te contaminat | knowledge and ind perform corre- narked as "Final li ion that pose a the we the operator of | ective act Report" (areat to g | tions for rel does not rel round wate | leases which lieve the ope er, surface wa | may e rator o ater, hu | endanger of liability uman health |
| | | | | | | | OIL CON | ISER | /ATION | DIVISIO | <u>NC</u> | |
| Signature: C | hris Flores | | | | | | Signed By | i IN | 14 Ex | there is the | | |
| Printed Nam | Printed Name: Chris Flores Approved by Environmental Specialist: Approved by Environmental Specialist: | | | | | | | | | | | |
| Title: Field F | Foreman | | | | | Approval Da | nte: 111111111111111111111111111111111111 | • | Expiration | Date: N/ | 4 | |
| E-mail Addr | ess:chris.flo | ores@meriten | ergy.com | | | Conditions of | | ח פייים | an R. Guld | ie lieuweba | , m | |
| Date: 1-11-2 Phone: 575- | | | | | | | tion per O.C.I REMEDIATIO | | | | · 🗀 | |
| * Attach Addi | | ets If Neces | sary | | · · · · · | LMIER | ······ | 41/<i>L</i>/ | | 2 | RP | - 3487 |

Received by OCD: 7/24/2023 6:30:56 AM State of New Mexico
Page 2 Oil Conservation Division

| Page | <i>20</i> | of | 88 |
|------|-----------|----|----|
| | | | |

| Incident ID | nAB1601157221 |
|----------------|---------------|
| District RP | 2RP-3487 |
| Facility ID | |
| Application ID | |

| Was this a major release as defined by | If YES, for what reason(s) does the respondence of | consible party consider this a major release? | | | | | | | |
|--|---|--|--|--|--|--|--|--|--|
| 19.15.29.7(A) NMAC? | | | | | | | | | |
| ⊠ Yes □ No | | | | | | | | | |
| | | | | | | | | | |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? | | | | | | | | | |
| Immediate notice was given to NMOCD on 05/02/2023 via website. | | | | | | | | | |
| | | | | | | | | | |
| | Initial 1 | Response | | | | | | | |
| The responsible p | party must undertake the following actions immedia | ately unless they could create a safety hazard that would result in injury | | | | | | | |
| The source of the rele | ease has been stopped. | | | | | | | | |
| The impacted area ha | s been secured to protect human health a | nd the environment. | | | | | | | |
| Released materials ha | ave been contained via the use of berms of | r dikes, absorbent pads, or other containment devices. | | | | | | | |
| All free liquids and re | ecoverable materials have been removed | and managed appropriately. | | | | | | | |
| If all the actions described | d above have <u>not</u> been undertaken, explai | n why: | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Per 19 15 29 8 B (4) NM | [AC the responsible party may commence | e remediation immediately after discovery of a release. If remediation | | | | | | | |
| has begun, please attach | a narrative of actions to date. If remedi- | al efforts have been successfully completed or if the release occurred of please attach all information needed for closure evaluation. | | | | | | | |
| | | ne best of my knowledge and understand that pursuant to OCD rules and | | | | | | | |
| | | otifications and perform corrective actions for releases which may endanger e OCD does not relieve the operator of liability should their operations have | | | | | | | |
| failed to adequately investig | ate and remediate contamination that pose a tl | hreat to groundwater, surface water, human health or the environment. In of responsibility for compliance with any other federal, state, or local laws | | | | | | | |
| and/or regulations. | r a C-141 report does not reneve the operator | of responsibility for compliance with any other rederar, state, of local laws | | | | | | | |
| Printed Name: <u>Isaac Cast</u> | ro | Title: Environmental Professional | | | | | | | |
| Signature: <u>Isaac C</u> | <u>Castro</u> | Date: <u>10/24/2019</u> | | | | | | | |
| email: <u>icastro@marathon</u> | oil.com | Telephone: <u>575-988-0561</u> | | | | | | | |
| | | | | | | | | | |
| OCD Only | | | | | | | | | |
| Received by: | | _ Date: | | | | | | | |
| Received by. | | | | | | | | | |

| | Page 21 of 8 | 88 |
|----------------|---------------|----|
| Incident ID | nAB1601157221 | |
| District RP | 2RP-3487 | |
| 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.

| _288 (ft bgs) |
|-----------------------|
| ☐ Yes ⊠ No |
| tical extents of soil |
| |
| ls. |
| |

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: 7/24/2023 6:30:56 AM Form C-141 State of New Mexico Page 4 Oil Conservation Division

| | Page 22 of 8 |
|-------------|---------------|
| Incident ID | nAB1601157221 |
| District RP | 2RP-3487 |
| | |

Facility ID
Application ID

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Isaac Castro Title: **Environmental Professional** Printed Name: √saac Castro _____ Date: ___10/24/19 Signature: icastro@marathonoil.com _____ Telephone: ___575-988-0561 **OCD Only** Received by: Date: _____

ate of New Mexico

Incident ID nAB1601157221
District RP 2RP-3487
Facility ID
Application ID

Closure

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

| Closure Report Attachment Checklist: Each of the follows | ing items must be included in the closure report. | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
| Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection) | | | | | | | |
| ☐ Laboratory analyses of final sampling (Note: appropriate | ODC District office must be notified 2 days prior to final sampling) | | | | | | |
| □ Description of remediation activities | | | | | | | |
| | | | | | | | |
| may endanger public health or the environment. The acceptance should their operations have failed to adequately investigate an human health or the environment. In addition, OCD acceptance compliance with any other federal, state, or local laws and/or restore, reclaim, and re-vegetate the impacted surface area to the accordance with 19.15.29.13 NMAC including notification to the state of the s | Title: Environmental Professional | | | | | | |
| OCD Only | | | | | | | |
| Received by: | Date: | | | | | | |
| Closure approval by the OCD does not relieve the responsible p | party of liability should their operations have failed to adequately investigate and face water, human health, or the environment nor does not relieve the responsible | | | | | | |
| Closure Approved by: | Date: | | | | | | |
| Printed Name: | | | | | | | |

| | | | | | | | | | Sample Name: SS09 | Date: 5/17/2023 |
|---|---------|---|--------|------|------------|------------|-------------------------|----------|--|-------------------|
| Ţ, | | | | NI | - | ~ . | | B.4 | Site Name: Shugart West 19 F | |
| L | | | | N | 3 | U | . U | V | Incident Numbers: NAB15273 | |
| ENSOLUM | | | | | | | Job Number: 03A2040004 | 3-, | | |
| | | ı | LITHOL | OGIC | : / SOIL 9 | SAMPLING | LOG | | Logged By: ANG | Method: Hand Auge |
| าก | rdinate | | | | | , Liive | | | Hole Diameter: 3" | Total Depth: 2' |
| Coordinates: 32.73457, -103.90743 Hole Comments: | | | | | | | note Diameter. 5 | | | |
| | | | | 80 | <u> </u> | Sample | | ock 1 | | |
| Moisture Content Chloride (ppm) Vapor (ppm) Sample ID Staining Obeth (tt pds) Debth (tt pds) OSCS/Rock Symbol | | | | | | Depth | Lithologic Descriptions | | | |
| D | | | 0.1 | N | SS09 | 1 1 _ | <u> </u> | | | |
| | | | | | | - | - - | SM | (0.5-1'), SILTY SAND, dry no staining and no odor. | , red, fine, |
| D | | | 0.2 | N | SS09 | 2 | 2 | SM | (1-2'), SILTY SAND, dry, r no staining and no odor. Total depth at 2' bgs. | ed, fine, |
| | | I | | | | _ | - | TD | Total depth at 2' bgs. | |
| | | | | | | | | | | |
| | | | | | | | | | | |



APPENDIX C

Photographic Log

ENSOLUM

Photographic Log

Marathon Oil Permian LLC Shugart West 19 Federal #8 and #9 Incident Numbers: NAB1527326452 / NAB1601157221



Photograph 1 Date: 05/17/23
Description: Delineation sampling activites

View: Southeast



Photograph 2 Date: 05/17/23 Description: Delineation sampling activites

View: East



Photograph 3 Date: 06/02/23 Description: Delineation sampling activites

View: North



Photograph 4 Date: 06/02/23 Description: Delineation sampling activites

View: Northeast



APPENDIX D

Laboratory Analytical Reports & Chain-of-Custody Documentation



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

May 30, 2023

Ashley Giovengo Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220

TEL: (575) 297-0956

FAX:

RE: Shugart West 19 Federal CTB H OrderNo.: 2305A93

Dear Ashley Giovengo:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/20/2023 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 Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report Lab Order 2305A93

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company

Client Sample ID: SS09-0.5'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 10:25:00 AM

 Lab ID:
 2305A93-001
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

| Analyses | Result | RL Qual | Units | DF | Date Analyzed |
|---------------------------------------|--------------|----------|-------|----|----------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGA | Analyst: PRD | | | | |
| Diesel Range Organics (DRO) | 18 | 9.9 | mg/Kg | 1 | 5/23/2023 9:51:03 PM |
| Motor Oil Range Organics (MRO) | ND | 49 | mg/Kg | 1 | 5/23/2023 9:51:03 PM |
| Surr: DNOP | 106 | 69-147 | %Rec | 1 | 5/23/2023 9:51:03 PM |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | Analyst: KMN |
| Gasoline Range Organics (GRO) | ND | 4.7 | mg/Kg | 1 | 5/25/2023 6:01:00 AM |
| Surr: BFB | 85.1 | 15-244 | %Rec | 1 | 5/25/2023 6:01:00 AM |
| EPA METHOD 8021B: VOLATILES | | | | | Analyst: KMN |
| Benzene | ND | 0.024 | mg/Kg | 1 | 5/25/2023 6:01:00 AM |
| Toluene | ND | 0.047 | mg/Kg | 1 | 5/25/2023 6:01:00 AM |
| Ethylbenzene | ND | 0.047 | mg/Kg | 1 | 5/25/2023 6:01:00 AM |
| Xylenes, Total | ND | 0.094 | mg/Kg | 1 | 5/25/2023 6:01:00 AM |
| Surr: 4-Bromofluorobenzene | 81.3 | 39.1-146 | %Rec | 1 | 5/25/2023 6:01:00 AM |
| EPA METHOD 300.0: ANIONS | | | | | Analyst: SNS |
| Chloride | 95 | 60 | mg/Kg | 20 | 5/25/2023 1:07:27 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
- 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

Page 1 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: 2305A93

30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: MB-75165 SampType: MBLK TestCode: EPA Method 300.0: Anions

PBS Client ID: Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520086 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75165 SampType: LCS TestCode: EPA Method 300.0: Anions

LCSS Client ID: Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520088 Units: mg/Kg

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

Chloride 14 15.00 94.2 110

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

Page 2 of 5

Hall Environmental Analysis Laboratory, Inc.

2305A93 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: LCS-75110 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 75110 RunNo: 96945 Units: mg/Kg Prep Date: 5/22/2023 Analysis Date: 5/23/2023 SeqNo: 3518232 PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result LowLimit Qual 49 10 50.00 n 98.8 61.9 130

Diesel Range Organics (DRO) Surr: DNOP 5.0 5.000 101 69 147

Sample ID: MB-75110 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 75110 RunNo: 96945

Prep Date: Analysis Date: 5/23/2023 5/22/2023 SeqNo: 3518236 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND 10

Motor Oil Range Organics (MRO) ND 50 Surr: DNOP 8.1 10.00 80.8 147 69

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

Page 3 of 5

Hall Environmental Analysis Laboratory, Inc.

2305A93 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75105 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 75105 RunNo: 96984

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519769 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 850 1000 84.6 15 244

Sample ID: Ics-75105 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 75105 RunNo: 96984

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519770 Units: mg/Kg

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

 Gasoline Range Organics (GRO)
 22
 5.0
 25.00
 0
 88.6
 70
 130

 Surr: BFB
 1900
 1000
 191
 15
 244

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

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

2305A93 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75105 SampType: MBLK TestCode: EPA Method 8021B: Volatiles
Client ID: PBS Batch ID: 75105 RunNo: 96984

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519793 Units: mg/Kg

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

 Benzene
 ND
 0.025

 Toluene
 ND
 0.050

 Ethylbenzene
 ND
 0.050

 Xylenes, Total
 ND
 0.10

Surr: 4-Bromofluorobenzene 0.84 1.000 84.2 39.1 146

| Sample ID: Ics-75105 | Samp ⁻ | Гуре: LC | S | Tes | tCode: EF | EPA Method 8021B: Volatiles | | | | | | | | | | | |
|----------------------------|-------------------|-------------------|-----------|--------------|-----------|-----------------------------|-------------|------|----------|------|--|--|--|--|--|--|--|
| Client ID: LCSS | Batc | h ID: 75 1 | 105 | RunNo: 96984 | | | | | | | | | | | | | |
| Prep Date: 5/22/2023 | Analysis [| Date: 5/ 2 | 24/2023 | (| SeqNo: 3 | 519794 | Units: mg/K | g | | | | | | | | | |
| Analyte | Result PQL | | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | | | | | | | |
| Benzene | 0.85 | 0.025 | 1.000 | 0 | 84.9 | 70 | 130 | | | | | | | | | | |
| Toluene | 0.84 | 0.050 | 1.000 | 0 | 84.5 | 70 | 130 | | | | | | | | | | |
| Ethylbenzene | 0.83 | 0.050 | 1.000 | 0 | 82.5 | 70 | 130 | | | | | | | | | | |
| Xylenes, Total | 2.5 | 0.10 | 3.000 | 0 | 82.2 | 70 | 130 | | | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.86 | | 1.000 | | 86.2 | 39.1 | 146 | | | | | | | | | | |

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 5

Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

Released to Imaging: 7/31/2023 10:26:11 AM

| Client Name: Marathon Oil Compa | ny Work Order Num | nber: 2305A93 | | RcptNo: 1 |
|--|----------------------------|----------------|---------------|--|
| Received By: Tracy Casarrubias | 5/20/2023 9:30:00 | AM | | |
| Completed By: Tracy Casarrubias | 5/20/2023 10:50:0 | | | |
| | | a Wini | | |
| Reviewed By: M5/22/23 | 3 | | | |
| Chain of Custody | | | _ | |
| 1. Is Chain of Custody complete? | | Yes 🗌 | No 🗹 | Not Present |
| 2. How was the sample delivered? | | <u>Courier</u> | | |
| <u>Log In</u> | | | | |
| Was an attempt made to cool the sa | amples? | Yes 🗹 | No 🗌 | NA 🗍 |
| 4. Were all samples received at a temp | perature of >0° C to 6.0°C | Yes 🗹 | No 🗌 | NA 🗆 |
| 5. Sample(s) in proper container(s)? | | Yes 🗹 | No 🗌 | |
| 6. Sufficient sample volume for indicate | ed test(s)? | Yes 🗹 | No 🗌 | |
| 7. Are samples (except VOA and ONG |) properly preserved? | Yes 🗹 | No 🗌 | |
| 8. Was preservative added to bottles? | | Yes 🗌 | No 🗹 | NA 🗆 |
| 9. Received at least 1 vial with headspa | ace <1/4" for AQ VOA? | Yes | No 🗌 | NA ☑ |
| 10. Were any sample containers receive | ed broken? | Yes 🗆 | No 🗸 | # of preserved |
| 1. Does paperwork match bottle labels (Note discrepancies on chain of cust | | Yes 🗹 | | bottles checked for pH: (<2 or >12 unless noted |
| 2. Are matrices correctly identified on C | | Yes 🗹 | No 🗌 | Adjusted? |
| 3. Is it clear what analyses were reques | | Yes 🗹 | No 🗌 | |
| 4. Were all holding times able to be me (If no, notify customer for authorizati | | Yes 🗹 | No 🗆 | Checked by: The S/20/ |
| Special Handling (if applicable |) | | | |
| 15. Was client notified of all discrepanc | ies with this order? | Yes 🗌 | No 🗆 | na 🗹 |
| Person Notified: | Date | e: [| | |
| By Whom: | Via: | eMail [] | Phone 🗌 Fax [| In Person |
| Regarding: | | | | |
| Client Instructions: Mailing a | ddress is missing on COC-T | MC 5/20/23 | | |
| 16. Additional remarks: | | | | |
| Client did not relinquish chain | of custody | | | |
| 17. Cooler Information | | | | |
| Cooler No Temp °C Condit | ion Seal Intact Seal No | Seal Date | Signed By | |
| 1 5.3 Good | Yes Yogi | | | |

| HALL ENVIRONME MORE OF 88 | ANALYSIS LABORATORY | www.hallenvironmental.com | 4901 Hawkins NE - Albuquerque, NM 87109 | | ednest | SC S S | PO4, | 0RO 32 P 2705 2705 32, F | 1, € 808 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1 | \O\ 918 0 0 0 0 0 0 0 0 0 0 | icid nod 1848 NC NC NC NC | esti Meth by 8 N 8 M Br, JOV | #TEX # 17 PH: 80 # 18 OB (N # 18 OB (N | × × | | | | | | | Remarks: Please cc msanjari@marathonoil.com, | agiovengo@ensolum.com and cburton@ensolum.com on results |) | Any sub-contracted data will be clearly notated on the analytical report. |
|------------------------------------|----------------------|---|---|-----------------------|------------------------------|---|--------------|--------------------------------------|---|---|---|--|---|-------|-----------------|--|--|--|--|--|--|--|-----------------------------------|---|
| Turn-Around Time: ヾC ヽoナヽ | Standard Rush | Project Name: Shugart West 19 Federal CTB H | Shugart West 19 Federal 8/Shugart West 19 Federal 9 | Project #: 03A2040004 | MO Cost Center. Ø29588000(2) | Project Manager: Ashley Giovengo | 575-988-0055 | <u>agiovengo@ensolum.com</u> | | On Ice: Fres 🗆 No Uco; | # of Coolers: | Cooler Temp(including cr): 5.4-0.1 = 5.3. | Container Type Preservative HEAL No. | ris 7 | 3 | | | | | | Received by: Via: Date Time | 5/11/2 | Received by: ViaCounter Date Time | 13 Mo WMM > S/10/13 Some of this possibility. Any sub-contracted data will be clearly notated on the analytical report. |
| Received@1981h72@17810063yv1Record | Marathon Oil Company | | On File | | 3753 | msa <mark>nja</mark> ri@marath <u>onoil.com</u> | | ☐ Level 4 (Full Validation) | | | | | Matrix Sample Name | + | | | | | | | Relinquished by: | | Relinquished by: | Mumm |
| Received ON OSD 72042 | Client: Marathon (| Melodie Saniari | | | Phone #: 575-988-8753 | -ax#: | in | Standard | ے | | (be) | | Date | 7 | 2/1//2023 10:23 | | | | | | Date: | /2023 | Time: | 5/M/20 MBD |



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

May 30, 2023

Ashley Giovengo Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220

TEL: (575) 297-0956

FAX:

RE: Shugart West 19 Federal CTB H OrderNo.: 2305A94

Dear Ashley Giovengo:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/20/2023 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 Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company

Client Sample ID: SS09-1.0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 3:24:00 PM

 Lab ID:
 2305A94-001
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

Result **RL Qual Units** DF **Date Analyzed Analyses** Analyst: PRD **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Diesel Range Organics (DRO) 16 9.9 mg/Kg 1 5/23/2023 10:02:01 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 5/23/2023 10:02:01 PM Surr: DNOP 69-147 %Rec 1 5/23/2023 10:02:01 PM 113 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: KMN Gasoline Range Organics (GRO) ND 5/25/2023 6:22:00 AM 4.7 mg/Kg 1 Surr: BFB 85.4 15-244 %Rec 1 5/25/2023 6:22:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: KMN Benzene ND 5/25/2023 6:22:00 AM 0.023 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 5/25/2023 6:22:00 AM Ethylbenzene ND 0.047 mg/Kg 1 5/25/2023 6:22:00 AM Xylenes, Total ND 0.093 mg/Kg 5/25/2023 6:22:00 AM 1 Surr: 4-Bromofluorobenzene 84.4 39.1-146 %Rec 1 5/25/2023 6:22:00 AM **EPA METHOD 300.0: ANIONS** Analyst: SNS Chloride mg/Kg ND 60 20 5/25/2023 1:44:28 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
- 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

Page 1 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305A94** *30-May-23*

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: MB-75165 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520086 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75165 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520088 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 94.2 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

Page 2 of 5

Hall Environmental Analysis Laboratory, Inc.

2305A94 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: LCS-75110 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 75110 RunNo: 96945 Units: mg/Kg Prep Date: 5/22/2023 Analysis Date: 5/23/2023 SeqNo: 3518232

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

Diesel Range Organics (DRO) 49 10 50.00 n 98.8 61.9 130 Surr: DNOP 5.0 5.000 101 69 147

Sample ID: MB-75110 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 75110 RunNo: 96945

Prep Date: Analysis Date: 5/23/2023 5/22/2023 SeqNo: 3518236 Units: mg/Kg

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

Diesel Range Organics (DRO) ND 10 Motor Oil Range Organics (MRO) ND 50

Surr: DNOP 8.1 10.00 80.8 147 69

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

Page 3 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305A94** *30-May-23*

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75105 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 75105 RunNo: 96984

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519769 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 850 1000 84.6 15 244

Sample ID: Ics-75105 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

1000

Client ID: LCSS Batch ID: 75105 RunNo: 96984

1900

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519770 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO) 22 5.0 25.00 0 88.6 70 130

191

15

244

Qualifiers:

Surr: BFB

- 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 Quantitative 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

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

0.86

WO#: **2305A94** *30-May-23*

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75105 SampType: MBLK TestCode: EPA Method 8021B: Volatiles
Client ID: PBS Batch ID: 75105 RunNo: 96984

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519793 Units: mg/Kg

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

 Benzene
 ND
 0.025

 Toluene
 ND
 0.050

 Ethylbenzene
 ND
 0.050

 Xylenes, Total
 ND
 0.10

Surr: 4-Bromofluorobenzene 0.84 1.000 84.2 39.1 146

1.000

| Sample ID: Ics-75105 | SampT | S | Tes | | | | | | | |
|----------------------|------------|-------------------|-----------|-------------|-----------|----------|-----------|------|----------|------|
| Client ID: LCSS | Batcl | h ID: 75 1 | 105 | F | RunNo: 90 | 6984 | | | | |
| Prep Date: 5/22/2023 | Analysis D | 24/2023 | 5 | SeqNo: 3 | g | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.85 | 0.025 | 1.000 | 0 | 84.9 | 70 | 130 | | | |
| Toluene | 0.84 | 0.050 | 1.000 | 0 | 84.5 | 70 | 130 | | | |
| Ethylbenzene | 0.83 | 0.050 | 1.000 | 0 | 82.5 | 70 | 130 | | | |
| Xylenes, Total | 2.5 | 0.10 | 3.000 | 0 | 82.2 | 70 | 130 | | | |

86.2

39.1

146

Qualifiers:

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

Surr: 4-Bromofluorobenzene

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 5



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

Released to Imaging: 7/31/2023 10:26:11 AM

| Client Name: Marathon | Oil Company | Work | Order Numb | er: 2305A | 94 | | RcptNo | p: 1 |
|--|--------------------|---------------|-----------------|--|----------|---------------------------------|----------------------------|----------------------|
| Received By: Tracy Ca | sarrubias | 5/20/20 | 23 9:30:00 A | ιM | | | | |
| Completed By: Tracy Ca | sarrubias | 5/20/20 | 23 10:54:04 | AM | | | | |
| Reviewed By: 715/2 | | | | | | | | |
| Chain of Custody | | | | | | | | |
| 1. Is Chain of Custody comp | olete? | | | Yes [| | No 🗹 | Not Present | |
| 2. How was the sample deli | vered? | | | Courie | Ţ | | | |
| <u>Log In</u> | | | | . E | 7 | No 🗌 | na 🗆 | |
| 3. Was an attempt made to | cool the samples | ? | | Yes 🛚 | | NO LL | NA L | |
| 4. Were all samples receive | d at a temperatur | e of >0°C | to 6.0°C | Yes 🖢 | | No 🗌 | na 🗆 | |
| 5. Sample(s) in proper conta | ainer(s)? | | | Yes 🛭 | | No 🗌 | | |
| 6. Sufficient sample volume | for indicated test | (s)? | | Yes 🔽 | | No 🗌 | | |
| 7. Are samples (except VOA | and ONG) prope | erly preserve | ed? | Yes 🔽 | | No 🗌 | | |
| 8. Was preservative added t | o bottles? | | | Yes [| | No 🗹 | NA 🗌 | |
| 9. Received at least 1 vial w | ith headspace <1 | /4" for AQ V | OA? | Yes [|] | No 🗌 | NA 🗹 | |
| 10. Were any sample contain | ers received brok | ken? | | Yes | لـ | No 🗸 | # of preserved | |
| 11. Does paperwork match bo (Note discrepancies on ch | | | | Yes 🛚 | | No 🗆 | bottles checked for pH: | or >12 unless noted) |
| 12. Are matrices correctly ide | ntified on Chain o | of Custody? | | Yes 🛚 | | No 🗌 | Adjusted? | |
| 13. Is it clear what analyses w | vere requested? | | | Yes 🛚 | | No 🗌 | | clinh |
| 14. Were all holding times ab (If no, notify customer for | | | | Yes 🖢 | | No 🗆 | Checked by: | TML 5/10/2 |
| Special Handling (if ap | plicable) | | | | | | | |
| 15. Was client notified of all | discrepancies with | n this order? | · | Yes [| | No 🗌 | NA 🗹 | |
| Person Notified: | | | Date: | The state of the s | | AND THE RESIDENCE OF THE PARTY. | | |
| By Whom: | | | Via: | ☐ eMail | □ F | Phone 🗌 Fax | In Person | |
| Regarding: | J | | | | | | | |
| Client Instructions: | Mailing address | is missing | on COC- TM | IC 5/20/23 | | | | |
| 16. Additional remarks: | | | | | | | | |
| Client did not reling | uish chain of cus | tody | | | | | | |
| 17. Cooler Information | Condition | Coal Inters | Cool No | Coel Dat | | Cianad Du | 1 | |
| Cooler No Temp °C | | Seal Intact | Seal No Yogi | Seal Dat | E | Signed By | | |
| Harris de la constante de la c | | | | | | | | |

If necessary, samples submitted to Hall Environmental may be Subcon



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

OrderNo.: 2305A95

May 30, 2023

Ashley Giovengo Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220

TEL: (575) 297-0956

FAX:

RE: Shugart West 19 Federal CTB H

Dear Ashley Giovengo:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/20/2023 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 Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2305A95 Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS09-2.0'

Project: Shugart West 19 Federal CTB H Collection Date: 5/17/2023 3:27:00 PM Lab ID: 2305A95-001 Matrix: SOIL Received Date: 5/20/2023 9:30:00 AM

Result **RL Qual Units** DF **Date Analyzed Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: PRD Diesel Range Organics (DRO) 12 8.7 mg/Kg 1 5/23/2023 10:23:49 PM Motor Oil Range Organics (MRO) ND 44 mg/Kg 1 5/23/2023 10:23:49 PM Surr: DNOP 107 69-147 %Rec 1 5/23/2023 10:23:49 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: KMN Gasoline Range Organics (GRO) ND 5/25/2023 6:44:00 AM 4.9 mg/Kg 1 Surr: BFB 89.8 15-244 %Rec 1 5/25/2023 6:44:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: KMN Benzene ND 5/25/2023 6:44:00 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 5/25/2023 6:44:00 AM Ethylbenzene ND 0.049 mg/Kg 1 5/25/2023 6:44:00 AM Xylenes, Total ND 0.098 mg/Kg 1 5/25/2023 6:44:00 AM Surr: 4-Bromofluorobenzene 84.8 39.1-146 %Rec 1 5/25/2023 6:44:00 AM **EPA METHOD 300.0: ANIONS** Analyst: SNS Chloride mg/Kg ND 60 20 5/25/2023 1:56:49 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
- Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated.
- Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Sample pH Not In Range
- RLReporting Limit

Page 1 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305A95**

30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: MB-75165 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520086 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75165 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520088 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 94.2 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

Page 2 of 5

Hall Environmental Analysis Laboratory, Inc.

2305A95 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: LCS-75110 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 75110 RunNo: 96945

Units: mg/Kg Prep Date: 5/22/2023 Analysis Date: 5/23/2023 SeqNo: 3518232

PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result LowLimit Qual Diesel Range Organics (DRO) 49 10 50.00 n 98.8 61.9 130

Surr: DNOP 5.0 5.000 101 69 147

Sample ID: MB-75110 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 75110 RunNo: 96945

Prep Date: Analysis Date: 5/23/2023 5/22/2023 SeqNo: 3518236 Units: mg/Kg

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

Diesel Range Organics (DRO) ND 10 Motor Oil Range Organics (MRO) ND 50

Surr: DNOP 8.1 10.00 80.8 147 69

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

Page 3 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: 2305A95 30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75105 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

PBS Client ID: Batch ID: 75105 RunNo: 96984

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519769 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 850 1000 84.6 15 244

Sample ID: Ics-75105 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

1000

Client ID: LCSS Batch ID: 75105 RunNo: 96984

1900

Prep Date: Analysis Date: 5/24/2023 SeqNo: 3519770 5/22/2023 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 22 25.00 88.6 70

191

15

244

Qualifiers:

Surr: BFB

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

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

0.86

WO#: **2305A95** *30-May-23*

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75105 SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: 75105 RunNo: 96984

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519793 Units: mg/Kg

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

 Benzene
 ND
 0.025

 Toluene
 ND
 0.050

 Ethylbenzene
 ND
 0.050

 Xylenes, Total
 ND
 0.10

Surr: 4-Bromofluorobenzene 0.84 1.000 84.2 39.1 146

1.000

| Sample ID: Ics-75105 | Samp | Гуре: LC | s | TestCode: EPA Method 8021B: Volatiles | | | | | | | |
|----------------------|------------|-------------------|-----------|---------------------------------------|----------|----------|-------------|------|----------|------|--|
| Client ID: LCSS | Batcl | h ID: 75 1 | 105 | F | | | | | | | |
| Prep Date: 5/22/2023 | Analysis [| Date: 5/ 2 | 24/2023 | 5 | SeqNo: 3 | 519794 | Units: mg/K | g | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Benzene | 0.85 | 0.025 | 1.000 | 0 | 84.9 | 70 | 130 | | | | |
| Toluene | 0.84 | 0.050 | 1.000 | 0 | 84.5 | 70 | 130 | | | | |
| Ethylbenzene | 0.83 | 0.050 | 1.000 | 0 | 82.5 | 70 | 130 | | | | |
| Xylenes, Total | 2.5 | 0.10 | 3.000 | 0 | 82.2 | 70 | 130 | | | | |

86.2

39.1

146

Qualifiers:

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

Surr: 4-Bromofluorobenzene

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 5



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

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

Sample Log-In Check List

Released to Imaging: 7/31/2023 10:26:11 AM

Website: www.hallenvironmental.com RcptNo: 1 Client Name: Marathon Oil Company Work Order Number: 2305A95 Received By: 5/20/2023 9:30:00 AM **Tracy Casarrubias** Completed By: 5/20/2023 10:57:19 AM **Tracy Casarrubias** Th 5-122/23 Reviewed By: Chain of Custody Yes 🗌 No V Not Present 1. Is Chain of Custody complete? 2. How was the sample delivered? Courier Log In NA 🗌 No 🗌 3. Was an attempt made to cool the samples? Yes 🔽 No 🗌 NA 🗌 Yes 🗹 4. Were all samples received at a temperature of >0° C to 6.0°C No 🗌 Yes 🗹 Sample(s) in proper container(s)? Yes 🔽 6. Sufficient sample volume for indicated test(s)? Yes 🔽 No 7. Are samples (except VOA and ONG) properly preserved? Yes 🗌 No 🔽 NA 🗌 8. Was preservative added to bottles? NA 🗸 Yes 🗌 No 🗌 9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes \square No 🔽 10. Were any sample containers received broken? # of preserved bottles checked No 🗌 for pH: Yes 🗹 11. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) djusted? Yes 🔽 No \square 12. Are matrices correctly identified on Chain of Custody? No 🗌 13. Is it clear what analyses were requested? 5/20/23 Checked by: TML Yes 🗹 No 14. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? Yes 🗌 No \square NA 🗹 Person Notified: Date: By Whom: eMail Phone Fax In Person Regarding: Client Instructions: Mailing address is missing on COC- TMC 5/20/23 16. Additional remarks: Client did not relinquish chain of custody 17. Cooler Information Cooler No Temp °C Seal Intact | Seal No Condition Seal Date Signed By 5.3 Good Yes Yogi

| HALL ENVIRONMENT STATE OF 88 | ANALYSIS LABORATORY | <u></u> | - Albuqu | Tel. 505-345-3975 Fax 505-345-410/ Analysis Request | | NEC | 70SIN | 808 4.1) | des/ des/ do o de de do o de do o de do o | D)(D Dioi: Dio: Dio | Sering Running | 8ТЕХ 8081 Р ЕDВ (И РАН5 РСКА (СГ, F, 101, F, | Y > > | | | | | | | | Remarks: Please cc msanjari@marathonoil.com, | agiovengo@ensolum.com | | | Any sub-contracted data will be clearly notated on the analytical report. |
|--|------------------------------|---|---|--|----------------------------------|----------------------------------|---------------------------------------|-------------|---|--|--|--|---------|----------------------------|--|--|--|--|--|--|--|---|------------------------|-------|---|
| Turn-Around Time: רבו. וידי | Standard 🗆 Rush | Project Name: Shugart West 19 Federal CTB H | Shugart West 19 Federal 8/Shugart West 19 Federal 9 | Project #: 03A2040004 | MO Cost Center: 60 29588000 (62) | Project Manager: Ashley Giovengo | 575-988-0055 aqiovengo@ensolum.com | Sampler | | | Cooler Temp(including CF): S.4.0.1 - 5.3 | Container Type Preservative HEAL No. Type 2805A95 | | 1 jar lce WO | | | | | | | Received by: Via: Date Time | 5/M/23 850 | Via: County Date T | chors | The state of the analytical report. |
| Received of Part 108 1203 5 total with ecord | Client: Marathon Oil Company | Molodie Serieri | Mailing Address: On File | | Dhone #: 575-988-8753 | l'a | ioi | | Accreditation: | (00) | | Time Matrix Sample Name | אומנווע | 5/17/2023 15:27 S SSU8-2.0 | | | | | | | | Date: Time: Kelinquished by. 05/19/2023 1 1 | Time: Relinguished by: | 2 | Sylve Manney Solve |



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

May 30, 2023

Ashley Giovengo Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220

TEL: (575) 297-0956

FAX:

RE: Shugart West 19 Federal CTB H OrderNo.: 2305A96

Dear Ashley Giovengo:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/20/2023 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 Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

EPA METHOD 300.0: ANIONS

Chloride

Analytical Report Lab Order 2305A96

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company

Client Sample ID: SS01B-0

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 2:09:00 PM

 Lab ID:
 2305A96-001
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

Result **RL Qual Units** DF **Date Analyzed Analyses** Analyst: PRD **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Diesel Range Organics (DRO) ND 8.4 mg/Kg 1 5/23/2023 10:34:52 PM Motor Oil Range Organics (MRO) ND 42 mg/Kg 1 5/23/2023 10:34:52 PM Surr: DNOP 103 69-147 %Rec 1 5/23/2023 10:34:52 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: KMN Gasoline Range Organics (GRO) ND 5/25/2023 7:06:00 AM 5.0 mg/Kg 1 Surr: BFB 87.9 15-244 %Rec 1 5/25/2023 7:06:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: KMN Benzene ND 5/25/2023 7:06:00 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 5/25/2023 7:06:00 AM Ethylbenzene ND 0.050 mg/Kg 1 5/25/2023 7:06:00 AM Xylenes, Total ND mg/Kg 1 5/25/2023 7:06:00 AM 0.099 Surr: 4-Bromofluorobenzene 85.0 39.1-146 %Rec 1 5/25/2023 7:06:00 AM

ND

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

mg/Kg

20

60

- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 11

Analyst: SNS

5/25/2023 2:09:09 AM

Project:

Lab ID:

CLIENT: Marathon Oil Company

2305A96-002

Analytical Report

Lab Order **2305A96**Date Reported: **5/30/2023**

Hall Environmental Analysis Laboratory, Inc.

Shugart West 19 Federal CTB H

Client Sample ID: SS02A-0'

Collection Date: 5/17/2023 1:42:00 PM

Received Date: 5/20/2023 9:30:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed |
|------------------------------------|---------|----------|----------|----|-----------------------|
| EPA METHOD 8015M/D: DIESEL RANGE O | RGANICS | | | | Analyst: PRD |
| Diesel Range Organics (DRO) | ND | 9.3 | mg/Kg | 1 | 5/24/2023 5:37:19 PM |
| Motor Oil Range Organics (MRO) | ND | 47 | mg/Kg | 1 | 5/24/2023 5:37:19 PM |
| Surr: DNOP | 69.5 | 69-147 | %Rec | 1 | 5/24/2023 5:37:19 PM |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | Analyst: JJP |
| Gasoline Range Organics (GRO) | ND | 4.9 | mg/Kg | 1 | 5/24/2023 11:29:00 PM |
| Surr: BFB | 88.3 | 15-244 | %Rec | 1 | 5/24/2023 11:29:00 PM |
| EPA METHOD 8021B: VOLATILES | | | | | Analyst: KMN |
| Benzene | ND | 0.025 | mg/Kg | 1 | 5/25/2023 1:32:00 PM |
| Toluene | ND | 0.049 | mg/Kg | 1 | 5/25/2023 1:32:00 PM |
| Ethylbenzene | ND | 0.049 | mg/Kg | 1 | 5/25/2023 1:32:00 PM |
| Xylenes, Total | ND | 0.099 | mg/Kg | 1 | 5/25/2023 1:32:00 PM |
| Surr: 4-Bromofluorobenzene | 83.7 | 39.1-146 | %Rec | 1 | 5/25/2023 1:32:00 PM |
| EPA METHOD 300.0: ANIONS | | | | | Analyst: SNS |
| Chloride | ND | 60 | mg/Kg | 20 | 5/25/2023 2:46:12 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

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

Page 2 of 11

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS03B-0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 3:41:00 PM

 Lab ID:
 2305A96-003
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed |
|-------------------------------------|---------|----------|----------|----|-----------------------|
| EPA METHOD 8015M/D: DIESEL RANGE OF | RGANICS | | | | Analyst: PRD |
| Diesel Range Organics (DRO) | 24 | 9.9 | mg/Kg | 1 | 5/24/2023 5:48:08 PM |
| Motor Oil Range Organics (MRO) | ND | 49 | mg/Kg | 1 | 5/24/2023 5:48:08 PM |
| Surr: DNOP | 91.5 | 69-147 | %Rec | 1 | 5/24/2023 5:48:08 PM |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | Analyst: JJP |
| Gasoline Range Organics (GRO) | ND | 5.0 | mg/Kg | 1 | 5/24/2023 11:52:20 PM |
| Surr: BFB | 72.1 | 15-244 | %Rec | 1 | 5/24/2023 11:52:20 PM |
| EPA METHOD 8021B: VOLATILES | | | | | Analyst: KMN |
| Benzene | ND | 0.025 | mg/Kg | 1 | 5/25/2023 1:54:00 PM |
| Toluene | ND | 0.050 | mg/Kg | 1 | 5/25/2023 1:54:00 PM |
| Ethylbenzene | ND | 0.050 | mg/Kg | 1 | 5/25/2023 1:54:00 PM |
| Xylenes, Total | ND | 0.10 | mg/Kg | 1 | 5/25/2023 1:54:00 PM |
| Surr: 4-Bromofluorobenzene | 83.5 | 39.1-146 | %Rec | 1 | 5/25/2023 1:54:00 PM |
| EPA METHOD 300.0: ANIONS | | | | | Analyst: SNS |
| Chloride | 2200 | 60 | mg/Kg | 20 | 5/25/2023 2:58:33 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
- 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

pH Not In Range
ng Limit Page 3 of 11

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS04A-0'

Project: Shugart West 19 Federal CTB H **Collection Date:** 5/17/2023 1:40:00 PM

Lab ID: 2305A96-004 Matrix: SOIL Received Date: 5/20/2023 9:30:00 AM Result **RL Qual Units** DF **Date Analyzed Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: PRD Diesel Range Organics (DRO) ND 9.7 mg/Kg 1 5/25/2023 6:02:59 PM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 5/25/2023 6:02:59 PM Surr: DNOP 85.3 69-147 %Rec 1 5/25/2023 6:02:59 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 5/25/2023 12:15:38 AM 4.9 mg/Kg 1 Surr: BFB 74.7 15-244 %Rec 1 5/25/2023 12:15:38 AM **EPA METHOD 8021B: VOLATILES** Analyst: KMN Benzene ND 5/25/2023 2:15:00 PM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 5/25/2023 2:15:00 PM Ethylbenzene ND 0.049 mg/Kg 1 5/25/2023 2:15:00 PM Xylenes, Total ND 0.098 mg/Kg 1 5/25/2023 2:15:00 PM Surr: 4-Bromofluorobenzene 84.5 39.1-146 %Rec 1 5/25/2023 2:15:00 PM **EPA METHOD 300.0: ANIONS** Analyst: SNS

320

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
- 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

mg/Kg

20

5/25/2023 3:10:54 AM

60

- P Sample pH Not In Range
- RL Reporting Limit

orting Limit Page 4 of 11

Analytical Report

Lab Order **2305A96**Date Reported: **5/30/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS05-0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 9:36:00 AM

 Lab ID:
 2305A96-005
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

Result **RL Qual Units** DF **Date Analyzed Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: PRD Diesel Range Organics (DRO) 18 9.8 mg/Kg 1 5/24/2023 1:34:32 PM Motor Oil Range Organics (MRO) 57 49 mg/Kg 1 5/24/2023 1:34:32 PM Surr: DNOP 71.2 69-147 %Rec 1 5/24/2023 1:34:32 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 5/25/2023 12:39:01 AM 4.9 mg/Kg 1 Surr: BFB 80.6 15-244 %Rec 1 5/25/2023 12:39:01 AM **EPA METHOD 8021B: VOLATILES** Analyst: KMN Benzene ND 5/25/2023 2:37:00 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 5/25/2023 2:37:00 PM Ethylbenzene ND 0.049 mg/Kg 1 5/25/2023 2:37:00 PM Xylenes, Total ND 0.097 mg/Kg 5/25/2023 2:37:00 PM 1 Surr: 4-Bromofluorobenzene 84.5 39.1-146 %Rec 1 5/25/2023 2:37:00 PM **EPA METHOD 300.0: ANIONS** Analyst: SNS Chloride mg/Kg ND 60 20 5/25/2023 3:23:15 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

Page 5 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: 2305A96 30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: MB-75165 SampType: MBLK TestCode: EPA Method 300.0: Anions

PBS Client ID: Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520086 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75165 SampType: LCS TestCode: EPA Method 300.0: Anions

LCSS Client ID: Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520088 Units: mg/Kg

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

Chloride 14 15.00 94.2 110

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

Page 6 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305A96**

30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

| Sample ID: | 2305A96-001AMS | MS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | | | | | |
|---|---|---|--|--|-----------------------|---|---|--|------------|--------------------------|------|
| Client ID: | SS01B-0' | Batch | ID: 75 1 | 110 | F | RunNo: 90 | 6945 | | | | |
| Prep Date: | 5/22/2023 | Analysis Da | ate: 5/ 2 | 24/2023 | 9 | SeqNo: 3 | 518228 | Units: mg/K | (g | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range C | Organics (DRO) | 39 | 8.9 | 44.48 | 8.030 | 70.1 | 54.2 | 135 | | | |
| Surr: DNOP | | 4.0 | | 4.448 | | 89.4 | 69 | 147 | | | |
| Sample ID: | 2305A96-001AMSD | SampT | ype: MS | SD | Tes | tCode: EF | PA Method | 8015M/D: Die | sel Range | Organics | |
| Client ID: | SS01B-0' | Batch | ID: 75 1 | 110 | F | RunNo: 90 | 6945 | | | | |
| Prep Date: | 5/22/2023 | Analysis Da | ate: 5/ 2 | 24/2023 | 9 | SeqNo: 3 | 518229 | Units: mg/K | (g | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range C | Organics (DRO) | 37 | 8.5 | 42.34 | 8.030 | 67.4 | 54.2 | 135 | 7.00 | 29.2 | |
| Surr: DNOP | | 3.4 | | 4.234 | | 79.9 | 69 | 147 | 0 | 0 | |
| | | | | | | | | | | | |
| Sample ID: | LCS-75110 | SampT | ype: LC | S | Tes | tCode: EF | PA Method | 8015M/D: Die | sel Range | Organics | |
| | LCS-75110 LCSS | | ype: LC ID: 75 1 | | | tCode: EF RunNo: 9 (| | 8015M/D: Die | sel Range | Organics | |
| | | | ID: 75 1 | 110 | F | | 6945 | 8015M/D: Die | J | Organics | |
| Client ID: | LCSS | Batch | ID: 75 1 | 110 23/2023 | F | RunNo: 90 | 6945 | | J | Organics RPDLimit | Qual |
| Client ID: Prep Date: | LCSS 5/22/2023 | Batch Analysis Da | ID: 75 1 ate: 5/ 2 | 110 23/2023 | F | RunNo: 90 SeqNo: 3 | 5945 518232 | Units: mg/K | (g | J | Qual |
| Client ID: Prep Date: Analyte | LCSS 5/22/2023 | Batch Analysis Da Result | ID: 75 1 ate: 5/ 2 | 110 23/2023 SPK value | F S SPK Ref Val | RunNo: 90 SeqNo: 33 %REC | 5945 518232 LowLimit | Units: mg/K HighLimit | (g | J | Qual |
| Client ID: Prep Date: Analyte Diesel Range C | LCSS 5/22/2023 Organics (DRO) | Batch Analysis Da Result 49 | ID: 75 1 ate: 5 /2 PQL 10 | 23/2023 SPK value 50.00 5.000 | SPK Ref Val | RunNo: 96 SeqNo: 38 %REC 98.8 101 | 5945 518232 LowLimit 61.9 69 | Units: mg/K HighLimit | (g %RPD | RPDLimit | Qual |
| Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP Sample ID: | LCSS 5/22/2023 Organics (DRO) | Batch Analysis Da Result 49 5.0 SampTy | ID: 75 1 ate: 5 /2 PQL 10 | 23/2023 SPK value 50.00 5.000 | SPK Ref Val 0 | RunNo: 96 SeqNo: 38 %REC 98.8 101 | 5945 518232 LowLimit 61.9 69 PA Method | Units: mg/K HighLimit 130 147 | (g %RPD | RPDLimit | Qual |
| Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP Sample ID: | LCSS 5/22/2023 Organics (DRO) MB-75110 | Batch Analysis Da Result 49 5.0 SampTy | ID: 75 4 ate: 5 /2 PQL 10 ype: ME ID: 75 4 | SPK value 50.00 5.000 5.000 | SPK Ref Val 0 | RunNo: 96 SeqNo: 38 %REC 98.8 101 stCode: EF | 5945 518232 LowLimit 61.9 69 PA Method | Units: mg/K HighLimit 130 147 | %RPD | RPDLimit | Qual |
| Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP Sample ID: Client ID: | LCSS 5/22/2023 Organics (DRO) MB-75110 PBS | Batch Analysis Da Result 49 5.0 SampTy Batch | ID: 75 4 ate: 5 /2 PQL 10 ype: ME ID: 75 4 | SPK value 50.00 5.000 3LK 110 23/2023 | SPK Ref Val 0 | RunNo: 96 SeqNo: 3: %REC 98.8 101 stCode: EF RunNo: 96 | 5945 518232 LowLimit 61.9 69 PA Method | Units: mg/K HighLimit 130 147 8015M/D: Die | %RPD | RPDLimit | Qual |

| Sample ID: LCS-75133 | SampT | ype: LC | S | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | | | | | |
|-----------------------------|------------|------------------|-----------|---|-----------|----------|-------------|------|----------|------|--|--|--|
| Client ID: LCSS | Batch | n ID: 751 | 133 | F | RunNo: 97 | 7001 | | | | | | | |
| Prep Date: 5/23/2023 | Analysis D | oate: 5/2 | 24/2023 | 5 | SeqNo: 3 | 519507 | Units: mg/K | g | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | | | |
| Diesel Range Organics (DRO) | 57 | 10 | 50.00 | 0 | 114 | 61.9 | 130 | | | | | | |
| Surr: DNOP | 6.2 | | 5.000 | | 124 | 69 | 147 | | | | | | |

Qualifiers:

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

Motor Oil Range Organics (MRO)

Surr: DNOP

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

ND

8.1

50

10.00

B Analyte detected in the associated Method Blank

80.8

147

69

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 7 of 11

Hall Environmental Analysis Laboratory, Inc.

ND

ND

9.4

10

50

10.00

30-May-23

2305A96

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

| Sample ID: MB-75133 | SampType: MBLK | TestCode: EPA Method | 8015M/D: Diesel Range Organics |
|--------------------------------|--------------------------|---------------------------|--------------------------------|
| Client ID: PBS | Batch ID: 75133 | RunNo: 97001 | |
| Prep Date: 5/23/2023 | Analysis Date: 5/24/2023 | SeqNo: 3519510 | Units: mg/Kg |
| Analyte | Result PQL SPK value | SPK Ref Val %REC LowLimit | HighLimit %RPD RPDLimit Qual |
| Diesel Range Organics (DRO) | ND 10 | | |
| Motor Oil Range Organics (MRO) | ND 50 | | |
| Surr: DNOP | 9.5 10.00 | 94.9 69 | 147 |
| Sample ID: LCS-75177 | SampType: LCS | TestCode: EPA Method | 8015M/D: Diesel Range Organics |
| Client ID: LCSS | Batch ID: 75177 | RunNo: 97035 | |
| Prep Date: 5/25/2023 | Analysis Date: 5/25/2023 | SeqNo: 3521100 | Units: mg/Kg |
| Analyte | Result PQL SPK value | SPK Ref Val %REC LowLimit | HighLimit %RPD RPDLimit Qual |
| Diesel Range Organics (DRO) | 46 10 50.00 | 0 92.0 61.9 | 130 |
| Surr: DNOP | 4.4 5.000 | 87.2 69 | 147 |
| Sample ID: MB-75177 | SampType: MBLK | TestCode: EPA Method | 8015M/D: Diesel Range Organics |
| Client ID: PBS | Batch ID: 75177 | RunNo: 97035 | |
| Prep Date: 5/25/2023 | Analysis Date: 5/25/2023 | SeqNo: 3521102 | Units: mg/Kg |
| Analyte | Result PQL SPK value | SPK Ref Val %REC LowLimit | HighLimit %RPD RPDLimit Qual |

Qualifiers:

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

Diesel Range Organics (DRO)

Surr: DNOP

Motor Oil Range Organics (MRO)

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- B Analyte detected in the associated Method Blank

94.1

69

147

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 8 of 11

Hall Environmental Analysis Laboratory, Inc.

2305A96 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

| Project: Shugart | West 19 Federal C1 | ВН | | | | | | | |
|-------------------------------|------------------------|-----------|-------------|------------------|----------|--------------|------------|----------|------|
| Sample ID: Ics-75127 | SampType: LCS | ; | Tes | tCode: EP | A Method | 8015D: Gasol | line Range | | |
| Client ID: LCSS | Batch ID: 7512 | 27 | F | tunNo: 96 | 974 | | | | |
| Prep Date: 5/23/2023 | Analysis Date: 5/24 | 4/2023 | 5 | SeqNo: 35 | 19391 | Units: mg/K | g | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 23 5.0 | 25.00 | 0 | 92.3 | 70 | 130 | | | |
| Surr: BFB | 5000 | 1000 | | 496 | 15 | 244 | | | S |
| Sample ID: mb-75127 | SampType: MBL | _K | Tes | tCode: EP | A Method | 8015D: Gasol | line Range | | |
| Client ID: PBS | Batch ID: 7512 | 27 | F | tunNo: 96 | 974 | | | | |
| Prep Date: 5/23/2023 | Analysis Date: 5/24 | 4/2023 | S | SeqNo: 35 | 19392 | Units: mg/K | g | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND 5.0 | | | | | | | | |
| Surr: BFB | 910 | 1000 | | 90.8 | 15 | 244 | | | |
| Sample ID: mb-75105 | SampType: MBL | _K | Tes | tCode: EP | A Method | 8015D: Gasol | line Range | | |
| Client ID: PBS | Batch ID: 751 (|)5 | F | tunNo: 96 | 984 | | | | |
| Prep Date: 5/22/2023 | Analysis Date: 5/24 | 4/2023 | \$ | SeqNo: 35 | 19769 | Units: mg/K | g | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND 5.0 | | | | | | | | |
| Surr: BFB | 850 | 1000 | | 84.6 | 15 | 244 | | | |
| Sample ID: Ics-75105 | SampType: LCS | ; | Tes | tCode: EP | A Method | 8015D: Gasol | line Range | | |
| Client ID: LCSS | Batch ID: 751 (|)5 | F | tunNo: 96 | 984 | | | | |
| Prep Date: 5/22/2023 | Analysis Date: 5/24 | 4/2023 | S | SeqNo: 35 | 19770 | Units: mg/K | g | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 22 5.0 | 25.00 | 0 | 88.6 | 70 | 130 | | | _ |
| Surr: BFB | 1900 | 1000 | | 191 | 15 | 244 | | | |
| | | | | | | | | | |

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 Quantitative Limit
- 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 9 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305A96**

30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

| Sample ID: LCS-75127 | SampT | ype: LC | S | Tes | tCode: EF | PA Method | 8021B: Volati | les | | |
|----------------------------|------------|-------------------|-----------|-------------|-----------|-----------|---------------|------|----------|------|
| Client ID: LCSS | Batch | n ID: 75 1 | 127 | F | RunNo: 90 | 6974 | | | | |
| Prep Date: 5/23/2023 | Analysis D | ate: 5/ 2 | 24/2023 | 5 | SeqNo: 3 | 519397 | Units: mg/K | g | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.85 | 0.025 | 1.000 | 0 | 85.2 | 70 | 130 | | | |
| Toluene | 0.88 | 0.050 | 1.000 | 0 | 87.9 | 70 | 130 | | | |
| Ethylbenzene | 0.89 | 0.050 | 1.000 | 0 | 89.0 | 70 | 130 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.000 | 0 | 89.2 | 70 | 130 | | | |
| Surr: 4-Bromofluorobenzene | 0.99 | | 1.000 | | 99.1 | 39.1 | 146 | | | |
| Sample ID: mb-75127 | SampT | ype: ME | BLK | Tes | tCode: EF | PA Method | 8021B: Volati | les | | |
| Client ID: PBS | Batch | 1D: 75 1 | 127 | F | RunNo: 90 | 6974 | | | | |
| Prep Date: 5/23/2023 | Analysis D | ate: 5/ 2 | 24/2023 | 9 | SeqNo: 3 | 519398 | 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 | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.96 | | 1.000 | | 95.9 | 39.1 | 146 | | | |
| Sample ID: mb-75105 | SampT | уре: МЕ | BLK | Tes | tCode: EF | PA Method | 8021B: Volati | les | | |
| Client ID: PBS | Batch | 1D: 75 1 | 105 | F | RunNo: 90 | 6984 | | | | |
| Prep Date: 5/22/2023 | Analysis D | ate: 5/ 2 | 24/2023 | 9 | SeqNo: 3 | 519793 | 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 | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.84 | | 1.000 | | 84.2 | 39.1 | 146 | | | |
| Sample ID: Ics-75105 | SampT | ype: LC | s | Tes | tCode: EF | PA Method | 8021B: Volati | les | | |

Qualifiers:

Client ID:

Prep Date:

Analyte

Benzene

Toluene

Ethylbenzene

Xylenes, Total

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

Surr: 4-Bromofluorobenzene

LCSS

5/22/2023

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

Batch ID: 75105

Analysis Date: 5/24/2023

PQL

0.025

0.050

0.050

0.10

Result

0.85

0.84

0.83

2.5

0.86

B Analyte detected in the associated Method Blank

RunNo: 96984

%REC

84.9

84.5

82.5

82.2

86.2

SeqNo: 3519794

LowLimit

70

70

70

70

39.1

Units: mg/Kg

130

130

130

130

146

%RPD

RPDLimit

Qual

HighLimit

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

0

0

0

0

SPK value SPK Ref Val

1.000

1.000

1.000

3.000

1.000

Page 10 of 11

Hall Environmental Analysis Laboratory, Inc.

2305A96 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75127 SampType: MBLK TestCode: EPA Method 8021B: Volatiles
Client ID: PBS Batch ID: 75127 RunNo: 97020

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3520527 Units: mg/Kg

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

 Benzene
 ND
 0.025

 Toluene
 ND
 0.050

 Ethylbenzene
 ND
 0.050

 Xylenes, Total
 ND
 0.10

Surr: 4-Bromofluorobenzene 0.86 1.000 86.1 39.1 146

| Sample ID: Ics-75127 | SampT | ype: LC | s | Tes | | | | | | | | | |
|----------------------------|------------|------------------|-----------|-------------|-----------|----------|--------------|------|----------|------|--|--|--|
| Client ID: LCSS | Batch | n ID: 751 | 27 | F | RunNo: 97 | 7020 | | | | | | | |
| Prep Date: 5/23/2023 | Analysis D | Date: 5/2 | 25/2023 | 9 | SeqNo: 3 | 520528 | Units: mg/Kg | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | | | |
| Benzene | 0.87 | 0.025 | 1.000 | 0 | 86.7 | 70 | 130 | | | | | | |
| Toluene | 0.87 | 0.050 | 1.000 | 0 | 86.5 | 70 | 130 | | | | | | |
| Ethylbenzene | 0.84 | 0.050 | 1.000 | 0 | 84.5 | 70 | 130 | | | | | | |
| Xylenes, Total | 2.5 | 0.10 | 3.000 | 0 | 83.9 | 70 | 130 | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.87 | | 1.000 | | 86.5 | 39.1 | 146 | | | | | | |

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Released to Imaging: 7/31/2023 10:26:11 AM

| LABORATORY | Website: www | hallenviron | mental.com | | | | |
|--|---------------------------------|-------------|--------------|-----------|----------------|-------------|------------|
| Client Name: Marathon Oil Company | Work Order Numb | er: 2305A | 96 | | RcptNo | o: 1 | |
| Received By: Tracy Casarrubias | 5/20/2023 9:30:00 A | λM | | | | | |
| Completed By: Tracy Casarrubias | 5/20/2023 10:59:56 | AM | | | | | |
| Reviewed By: 745/22/23 | | | | | | | |
| Chain of Custody | | | | | | | |
| 1. Is Chain of Custody complete? | | Yes [| N | o 🗹 | Not Present | | |
| 2. How was the sample delivered? | | Courie | <u>[</u> | | | | |
| Log In 3. Was an attempt made to cool the samples | ? | Yes 🖢 | Z N | • | na 🗌 | | |
| 4. Were all samples received at a temperature | e of >0° C to 6.0°C | Yes | N | o 🗆 | NA 🗆 | | |
| 5. Sample(s) in proper container(s)? | | Yes 1 | N | o 🗆 | | | |
| 6. Sufficient sample volume for indicated testi | (s)? | Yes 🛚 | d No | o 🗌 | | | |
| 7 Are samples (except VOA and ONG) prope | | Yes 🛚 | Ž No | o 🗌 | | | |
| 8. Was preservative added to bottles? | | Yes [|] No | · 🗸 | NA 🗌 | | |
| 9. Received at least 1 vial with headspace <1. | /4" for AQ VOA? | Yes [|] N o | o 🗆 | NA 🗹 | | |
| 10. Were any sample containers received broken | ken? | Yes | N | o 🗹 | # of preserved | | |
| 11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | | Yes 🛚 | Z No | o 🗌 | | or >12 unle | ess noted) |
| 12. Are matrices correctly identified on Chain of | of Custody? | Yes 🛚 | <u>l</u> No | o 🗌 | Adjusted? | | |
| 13. Is it clear what analyses were requested? | | Yes 🛚 | Z No | o 🗌 | | | - 12 - 12 |
| 14. Were all holding times able to be met? (If no, notify customer for authorization.) | | Yes 🛚 | e No | | Checked by: | THIL | 5/16/2. |
| Special Handling (if applicable) | | | | | | | |
| 15. Was client notified of all discrepancies with | h this order? | Yes [| □ и | o 🗌 | NA 🗸 | | |
| Person Notified: | Date: | | | - | | | |
| By Whom: | Via: | eMail | Phone [| Fax | ☐ In Person | | |
| Regarding: | | | | | | | |
| Client Instructions: Mailing address | is missing on COC- TM | IC 5/20/23 | | | | | |
| 16. Additional remarks: | | | | | | | |
| Client did not relinquish chain of cus | tody | | | | | | |
| 17. Cooler Information | | | ī a : | | | | |
| | Seal Intact Seal No les Yogi | Seal Dat | e Signe | а Ву | | | |
| 1 3.0 0000 1 | es Yogi | | | | _1 | | |

| HALL ENVIRONME Mag 46 & of 88 | ANALYSIS LABORATORY | www.hallenvironmental.com | 4901 Hawkins NE - Albuquerque, NM 87109 | Tel. 505-345-3975 Fax 505-345-4107 | equest | OS | O [¢] " | 30 Z | 808 4.1) - 82 NO | '°'()'''''''''''''''''''''''''''''''''' | cid bor 3310 Stel Stel MC MC | esti Neth 8 M Br, VO | 8081 P EDB (N RCRA (C) F, 1 8250 (3 8270 (3 | 7 | <i>Y</i> , | <i>y</i> : | X | ナ | | | | Remarks: Please cc msanjari@marathonoll.com, | agiovengo@ensolum.com and chinton@ensolum.com on results | | |
|--|------------------------|---|---|------------------------------------|------------------------------------|----------------------------------|------------------|-----------------------------|---------------------------|---|--|---|--|---------------|---------------|-------------------|--------------------|-------------------|--|--|--|--|---|--------------------|----------|
| | | | 4 | | | | | | | | | | X∃TB 08:H9T | 7 | 7 | 7 | 7 | ナナ | | | | Rema | agiov | > 5 | |
| Turn-Around Time: | Standard M Rush 5 Dawl | Pròject Name: Shugart West 19 Federal CTB H | Shugart West 19 Federal 8/Shugart West 19 Federal 9 | Project #: 03A2040004 | MO Cost Center: 60 29588000 | Project Manager: Ashley Giovengo | 575-988-0055 | agiovengo@ensolum.com | Sampler: Ashley Giovengo | | | Cooler Temp(including cF): 5.4-0.1:5.3~ | Container Type Preservative HEAL No. | 1 jar lce 001 | 1 jar lce 002 | 1 jar Ice 003 | 1 jar Ice 00 \ | 1 jar lce 605 | | | | Received by: Via: Date Time | 5/19/13 | Via: Count Date Ti | Sto. 13 |
| Received & Manny State 348 248 Singly Record | Marathon Oil Company | | | | | msaniari@marathonoil.com | | ☐ Level 4 (Full Validation) | ☐ Az Compliance | | | | Sample Name | 1 | SS02A-0' | SS03B-0, | SS04A-0' | SS05-0' | | | | Relinquished by: | | Relinquished by: | MAMMIN |
| viedzau | on Oil C | | On File | | 3-8753 | msania | | | A2 (| Other | | | Matrix | | | _ | တ | _ | | | | Reling | | Reling | |
| STY CO | Maratho | ınjari | dress: | | 575-988-8753 | #Xŧ | , ace | 2 2 2 2 | | : | vpe) | | Time | | - | <u> </u> | <u> </u> | - | | | | Time: | | Time: | ZZ ZZ |
| Received & O | Client: | Melodie Sanjari | Mailing Address: | | Dhone # | email or Fax#: | OA/OC Packade. | F.Standard | Accreditation | DEL AC | EDD (Type) | | Date | 5/17/2023 | 5/17/2023 | 5/17/2023 | 5/17/2023 | 5/17/2023 | | | | Date (2) | 05/09/2023 | Date: | Shir |

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



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

OrderNo.: 2305A97

May 30, 2023

Ashley Giovengo Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220

TEL: (575) 297-0956

FAX:

RE: Shugart West 19 Federal CTB H

Dear Ashley Giovengo:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/20/2023 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 Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2305A97

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/30/2023

CLIENT: Marathon Oil Company Client Sample ID: SS06D-0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 3:28:00 PM

 Lab ID:
 2305A97-001
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

Result **RL Qual Units** DF **Date Analyzed Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: PRD Diesel Range Organics (DRO) ND 10 mg/Kg 1 5/24/2023 9:38:25 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 5/24/2023 9:38:25 PM Surr: DNOP 105 69-147 %Rec 1 5/24/2023 9:38:25 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: KMN Gasoline Range Organics (GRO) ND 5/25/2023 4:04:00 PM 4.8 mg/Kg 1 Surr: BFB 91.5 15-244 %Rec 1 5/25/2023 4:04:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: KMN Benzene ND 5/25/2023 4:04:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 5/25/2023 4:04:00 PM Ethylbenzene ND 0.048 mg/Kg 1 5/25/2023 4:04:00 PM Xylenes, Total ND 0.096 mg/Kg 1 5/25/2023 4:04:00 PM Surr: 4-Bromofluorobenzene 88.2 39.1-146 %Rec 1 5/25/2023 4:04:00 PM **EPA METHOD 300.0: ANIONS** Analyst: SNS Chloride mg/Kg ND 60 20 5/25/2023 3:35:34 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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Analytical Report

Lab Order **2305A97**Date Reported: **5/30/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS07B-0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 12:05:00 PM

 Lab ID:
 2305A97-002
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

| Analyses | Result | RL Qua | al Units | DF | Date Analyzed |
|-------------------------------------|--------|----------|----------|----|----------------------|
| EPA METHOD 8015M/D: DIESEL RANGE OR | GANICS | | | | Analyst: PRD |
| Diesel Range Organics (DRO) | 11 | 9.9 | mg/Kg | 1 | 5/24/2023 9:49:20 PM |
| Motor Oil Range Organics (MRO) | ND | 49 | mg/Kg | 1 | 5/24/2023 9:49:20 PM |
| Surr: DNOP | 99.2 | 69-147 | %Rec | 1 | 5/24/2023 9:49:20 PM |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | Analyst: KMN |
| Gasoline Range Organics (GRO) | ND | 4.8 | mg/Kg | 1 | 5/25/2023 5:09:00 PM |
| Surr: BFB | 87.8 | 15-244 | %Rec | 1 | 5/25/2023 5:09:00 PM |
| EPA METHOD 8021B: VOLATILES | | | | | Analyst: KMN |
| Benzene | ND | 0.024 | mg/Kg | 1 | 5/25/2023 5:09:00 PM |
| Toluene | ND | 0.048 | mg/Kg | 1 | 5/25/2023 5:09:00 PM |
| Ethylbenzene | ND | 0.048 | mg/Kg | 1 | 5/25/2023 5:09:00 PM |
| Xylenes, Total | ND | 0.096 | mg/Kg | 1 | 5/25/2023 5:09:00 PM |
| Surr: 4-Bromofluorobenzene | 84.7 | 39.1-146 | %Rec | 1 | 5/25/2023 5:09:00 PM |
| EPA METHOD 300.0: ANIONS | | | | | Analyst: SNS |
| Chloride | 180 | 60 | mg/Kg | 20 | 5/25/2023 3:47:55 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

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

Page 2 of 11

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS08C-0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 3:41:00 PM

 Lab ID:
 2305A97-003
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed |
|--------------------------------------|--------|----------|----------|----|-----------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORG | GANICS | | | | Analyst: PRD |
| Diesel Range Organics (DRO) | 9.8 | 9.4 | mg/Kg | 1 | 5/24/2023 10:00:16 PM |
| Motor Oil Range Organics (MRO) | ND | 47 | mg/Kg | 1 | 5/24/2023 10:00:16 PM |
| Surr: DNOP | 106 | 69-147 | %Rec | 1 | 5/24/2023 10:00:16 PM |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | Analyst: KMN |
| Gasoline Range Organics (GRO) | ND | 4.9 | mg/Kg | 1 | 5/25/2023 6:58:00 PM |
| Surr: BFB | 90.3 | 15-244 | %Rec | 1 | 5/25/2023 6:58:00 PM |
| EPA METHOD 8021B: VOLATILES | | | | | Analyst: KMN |
| Benzene | ND | 0.024 | mg/Kg | 1 | 5/25/2023 6:58:00 PM |
| Toluene | ND | 0.049 | mg/Kg | 1 | 5/25/2023 6:58:00 PM |
| Ethylbenzene | ND | 0.049 | mg/Kg | 1 | 5/25/2023 6:58:00 PM |
| Xylenes, Total | ND | 0.097 | mg/Kg | 1 | 5/25/2023 6:58:00 PM |
| Surr: 4-Bromofluorobenzene | 85.6 | 39.1-146 | %Rec | 1 | 5/25/2023 6:58:00 PM |
| EPA METHOD 300.0: ANIONS | | | | | Analyst: SNS |
| Chloride | ND | 60 | mg/Kg | 20 | 5/25/2023 4:00:16 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
- 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 3 of 11

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS09-0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 10:23:00 AM

 Lab ID:
 2305A97-004
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

| Result | RL Qu | al Units | DF | Date Analyzed |
|--------|---------------------------------------|---|---|--|
| GANICS | | | | Analyst: PRD |
| 19 | 9.6 | mg/Kg | 1 | 5/24/2023 10:11:14 PM |
| ND | 48 | mg/Kg | 1 | 5/24/2023 10:11:14 PM |
| 108 | 69-147 | %Rec | 1 | 5/24/2023 10:11:14 PM |
| | | | | Analyst: KMN |
| ND | 4.8 | mg/Kg | 1 | 5/25/2023 7:19:00 PM |
| 90.9 | 15-244 | %Rec | 1 | 5/25/2023 7:19:00 PM |
| | | | | Analyst: KMN |
| ND | 0.024 | mg/Kg | 1 | 5/25/2023 7:19:00 PM |
| ND | 0.048 | mg/Kg | 1 | 5/25/2023 7:19:00 PM |
| ND | 0.048 | mg/Kg | 1 | 5/25/2023 7:19:00 PM |
| ND | 0.095 | mg/Kg | 1 | 5/25/2023 7:19:00 PM |
| 87.2 | 39.1-146 | %Rec | 1 | 5/25/2023 7:19:00 PM |
| | | | | Analyst: SNS |
| 84 | 60 | mg/Kg | 20 | 5/25/2023 4:12:37 AM |
| | MD 108 ND 90.9 ND ND ND ND ND ND 87.2 | MD 4.8 90.9 15-244 ND 0.024 ND 0.048 ND 0.095 87.2 39.1-146 | ANICS 19 9.6 mg/Kg ND 48 mg/Kg 108 69-147 %Rec ND 4.8 mg/Kg 90.9 15-244 %Rec ND 0.024 mg/Kg ND 0.048 mg/Kg ND 0.048 mg/Kg ND 0.048 mg/Kg ND 0.095 mg/Kg 87.2 39.1-146 %Rec | ANICS 19 9.6 mg/Kg 1 ND 48 mg/Kg 1 108 69-147 %Rec 1 ND 4.8 mg/Kg 1 90.9 15-244 %Rec 1 ND 0.024 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.095 mg/Kg 1 87.2 39.1-146 %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
- 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

rting Limit Page 4 of 11

Date Reported: 5/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS10-0'

 Project:
 Shugart West 19 Federal CTB H
 Collection Date: 5/17/2023 10:29:00 AM

 Lab ID:
 2305A97-005
 Matrix: SOIL
 Received Date: 5/20/2023 9:30:00 AM

| Analyses | Result | RL Qua | l Units | DF | Date Analyzed |
|---------------------------------------|--------|----------|---------|----|-----------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGA | ANICS | | | | Analyst: PRD |
| Diesel Range Organics (DRO) | ND | 9.7 | mg/Kg | 1 | 5/24/2023 10:22:12 PM |
| Motor Oil Range Organics (MRO) | ND | 48 | mg/Kg | 1 | 5/24/2023 10:22:12 PM |
| Surr: DNOP | 109 | 69-147 | %Rec | 1 | 5/24/2023 10:22:12 PM |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | Analyst: KMN |
| Gasoline Range Organics (GRO) | ND | 4.9 | mg/Kg | 1 | 5/25/2023 7:41:00 PM |
| Surr: BFB | 89.7 | 15-244 | %Rec | 1 | 5/25/2023 7:41:00 PM |
| EPA METHOD 8021B: VOLATILES | | | | | Analyst: KMN |
| Benzene | ND | 0.024 | mg/Kg | 1 | 5/25/2023 7:41:00 PM |
| Toluene | ND | 0.049 | mg/Kg | 1 | 5/25/2023 7:41:00 PM |
| Ethylbenzene | ND | 0.049 | mg/Kg | 1 | 5/25/2023 7:41:00 PM |
| Xylenes, Total | ND | 0.097 | mg/Kg | 1 | 5/25/2023 7:41:00 PM |
| Surr: 4-Bromofluorobenzene | 86.4 | 39.1-146 | %Rec | 1 | 5/25/2023 7:41:00 PM |
| EPA METHOD 300.0: ANIONS | | | | | Analyst: SNS |
| Chloride | ND | 60 | mg/Kg | 20 | 5/25/2023 4:49:39 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

Page 5 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305A97**

30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: MB-75165 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520086 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75165 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 75165 RunNo: 97007

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520088 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 94.2 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

Page 6 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: 2305A97 30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

| Sample ID: 2305A97-001AN | iS Samp∃ | Гуре: М. | 3 | Tes | tCode: EF | PA Method | 8015M/D: Die | sel Range | Organics | |
|-----------------------------|------------------|-------------------|-----------|-------------|-------------------|-----------|--------------|-----------|----------|------|
| Client ID: SS06D-0' | Batcl | h ID: 75 ′ | 146 | F | RunNo: 97 | 7001 | | | | |
| Prep Date: 5/24/2023 | Analysis [| Date: 5/ 2 | 25/2023 | ; | SeqNo: 3 | 519455 | Units: mg/k | (g | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 42 | 9.6 | 47.89 | 0 | 86.7 | 54.2 | 135 | | | |
| Surr: DNOP | 4.7 | | 4.789 | | 98.5 | 69 | 147 | | | |
| Sample ID: 2305A97-001AN | ∥SD Samp∃ | Гуре: М. | SD | Tes | stCode: EF | PA Method | 8015M/D: Die | sel Range | Organics | |
| Client ID: SS06D-0' | Batcl | h ID: 75 ′ | 146 | F | RunNo: 97 | 7001 | | | | |
| Prep Date: 5/24/2023 | Analysis [| Date: 5/ 2 | 25/2023 | ; | SeqNo: 3 | 519456 | Units: mg/k | (g | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 43 | 9.6 | 47.76 | 0 | 89.1 | 54.2 | 135 | 2.44 | 29.2 | |
| Surr: DNOP | 4.8 | | 4.776 | | 99.9 | 69 | 147 | 0 | 0 | |
| Sample ID: LCS-75133 | Samp1 | Гуре: LC | s | Tes | stCode: EF | PA Method | 8015M/D: Die | sel Range | Organics | |
| Client ID: LCSS | Data | h ID: 75 | 100 | , | DunNo: n | 7004 | | _ | - | |

| · · | | | | | | | | | • | • | | |
|------------|-----------|-------------|---------------|-----------|-------------|----------|----------|-------------|------|----------|------|--|
| Client ID: | LCSS | Batch I | D: 75 | 133 | F | RunNo: 9 | 7001 | | | | | |
| Prep Date: | 5/23/2023 | Analysis Da | te: 5/ | 24/2023 | 5 | SeqNo: 3 | 519507 | Units: %Rec | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Surr: DNOP | 1 | 6.2 | | 5.000 | - | 124 | 69 | 147 | | | | |

| Sample ID: LCS-75146 | SampT | ype: LC | S | Tes | tCode: EF | PA Method | 8015M/D: Die | sel Range | Organics | |
|-----------------------------|------------|-------------------|-----------|-------------|-----------|-----------|--------------|-----------|----------|------|
| Client ID: LCSS | Batch | n ID: 75 1 | 146 | F | RunNo: 97 | 7001 | | | | |
| Prep Date: 5/24/2023 | Analysis D | oate: 5/2 | 24/2023 | 5 | SeqNo: 3 | 519508 | Units: mg/K | g | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 45 | 10 | 50.00 | 0 | 90.6 | 61.9 | 130 | | | |
| Surr: DNOP | 5.0 | | 5.000 | | 100 | 69 | 147 | | | |

| Sample ID: MB-75133 | SampType: MBLK | TestCode: EPA Method | 8015M/D: Diesel Range Organics |
|----------------------|--------------------------|---------------------------|--------------------------------|
| Client ID: PBS | Batch ID: 75133 | RunNo: 97001 | |
| Prep Date: 5/23/2023 | Analysis Date: 5/24/2023 | SeqNo: 3519510 | Units: %Rec |
| Analyte | Result PQL SPK value | SPK Ref Val %REC LowLimit | HighLimit %RPD RPDLimit Qual |
| Surr: DNOP | 9.5 10.00 | 94.9 69 | 147 |

| Sample ID: MB-75146 | SampT | уре: МЕ | BLK | Tes | tCode: EF | PA Method | 8015M/D: Die | sel Range | Organics | |
|-----------------------------|------------|------------------|-----------|-------------|------------------|-----------|--------------|-----------|----------|------|
| Client ID: PBS | Batch | ID: 75 1 | 146 | F | RunNo: 97 | 7001 | | | | |
| Prep Date: 5/24/2023 | Analysis D | ate: 5/ 2 | 24/2023 | 9 | SeqNo: 3 | 519511 | 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 Range Organics (MRO) ND 50

Qualifiers:

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

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Hall Environmental Analysis Laboratory, Inc.

2305A97 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: MB-75146 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 75146 RunNo: 97001

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3519511 Units: mg/Kg

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

Surr: DNOP 11 10.00 106 69 147

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

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 8 of 11

Hall Environmental Analysis Laboratory, Inc.

30-May-23

2305A97

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75132 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: **PBS** Batch ID: **75132** RunNo: **97020**

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3521524 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 900 1000 90.2 15 244

Sample ID: Ics-75132 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 75132 RunNo: 97020

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3521525 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 20 25.00 70 Surr: BFB 1900 1000 190 15 244

Sample ID: 2305A97-001ams SampType: MS TestCode: EPA Method 8015D: Gasoline Range

Client ID: **\$\$06D-0'** Batch ID: **75132** RunNo: **97020**

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3521527 Units: mg/Kg

SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual Gasoline Range Organics (GRO) 21 4.8 23.95 86.8 70 130 Surr: BFB 2000 957.9 204 15 244

Sample ID: 2305A97-001amsd SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: **\$\$06D-0'** Batch ID: **75132** RunNo: **97020**

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3521528 Units: mg/Kg

Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 22 4.8 24.25 89.8 70 130 4.74 20 Surr: BFB 1900 969.9 201 15 244 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

Page 9 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: 2305A97 30-May-23

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: mb-75127 SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: 75127 RunNo: 97020

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3520527 Units: %Rec

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

Surr: 4-Bromofluorobenzene 0.86 1.000 86.1 39.1 146

Sample ID: Ics-75127 SampType: LCS TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Batch ID: 75127 RunNo: 97020

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3520528 Units: %Rec

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

Surr: 4-Bromofluorobenzene 0.87 1.000 86.5 39.1 146

Sample ID: mb-75132 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: PBS Batch ID: 75132 RunNo: 97020

Prep Date: Analysis Date: 5/25/2023 SeqNo: 3521548 Units: mg/Kg 5/23/2023

POI SPK value SPK Ref Val %REC %RPD **RPDLimit** Qual Analyte Result I owl imit HighLimit

ND 0.025 Benzene Toluene ND 0.050 Ethylbenzene ND 0.050 Xylenes, Total ND 0.10

Surr: 4-Bromofluorobenzene 0.86 1.000 86.2 39.1 146

Sample ID: Ics-75132 SampType: LCS TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Batch ID: 75132 RunNo: 97020

Prep Date: Analysis Date: 5/25/2023 SeqNo: 3521549 Units: mg/Kg

5/23/2023 SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual Benzene 0.87 0.025 1.000 0 86.9 70 130 1.000 0 87.1 70 Toluene 0.87 0.050 130 Ethylbenzene 0.050 1.000 0 85.6 70 0.86 130 Xylenes, Total 3.000 0 85.1 70 2.6 0.10 130 Surr: 4-Bromofluorobenzene 0.87 1.000 86.8 39.1 146

Sample ID: 2305A97-002ams SampType: MS TestCode: EPA Method 8021B: Volatiles

Client ID: SS07B-0' Batch ID: 75132 RunNo: 97020

| Prep Date: 5/23/2023 | Analysis [| Date: 5/ 2 | 25/2023 | \$ | SeqNo: 3 | 521552 | Units: mg/K | g | | |
|----------------------|------------|-------------------|-----------|-------------|----------|----------|-------------|------|----------|------|
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.81 | 0.024 | 0.9775 | 0 | 83.4 | 70 | 130 | | | |
| Toluene | 0.83 | 0.049 | 0.9775 | 0 | 85.0 | 70 | 130 | | | |
| Ethylbenzene | 0.83 | 0.049 | 0.9775 | 0 | 84.6 | 70 | 130 | | | |
| Xylenes, Total | 2.5 | 0.098 | 2.933 | 0 | 83.8 | 70 | 130 | | | |

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

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Hall Environmental Analysis Laboratory, Inc.

2305A97 30-May-23

WO#:

Client: Marathon Oil Company

Project: Shugart West 19 Federal CTB H

Sample ID: 2305A97-002ams SampType: MS TestCode: EPA Method 8021B: Volatiles

Client ID: **\$\$07B-0'** Batch ID: **75132** RunNo: **97020**

Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3521552 Units: mq/Kq

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

Surr: 4-Bromofluorobenzene 0.86 0.9775 87.7 39.1 146

Sample ID: 2305A97-002amsd SampType: MSD TestCode: EPA Method 8021B: Volatiles Client ID: SS07B-0' Batch ID: 75132 RunNo: 97020 Prep Date: 5/23/2023 Analysis Date: 5/25/2023 SeqNo: 3521553 Units: mg/Kg SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result PQL LowLimit Qual Benzene 0.83 0.024 0.9718 0 85.4 70 130 1.82 20 Toluene 0.85 0.049 0.9718 0 87.5 70 130 2.31 20 0 Ethylbenzene 0.85 0.049 0.9718 87.1 70 130 2.36 20 Xylenes, Total 2.5 0.097 2.915 0 86.3 70 130 2.41 20 0 Surr: 4-Bromofluorobenzene 0.85 0.9718 88.0 39.1 146 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

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ENVIRONMENTAL

ANALYSIS

LABORATORY

Hall Environmental Analysis Laboratory 4901 Hawkins NE

Released to Imaging: 7/31/2023 10:26:11 AM

Albuquerque. NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

| Sample Log-In | Check Lis |
|---------------|-----------|
|---------------|-----------|

| Client Name: Marathon | Oil Company | Work | Order Num | ber: 2308 | 5A97 | | | Rc | ptNo: 1 | |
|--|--------------------|---------------|-------------|------------|----------|-----------|---------------|----------------------------|----------|--------------|
| Received By: Tracy Ca | sarrubias | 5/20/20 | 23 9:30:00 | AM | | | | | | |
| Completed By: Tracy Ca | sarrubias | 5/20/20 | 23 11:06:39 | AM | | | | | | |
| Reviewed By: 7N 5 | 22/23 | | | | | | | | | |
| Chain of Custody | | | | | | | | | | |
| 1. Is Chain of Custody comp | olete? | | | Yes | | No | V | Not Present | | |
| 2. How was the sample deli | vered? | | | Cou | rier | | | | | |
| Log In | | | | | | | | | | |
| 3. Was an attempt made to | cool the samples | ? | | Yes | V | No | | NA | | |
| 4. Were all samples receive | d at a temperatur | e of >0°C | to 6.0°C | Yes | V | No | | NA | | |
| 5. Sample(s) in proper conta | ainer(s)? | | | Yes | ✓ | No | | | | |
| 6. Sufficient sample volume | for indicated test | (s)? | | Yes | V | No [| | | | |
| 7. Are samples (except VOA | and ONG) prope | erly preserve | ed? | Yes | V | No [| | | | |
| 8. Was preservative added t | o bottles? | | | Yes | | No [| ✓ | NA | | |
| 9. Received at least 1 vial w | ith headspace <1 | /4" for AQ \ | OA? | Yes | | No [| | NA | ✓ | |
| 10. Were any sample contain | ers received brol | ken? | | Yes | | No | V | # of preserved | | |
| 11. Does paperwork match bo (Note discrepancies on ch | | | | Yes | ✓ | No [| | bottles checked for pH: | | nless noted) |
| 12. Are matrices correctly ide | | of Custody? | | Yes | V | No [| | Adjusted | ? | |
| 13. Is it clear what analyses w | | | | Yes | V | No [| | | | -1 /- |
| 14. Were all holding times ab (If no, notify customer for | | | | Yes | V | No [|]/ | Checked I | by: TML | 5/20/0 |
| Special Handling (if ap | · | | | | | | | | | |
| 15. Was client notified of all of | discrepancies wit | h this order | > | Yes | | No | | NA | ✓ | |
| Person Notified: | | V | Date | | | | ¥ | | | |
| By Whom: | "Selections | | Via: | ☐ еМа | ail [|] Phone [| Fax | ☐ In Person | | |
| Regarding: | | | | | | | luinensus pin | | - | |
| Client Instructions: | Mailing address | is missing | on COC- TN | /IC 5/20/2 | 3 | | | | _ | |
| 16. Additional remarks: | | | | | | | | | | |
| Client did not reling | uish chain of cus | tody | | | | | | | | |
| 17. Cooler Information | | | | | | | | | | |
| Cooler No Temp °C | Condition | Seal Intact | Seal No | Seal D | ate | Signed B | y | | | |
| 1 5.3 | Good Y | es | Yogi | | | | | | | |

| Received & D | STILLS | Pasids | Received & health was pasted in Record | Turn-Around Time: | äi | 1301.6.6 | | HALI | ENVI | RONI | HALL ENVIRONMENTAL OF 88 | of 88 |
|---------------------|--------------|----------------------|---|-----------------------------|-----------------------|---|-------------------------|---|---|----------------------|--------------------------|---------|
| Client: | Maratho | Marathon Oil Company | npany | Standard | K Rush | 5 DAVI | | ANA | LYSIS | LABO | ANALYSIS LABORATORY | * |
| Melodie Sanjari | ınjari | | | Project Name: | Shugart West | Shugart West 19 Federal CTB H | | W | www.hallenvironmental.com | onmenta | al.com | |
| Mailing Address: | dress: | On File | | 9 | Federal 8/Shu | Federal 8/Shugart West 19 Federal 9 | 4901 | 4901 Hawkins NE - | | iquerque | Albuquerque, NM 87109 | _ |
| | | | | Project #: | 03A2040004 | | Tel. | 505-345-3975 | | 3x 505- | Fax 505-345-4107 | 1 |
| Phone #: | 575-988-8753 | -8753 | | MO Cost Center: | 0029588000 | (3 | | Ā | Analysis Request | quest | | |
| email or Fax# | #XE | msanjari | msanjari@marathonoil.com | | Ashley Giovengo | obu | КО) | | os | | uəs | |
| QA/QC Package: | kage: | | | | 575-988-0055 | 2 | W / | | | | ed∧\ | |
| Standard |) p | | ☐ Level 4 (Full Validation) | | agiovengo@ensolum.com | <u>ansolum.com</u> | ОЯ | (| | | дuə | |
| Accreditation: | on: | □ Az Co | □ Az Compliance | Sampler: | Ashley Giovengo | oßu | a / s | (1.4 | | (\ | , LGS | |
| □ NELAC | | □ Other | _ | On Ice. | r Yes | I No uso | ОЯ | 09 | SI | ∀ O/ | ٦) u | |
| □ EDD (Type) | ype) | | | # of Coolers: | 7 | | 9)(| pol | | | orn | |
| | | | | Cooler Temp(Includi | Including CF): 5-4-0 | -0.1: 5.3- | 191 | 1jəl | M 8 | | ìilo | |
| Date | Time | Matrix | Sample Name | Container Type and # | Preservative Type | HEAL NO. | TPH:80 | 8081 PA EDB (N | RCRA | 7) 0328 S) 0728 | O lstoT | |
| 5/17/2023 | 15:28 | ဟ | SS06D-0' | 1 jar | lce | 100 | 7 7 | | 4 | | | |
| 5/17/2023 | 12:05 | တ | SS07B-0' | 1 jar | <u>s</u> | 200 | ナ | | 7 | | | |
| 5/17/2023 | 15:41 | တ | SS08C-0, | 1 jar | <u>e</u> | 003 | ナナ | | 7 | | | |
| 5/17/2023 | 10:23 | တ | ,0-60SS | 1 jar | lce | 700 | ナナ | | 7 | | | |
| 5/17/2023 | 10:29 | တ | SS10-0, | 1 jar | <u>8</u> | 200 | ナナ | | 7 | | | 1 |
| | | | | | | | | | | | | 1 |
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| Date: 05/19/2023 | Time: | Relinquished by: | ned by: | Received by: V | Ç | 23 | Remarks: agiovenge | Remarks: Please cc msan agiovengo@ensolum.com and churton@ensolum.cor | Remarks: Please cc msanjari@maramonoli.com, agiovengo@ensolum.com and chiirton@ensolum.com on results | @maratr n results | onoll.com, | |
| Date: | Time: | Relinquished by: | hed by: | | Via: Carefre | Date Time 9:36 | |) | | | | |
| g H nec | cessary, sam | ples submitte | IN COMMAND A CONTRACTOR AND A CONTRACTED TO SERVICE AND SERVICE OF This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report. | tracted to other accredited | laboratories. This s | serves as notice of this possibility. A | Any sub-contract | ed data will be | clearly notated | on the anal | ytical report. | |



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

OrderNo.: 2306489

June 20, 2023

Melodie Sanjari Marathon Oil Company 4111 Tidwell Road Carlsbad, NM 88220

TEL: (575) 297-0956

FAX

RE: Sugart West 19 Federal CTB H

(Shugart West 19)(Federal 8/Federal 9)

Dear Melodie Sanjari:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/9/2023 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 Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report Lab Order 2306489

Date Reported: 6/20/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company Client Sample ID: SS03C-0'

 Project:
 Sugart West 19 Federal CTB H
 Collection Date: 6/2/2023 9:30:00 AM

 Lab ID:
 2306489-001
 Matrix: SOIL
 Received Date: 6/9/2023 7:45:00 AM

Result **RL Qual Units** DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: PRD Diesel Range Organics (DRO) ND 9.9 mg/Kg 1 6/13/2023 11:47:08 AM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 6/13/2023 11:47:08 AM Surr: DNOP 101 69-147 %Rec 1 6/13/2023 11:47:08 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 6/14/2023 9:55:57 PM 4.9 mg/Kg 1 Surr: BFB 103 15-244 %Rec 1 6/14/2023 9:55:57 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 6/14/2023 9:55:57 PM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 6/14/2023 9:55:57 PM Ethylbenzene ND 0.049 mg/Kg 1 6/14/2023 9:55:57 PM Xylenes, Total ND 0.099 mg/Kg 1 6/14/2023 9:55:57 PM Surr: 4-Bromofluorobenzene 89.7 39.1-146 %Rec 1 6/14/2023 9:55:57 PM **EPA METHOD 300.0: ANIONS** Analyst: SNS Chloride ND 59 6/15/2023 1:19:15 PM ma/Ka 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

QL 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

Page 1 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306489 20-Jun-23**

Client: Marathon Oil Company

Project: Sugart West 19 Federal CTB H

Sample ID: MB-75617 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 75617 RunNo: 97494

Prep Date: 6/15/2023 Analysis Date: 6/15/2023 SeqNo: 3542499 Units: mg/Kg

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

Chloride ND 1.5

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

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 2 of 5

Hall Environmental Analysis Laboratory, Inc.

20 Jun 22

WO#:

20-Jun-23

2306489

Client: Marathon Oil Company

Project: Sugart West 19 Federal CTB H

Sample ID: LCS-75540 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 75540 RunNo: 97392

Prep Date: 6/12/2023 Analysis Date: 6/13/2023 SeqNo: 3538144 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO) 47 10 50.00 0 94.0 61.9 130

 Diesel Range Organics (DRO)
 47
 10
 50.00
 0
 94.0
 61.9
 130

 Surr: DNOP
 5.0
 5.000
 99.8
 69
 147

Sample ID: MB-75540 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 75540 RunNo: 97392

Prep Date: 6/12/2023 Analysis Date: 6/13/2023 SeqNo: 3538146 Units: mg/Kg

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

Diesel Range Organics (DRO) ND 10

Motor Oil Range Organics (MRO) ND 50

Surr: DNOP 9.3 10.00 93.0 69 147

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
- 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 3 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306489 20-Jun-23**

Client: Marathon Oil Company

Project: Sugart West 19 Federal CTB H

Sample ID: Ics-75536 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 75536 RunNo: 97399

Prep Date: 6/12/2023 Analysis Date: 6/13/2023 SeqNo: 3538745 Units: mg/Kg

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

 Gasoline Range Organics (GRO)
 25
 5.0
 25.00
 0
 99.8
 70
 130

 Surr: BFB
 2100
 1000
 208
 15
 244

Sample ID: mb-75536 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 75536 RunNo: 97399

Prep Date: 6/12/2023 Analysis Date: 6/13/2023 SeqNo: 3538746 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 970 1000 97.4 15 244

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 Quantitative 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

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306489 20-Jun-23**

Client: Marathon Oil Company

Project: Sugart West 19 Federal CTB H

| Sample ID: LCS-75536 | · | ype: LC | | | | | 8021B: Vola | iles | | |
|--------------------------------------|---------------------|-------------------|-----------|-------------|--|----------|--------------|------|----------|------|
| Client ID: LCSS Prep Date: 6/12/2023 | Batci Analysis D | n ID: 75 9 | | | RunNo: 9 ' SegNo: 3 : | | Units: mg/k | (a | | |
| 1 10p Date. 0/12/2023 | Analysis L | vaic. 0 / | 13/2023 | | Jeq140. 3 | 330747 | Office. High | 49 | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.80 | 0.025 | 1.000 | 0 | 79.8 | 70 | 130 | | | |
| Toluene | 0.81 | 0.050 | 1.000 | 0 | 81.3 | 70 | 130 | | | |
| Ethylbenzene | 0.81 | 0.050 | 1.000 | 0 | 81.0 | 70 | 130 | | | |
| Xylenes, Total | 2.5 | 0.10 | 3.000 | 0 | 81.9 | 70 | 130 | | | |
| Surr: 4-Bromofluorobenzene | 0.91 | | 1.000 | | 91.2 | 39.1 | 146 | | | |

| Sample ID: mb-75536 | Samp1 | Гуре: МЕ | BLK | Tes | tCode: El | PA Method | 8021B: Volat | tiles | | |
|----------------------------|------------|-----------------|-----------|-------------|-----------|-----------|--------------|-------|----------|------|
| Client ID: PBS | Batcl | h ID: 75 | 536 | F | RunNo: 9 | 7399 | | | | |
| Prep Date: 6/12/2023 | Analysis D | Date: 6/ | 13/2023 | S | SeqNo: 3 | 538748 | 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 | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.85 | | 1.000 | | 85.4 | 39.1 | 146 | | | |

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 5

Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Released to Imaging: 7/31/2023 10:26:11 AM

| EABO | RATORT | Website: www.ho | allenvironmen | tal.com | | |
|----------------------------------|--|---------------------------|---------------|-------------------------------------|---------------------------------------|-------------------|
| Client Name: | Marathon Oil Company | Work Order Number | : 2306489 | | RcptNo | 1 |
| Received By: | Juan Rojas | 6/9/2023 7:45:00 AM | | Generally Und | | |
| Completed By: | Cheyenne Cason | 6/9/2023 8:49:00 AM | | Chul | | |
| Reviewed By: | | | | | | |
| Chain of Cus | <u>stody</u> | | | | | |
| 1. Is Chain of C | Custody complete? | | Yes 🗹 | No 🗌 | Not Present | |
| 2. How was the | e sample delivered? | | Client | | | |
| <u>Log In</u> 3. Was an atter | mpt made to cool the samples | ? | Yes 🔽 | No 🗌 | na 🗆 | |
| 4. Were all sam | ples received at a temperatur | re of >0° C to 6.0°C | Yes 🔽 | No 🗌 | na 🗆 | |
| 5. Sample(s) in | proper container(s)? | | Yes 🗹 | No 🗌 | | |
| 6. Sufficient sar | mple volume for indicated test | (s)? | Yes 🗹 | No 🗌 | | |
| 7. Are samples | (except VOA and ONG) prope | erly preserved? | Yes 🗹 | No 🗌 | | |
| 8. Was preserva | ative added to bottles? | | Yes 🗌 | No 🗹 | NA 🗆 | / |
| 9. Received at I | east 1 vial with headspace <1 | /4" for AQ VOA? | Yes 🗌 | No 🗌 | NA 🗹 | 1501 |
| 10. Were any sa | mple containers received bro | ken? | Yes 📙 | No 🗹 | # of preserved bottles checked | 1 00/00 |
| | ork match bottle labels? pancies on chain of custody) | | Yes 🗹 | No 🗌 | . / | >12 unless noted) |
| 12. Are matrices | correctly identified on Chain of | of Custody? | Yes 🗹 | No 🗌 | Adjusted?/_ | |
| 13. Is it clear wha | at analyses were requested? | | Yes 🗹 | No 🗌 | | |
| | ling times able to be met? | | Yes 🗹 | No 🗆 | Checked by: | |
| | customer for authorization.) | | | | | |
| | otified of all discrepancies wit | h this order? | Yes 🗌 | No 🗌 | NA 🗹 | |
| | n Notified: | 7 | | | | |
| By Wh | , | Date: Via: | eMail | Phone Fax | ☐ In Person | |
| Regard | | via. [| CIVICII | 1 HONG TI AX | | |
| 1 | Instructions: | | | ACCUSED WHEN PRINCIPLE AND ADDRESS. | gregorian productive constrainment of | |
| 16. Additional re | | | | | | _ |
| 17. Cooler Info | ermation | | | | | |
| Cooler No | | Seal Intact Seal No 3 | Seal Date | Signed By | | |
| 1 | | lot Present Yogi | | _ | | |

| STANDAMOGIVADO INC | ANALYSIS LABORATORY | www.hallenvironmental.com | 4901 Hawkins NE - Albuquerque, NM 87109 | Tel. 505-345-3975 Fax 505-345-4107 | Anal | *O\$ | PCB's | S808\2 (1.40) (0.40) (1.40) (1.40) (1.40) (1.40) (2.40) (2.40) (2.40) (3 | ides ides ides ides ides ides ides ides | 15D(ethory 83 Methory 14 Methory 14 Methory 15 Methory | 8081 Pe 8081 Pe PAHs b RCRA 8 8260 (V 8270 (S Total Co |) X X | Change and the second of the s | | S and a supplied by the supplied of the suppli | | | | Application of the format to the first through the second to the first through the f | Remarks: MSU +S on Consult +D. | Da Da. 50/ 1/18. 50 14. | a Parcola Se | |
|-------------------------|------------------------------|-------------------------------|---|------------------------------------|--------------------------------|--|---|--|--|---|--|----------|--|--|--|--|--|--|--|--------------------------------|-------------------------|--------------|---------------------------|
| Turn-Around Time: | X Standard W Rush (Schauge) | Project Name: Shugard West 19 | Federal (TBK (Freday) & Freday 9) | Project #: @ 03 \ 1 0 400 4 | NO Cost Conter: 0029588000 | Project Manager: ASh(ey, G.ovengo | 275-988-0055 28 Jovengo @ Eusolum. com | hicanara | olers: | (including CF): 09-020.9 (°C) | Container Preservative HEAL No. | I.a 001 | | | | And the second s | The state of the s | A CONTRACTOR OF THE PROPERTY O | | Via: Date Time | CAB 07/8/ WWW | Date Time | 1 - 1 COUNTER 6/4/23 7/45 |
| Chain-of-Custody Record | client: Marathou Oil Company | | Mailing Address: On File | | Phone #: 5 + 5 - 883 - 8 + 5 5 | email or Fax#: M Sah Jar il ama rathonal com | QA/QC Package: G Standard □ Level 4 (Full Validation) | Accreditation: | □ EDD (Type) | | Date Time Matrix Sample Name | 30830 5 | | | | | | | | Date: Time: Relinquished by: | | Se Se | 1810 1910 WALMERTO |

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.

Released to Imaging: 7/31/2023 10:26:11 AM

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

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 243502

CONDITIONS

| Operator: | OGRID: |
|--------------------------|---|
| MARATHON OIL PERMIAN LLC | 372098 |
| 990 Town & Country Blvd. | Action Number: |
| Houston, TX 77024 | 243502 |
| | Action Type: |
| | [C-141] Release Corrective Action (C-141) |

CONDITIONS

| Created By | | Condition Date |
|------------|------|-------------------|
| jharimon | None | 7/31/2023 |