

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

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

Form C-141
Revised April 3, 2017
Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Marathon Oil Permian LLC	Contact: Callie Karrigan
Address: 5555 San Felipe St., Houston, TX 77056	Telephone No.: 405-202-1028
Facility Name: Chicken Fry Federal 1H	Facility Type: Oil Well
Surface Owner: Private	Mineral Owner: Federal
API No.: 30-015-42882	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	22	24S	28E	475	FNL	200	FEL	Eddy

Latitude 32.209479844 Longitude -104.06769976

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: .09 bbls	Volume Recovered: 0
Source of Release: Flare	Date and Hour of Occurrence: 01/02/2018 – 0300 HRS	Date and Hour of Discovery: 01/02/2018 – 0300 HRS
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Email to Crystal Weaver and Mike Bratcher, Email to Shelly Tucker	
By Whom? Jason Wardell	Date and Hour: 01/02/2018 1749 HRS	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* As a result of controllers on our free water knockout freezing, fluid was sent to the flare. When the fluid hit the flare, the fluid was ignited resulting in a small fire at the base of the flare. The fire was extinguished and well was shut in until hi level shut downs could be installed on the vessel.		
Describe Area Affected and Cleanup Action Taken.* Approximately .09 bbls of oil spilled onto location in the form of a mist. A portion of the spilled fluid did go off site to the north of the flare as the wind blew the mist off of location. Immediate clean-up on the pad included removing the impacted soil and replacing with clean soil. Impacted soil offsite was scraped and removed and backfilled with new soil. Sample results are attached.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

OIL CONSERVATION DIVISION

Signature: <i>Callie Karrigan</i>	Approved by Environmental Specialist:	
Printed Name: Callie Karrigan		
Title: HES Professional	Approval Date:	Expiration Date:
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 31/19/2018 Phone: 405-202-1028		

* Attach Additional Sheets If Necessary

Post Clean-up Activities





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State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
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.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: _____	Title: _____
Signature: <u>Callie Karrigan</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____

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 must be included in the closure report.*

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

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

Printed Name: _____ Title: _____

Signature: Callie Karrigan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 3/29/2023

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

Closure Approved by:  Date: 03/29/2023

Printed Name: Jocelyn Harimon Title: Environmental Specialist

Sample ID	Sample Date	Sample Depth (in)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
A	3/1/2018	0-6	x		<10.0	184	228	<0.050	<0.050	<0.050	<0.150	0.6	304
B	3/1/2018	0-6	x		<10.0	394	515	<0.050	<0.050	<0.050	<0.150	0.6	1000
C	3/1/2018	0-6	x		<10.0	40.3	53.2	<0.050	<0.050	<0.050	<0.150	0.6	274
D	3/1/2018	0-6	x		<10.0	43.2	43.2	<0.050	<0.050	<0.050	<0.150	0.6	56
A	3/18/2018	0-6	x		<10.0	<10	<20						385
B	3/18/2018	0-6	x		<10.0	<10	<20						

Karrigan, Callie N. (MRO)

From: Karrigan, Callie N. (MRO)
Sent: Friday, April 20, 2018 4:21 PM
To: Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; stucker@blm.gov
Subject: RE: Marathon Oil - Chicken Fry Fed 1H - 2RP-4571 - Final C141
Attachments: H800620 MARATHON.pdf; H800758 MARATHON.pdf

Crystal,

The sample reports are attached. After looking at the chart, I understand where my error was. We grabbed Sample A from the spot originally named Sample B to address TPH and chlorides and Sample A for TPH, we flip flopped the sample names. I understand that it is misleading and can resample if needed.

We did scrape an additional 3-6", so that would be 1'.

Have a good weekend.

Callie

From: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>
Sent: Friday, April 20, 2018 9:57 AM
To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; stucker@blm.gov
Subject: [External] RE: Marathon Oil - Chicken Fry Fed 1H - 2RP-4571 - Final C141

Beware of links/attachments.

Callie,

I noticed in your write up further chloride investigation was done at the sample point you refer to as A, but the elevated chlorides were showing up in the data for sample point B according to the lab report and your data table. Why was there no further sampling effort for sample point B for chloride?

Also not sure how to read the data. On the lab report for the samples taken on 3/1/18 there is no depth mentioned for what depth the samples are from. Then the new samples that your data table said were taken on 3/18/18 have the same depth mentioned as the original samples. Can you please clarify? Was a 6" scrape done and then another 6" scrap done again on 3/18/18? Thus technically making the newer samples from 1' depth? Also there is no attached lab report for the data from what your table refers to as being done on 3/18/18. Can we get the lab data for 3/18/18 please.

Thank you,

Crystal Weaver

Environmental Specialist
OCD – Artesia District II
811 S. 1st Street
Artesia, NM 88210
Office: 575-748-1283 ext. 101

Cell: 575-840-5963

Fax: 575-748-9720

From: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>

Sent: Tuesday, March 20, 2018 7:45 AM

To: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; stucker@blm.gov

Subject: Marathon Oil - Chicken Fry Fed 1H - 2RP-4571 - Final C141

All,

Please see the final submittal for the Chicken Fry Fed 1H (2RP-4571). As discussed below, we did do some additional scraping due to two of our samples coming back hot. Sample results and clean-up picture is attached.

Let me know if you have any questions.

Callie

From: Karrigan, Callie N. (MRO)

Sent: Thursday, March 8, 2018 12:19 PM

To: 'Weaver, Crystal, EMNRD' <Crystal.Weaver@state.nm.us>

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; stucker@blm.gov

Subject: Marathon Oil - Chicken Fry Fed 1H - 2RP-4571

Crystal,

As discussed last week, I did take soil samples and sent them off on 3/1. They are attached.

Marathon will need to do additional scraping and clean-up for two of the areas sampled (A and B). We do have shallow ground water in that area (<50 ft), so my threshold for TPH would be less than 100 ppm. Both A and B samples exceeded TPH concentrations. In addition, the chloride on sample A exceeded 600.

I requested the contractor to schedule additional clean-up onsite next week and to meet with myself or the HES Technician. After work is complete, we will resample TPH for both A and B samples and chloride for A. I will provide you all with an update and the lab analysis as soon as I receive it.

Please let me know if you have any questions.

Callie

From: Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]

Sent: Tuesday, February 27, 2018 4:18 PM

To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>

Subject: [External] RE: C141 Chicken Fry Fed 1H

Beware of links/attachments.

Callie,

That will work just fine. Thanks for the quick response on giving us a date.

Crystal Weaver

Environmental Specialist

OCD – Artesia District II

811 S. 1st Street

Artesia, NM 88210

Office: 575-748-1283 ext. 101

Cell: 575-840-5963

Fax: 575-748-9720

From: Karrigan, Callie N. (MRO) [<mailto:cnkarrigan@marathonoil.com>]

Sent: Tuesday, February 27, 2018 4:17 PM

To: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>

Subject: RE: C141 Chicken Fry Fed 1H

Thank you. I would like to take the samples tomorrow and would need to drop them off at the lab. I will rush it, so I feel 3/12 should be plenty of time. The release has been cleaned up.

I really appreciate the extension, thank you. Let me know if I need to shorten it.

Callie

From: Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]

Sent: Tuesday, February 27, 2018 4:06 PM

To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>

Subject: [External] RE: C141 Chicken Fry Fed 1H

Beware of links/attachments.

Sure Callie,

Can you please provide a date you would like to extend this request to?

Thank you,

Crystal Weaver

Environmental Specialist

OCD – Artesia District II

811 S. 1st Street
Artesia, NM 88210
Office: 575-748-1283 ext. 101
Cell: 575-840-5963
Fax: 575-748-9720

From: Karrigan, Callie N. (MRO) [<mailto:cnkarrigan@marathonoil.com>]
Sent: Tuesday, February 27, 2018 1:19 PM
To: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>
Subject: RE: C141 Chicken Fry Fed 1H

Good afternoon Crystal,

May I request an extension on this? This incident was one of the ones that I inherited when I came on board, I just need to grab a sample this week and get the results to you and the final C141 submission will be complete.

Callie

From: Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]
Sent: Friday, February 23, 2018 10:50 AM
To: Wardell, Jason L. (MRO) <jwardell@marathonoil.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; stucker@blm.gov
Cc: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>; Van Curen, Jennifer (MRO) <jvancuren@marathonoil.com>
Subject: [External] RE: C141 Chicken Fry Fed 1H

Beware of links/attachments.

RE: Marathon * Chicken Fry Federal #1H * 30-015-42882 * 2RP-4571

Jason,

I have included a scanned copy of the signed Initial C-141 Remediation Permit along with an attached Conditions of Approval (COA). The OCD tracking number for this event is 2RP-4571, please refer to this tracking number on any and all submissions sent in to the OCD. Please remit a report of your findings and efforts along with lab sample results, if you don't have all of that done then please provide a request for extension and validate that request with reasoning by no later than 2/28/18.

Thank you,

Crystal Weaver

Environmental Specialist
OCD – Artesia District II
811 S. 1st Street
Artesia, NM 88210
Office: 575-748-1283 ext. 101
Cell: 575-840-5963
Fax: 575-748-9720

From: Wardell, Jason L. (MRO) [<mailto:jwardell@marathonoil.com>]
Sent: Friday, January 12, 2018 11:11 AM
To: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; stucker@blm.gov
Cc: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>; Van Curen, Jennifer (MRO) <jvancuren@marathonoil.com>
Subject: C141 Chicken Fry Fed 1H

Attached you will find the C141 for the small spill and fire at the Chicken Fry Fed COM 1H. Please let me know if you have any questions.





JASON WARDELL

HES Professional

Marathon Oil Company – Permian Asset

2423 Bonita St.

Carlsbad NM. 88220

Office: 575-297-0682

Mobile: 307-272-1632

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

March 07, 2018

CALLIE KARRIGAN

MARATHON OIL COMPANY

4111 TIDWELL ROAD

CARLSBAD, NM 88220

RE: CHICKEN FRY FEDERAL 1H

Enclosed are the results of analyses for samples received by the laboratory on 03/02/18 8:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:Reported:
07-Mar-18 15:08

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CHICKEN FRY FEDERAL 1H A	H800620-01	Soil	01-Mar-18 09:00	02-Mar-18 08:45
CHICKEN FRY FEDERAL 1H B	H800620-02	Soil	01-Mar-18 09:05	02-Mar-18 08:45
CHICKEN FRY FEDERAL 1H C	H800620-03	Soil	01-Mar-18 09:10	02-Mar-18 08:45
CHICKEN FRY FEDERAL 1H D	H800620-04	Soil	01-Mar-18 09:15	02-Mar-18 08:45

Cardinal Laboratories

*=Accredited Analyte

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A handwritten signature in cursive script, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:08

CHICKEN FRY FEDERAL 1H A
H800620-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			95.1 %		72-148	8030206	MS	03-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
DRO >C10-C28*	184		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
EXT DRO >C28-C36	44.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctane			70.0 %		41-142	8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			71.1 %		37.6-147	8030205	MS	03-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	304		10.0	mg/kg wet	10	B803030	JDA	07-Mar-18	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:08

CHICKEN FRY FEDERAL 1H B
H800620-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			93.6 %	72-148		8030206	MS	03-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
DRO >C10-C28*	394		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
EXT DRO >C28-C36	121		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctane			78.0 %	41-142		8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			88.7 %	37.6-147		8030205	MS	03-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	1000		50.0	mg/kg wet	50	B803030	JDA	07-Mar-18	EPA300.0	
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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:08

CHICKEN FRY FEDERAL 1H C
H800620-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			92.1 %	72-148		8030206	MS	03-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
DRO >C10-C28*	40.3		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
EXT DRO >C28-C36	12.9		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctane			76.6 %	41-142		8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			66.2 %	37.6-147		8030205	MS	03-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	274		10.0	mg/kg wet	10	B803030	JDA	07-Mar-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:08

CHICKEN FRY FEDERAL 1H D
H800620-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8030206	MS	03-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			90.6 %	72-148		8030206	MS	03-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
DRO >C10-C28*	43.2		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			82.8 %	41-142		8030205	MS	03-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			74.9 %	37.6-147		8030205	MS	03-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	56.0		50.0	mg/kg wet	50	B803030	JDA	07-Mar-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:08

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8030206 - Volatiles										
Blank (8030206-BLK1)				Prepared: 02-Mar-18 Analyzed: 03-Mar-18						
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0915		mg/kg	0.100		91.5	72-148			
LCS (8030206-BS1)				Prepared: 02-Mar-18 Analyzed: 03-Mar-18						
Benzene	2.08	0.050	mg/kg	2.00		104	79.5-124			
Toluene	2.12	0.050	mg/kg	2.00		106	75.5-127			
Ethylbenzene	2.13	0.050	mg/kg	2.00		106	77.7-125			
Total Xylenes	6.54	0.150	mg/kg	6.00		109	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0913		mg/kg	0.100		91.3	72-148			
LCS Dup (8030206-BSD1)				Prepared: 02-Mar-18 Analyzed: 03-Mar-18						
Benzene	2.09	0.050	mg/kg	2.00		105	79.5-124	0.329	6.5	
Toluene	2.09	0.050	mg/kg	2.00		104	75.5-127	1.31	7.02	
Ethylbenzene	2.12	0.050	mg/kg	2.00		106	77.7-125	0.298	7.83	
Total Xylenes	6.52	0.150	mg/kg	6.00		109	70.9-124	0.261	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0892		mg/kg	0.100		89.2	72-148			

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:08

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8030205 - General Prep - Organics**Blank (8030205-BLK1)**

Prepared & Analyzed: 02-Mar-18

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	52.0		mg/kg	50.0		104	41-142			
Surrogate: 1-Chlorooctadecane	49.0		mg/kg	50.0		98.1	37.6-147			

LCS (8030205-BS1)

Prepared & Analyzed: 02-Mar-18

GRO C6-C10	200	10.0	mg/kg	200		99.8	76.5-133			
DRO >C10-C28	191	10.0	mg/kg	200		95.6	72.9-138			
Total TPH C6-C28	391	10.0	mg/kg	400		97.7	78-132			
Surrogate: 1-Chlorooctane	52.6		mg/kg	50.0		105	41-142			
Surrogate: 1-Chlorooctadecane	49.2		mg/kg	50.0		98.3	37.6-147			

LCS Dup (8030205-BSD1)

Prepared & Analyzed: 02-Mar-18

GRO C6-C10	207	10.0	mg/kg	200		104	76.5-133	3.71	20.6	
DRO >C10-C28	199	10.0	mg/kg	200		99.6	72.9-138	4.12	20.6	
Total TPH C6-C28	406	10.0	mg/kg	400		102	78-132	3.91	18	
Surrogate: 1-Chlorooctane	49.6		mg/kg	50.0		99.2	41-142			
Surrogate: 1-Chlorooctadecane	46.7		mg/kg	50.0		93.5	37.6-147			

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:08

Soluble (DI Water Extraction) - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B803030 - General Prep - Wet Chem**Blank (B803030-BLK1)**

Prepared: 06-Mar-18 Analyzed: 07-Mar-18

Chloride	ND	10.0	mg/kg wet							
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LCS (B803030-BS1)

Prepared: 06-Mar-18 Analyzed: 07-Mar-18

Chloride	236	10.0	mg/kg wet	250		94.4	85-115			
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LCS Dup (B803030-BSD1)

Prepared: 06-Mar-18 Analyzed: 07-Mar-18

Chloride	236	10.0	mg/kg wet	250		94.5	85-115	0.0974	20	
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Notes and Definitions

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

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A handwritten signature in cursive script, appearing to read "Celey D. Keene", written in black ink.

Celey D. Keene, Lab Director/Quality Manager

Page 11 of 11

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Released to Imaging: 3/29/2023 8:52:04 AM

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

March 19, 2018

CALLIE KARRIGAN

MARATHON OIL COMPANY

4111 TIDWELL ROAD

CARLSBAD, NM 88220

RE: CHICKEN FRY FEDERAL 1H

Enclosed are the results of analyses for samples received by the laboratory on 03/15/18 11:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at

www.tceq.texas.gov/field/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
19-Mar-18 11:00

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CHICKEN FRY FEDERAL 1H A	H800758-01	Soil	12-Mar-18 11:00	15-Mar-18 11:15
CHICKEN FRY FEDERAL 1H B	H800758-02	Soil	12-Mar-18 11:00	15-Mar-18 11:15

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A handwritten signature in cursive script, reading "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
19-Mar-18 11:00

CHICKEN FRY FEDERAL 1H A
H800758-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	8031506	MS	16-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8031506	MS	16-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8031506	MS	16-Mar-18	8015B	
Surrogate: 1-Chlorooctane			83.0 %	41-142		8031506	MS	16-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			78.7 %	37.6-147		8031506	MS	16-Mar-18	8015B	

Green Analytical Laboratories**Soluble (DI Water Extraction)**

Chloride	385		50.0	mg/kg wet	50	B803096	JLM	16-Mar-18	EPA300.0	
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Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
19-Mar-18 11:00

CHICKEN FRY FEDERAL 1H B**H800758-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	8031506	MS	16-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8031506	MS	16-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8031506	MS	16-Mar-18	8015B	
Surrogate: 1-Chlorooctane			54.2 %	41-142		8031506	MS	16-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			51.4 %	37.6-147		8031506	MS	16-Mar-18	8015B	

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Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
19-Mar-18 11:00

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 8031506 - General Prep - Organics**Blank (8031506-BLK1)**

Prepared & Analyzed: 15-Mar-18

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C35	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Total TPH C6-C28	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	47.6		mg/kg	50.0		95.2	41-142		
Surrogate: 1-Chlorooctadecane	47.2		mg/kg	50.0		94.4	37.6-147		

LCS (8031506-BS1)

Prepared & Analyzed: 15-Mar-18

GRO C6-C10	194	10.0	mg/kg	200		97.1	76.5-133		
DRO >C10-C28	215	10.0	mg/kg	200		107	72.9-138		
Total TPH C6-C28	409	10.0	mg/kg	400		102	78-132		
Surrogate: 1-Chlorooctane	49.2		mg/kg	50.0		98.5	41-142		
Surrogate: 1-Chlorooctadecane	48.0		mg/kg	50.0		96.0	37.6-147		

LCS Dup (8031506-BSD1)

Prepared & Analyzed: 15-Mar-18

GRO C6-C10	192	10.0	mg/kg	200		95.9	76.5-133	1.28	20.6
DRO >C10-C28	207	10.0	mg/kg	200		103	72.9-138	3.78	20.6
Total TPH C6-C28	399	10.0	mg/kg	400		99.6	78-132	2.58	18
Surrogate: 1-Chlorooctane	48.3		mg/kg	50.0		96.6	41-142		
Surrogate: 1-Chlorooctadecane	46.9		mg/kg	50.0		93.8	37.6-147		

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CHICKEN FRY FEDERAL 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
19-Mar-18 11:00

Soluble (DI Water Extraction) - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B803096 - General Prep - Wet Chem**Blank (B803096-BLK1)**

Prepared: 14-Mar-18 Analyzed: 16-Mar-18

Chloride	ND	10.0	mg/kg wet							
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LCS (B803096-BS1)

Prepared: 14-Mar-18 Analyzed: 15-Mar-18

Chloride	225	10.0	mg/kg wet	250		90.1	85-115			
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LCS Dup (B803096-BSD1)

Prepared: 14-Mar-18 Analyzed: 15-Mar-18

Chloride	227	10.0	mg/kg wet	250		91.0	85-115	1.01	20	
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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

* Send invoice to enquiries@marahandil.com

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

CONDITIONS

Action 191697

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 191697
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	3/29/2023