May 27, 2019 Vertex Project #: 19E-00614-005

Spill Closure Report: Fiddle Fee 24 28 23 WD #008H (Section 23, Township 24 South, Range 28 East)
API: 30-015-45038
County: Eddy
Incident Report: 2RP-5338

Prepared For: **Marathon Oil Permian, LLC**
4111 South Tidwell Road
Carlsbad, New Mexico 88220

New Mexico Oil Conservation Division - District 2 - Artesia
811 S. 1st Street
Artesia, New Mexico 88210

Marathon Oil Permian, LLC retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for a release of produced water, caused by the mechanical seal on the water transfer pump failed, resulting in a release into the lined containment. Approximately ten (10) barrels (bbls) of production water was released and recovered in the lined containment; however, due to overspray, approximately one (1) bbls of production water was released directly outside of containment on the pad at Fiddle Fee 24 28 23 WD #008H, API 30-015-45038, Incident 2RP-5338 (hereafter referred to as "site"). This letter provides a description of the Spill Assessment and includes a request for Spill Closure. The spill area is located at N 32.2059, W -104.065.

Background

The site is located approximately 20 miles southeast of Carlsbad, New Mexico. The legal location for the site is Section 23, Township 24 South and Range 28 East in Eddy County, New Mexico. The spill area is located on private property. An aerial photograph and site schematic are included in Attachment 1.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2014 – 2017) indicates the site's surface geology is comprised primarily of Qa ---- Alluvium (Holocene to upper Pleistocene). Predominant soil texture on the site is loam.

Incident Description

A spill occurred on March 23, 2019, due to the mechanical seal on the water transfer pump failed, resulting in a release into the lined containment. Approximately ten (10) bbls of produced water were released and recovered in containment; due to overspray, approximately one (1) bbl was released directly outside of containment on the pad. Approximately ten (10) bbls of free fluid were removed during initial spill clean-up. The New Mexico Oil Conservation Division (NMOCD) C-141 Report: 2RP-5338 is included in Attachment 2. The Daily Field Reports (DFRs) and site photographs are included in Attachment 3.

Closure Criteria Determination

The depth to groundwater was determined using information from Oil and Gas Drilling records and the New Mexico Office of the State Engineer Water Column/Average Depth to Water report. A 5,000-meter search radius was used to determine groundwater depth. The closest recorded depth to groundwater was determined to be 370 feet below ground surface (bgs) and 5,231 feet from the site. Documentation used in Closure Criteria Determination research is included in Attachment 4.

Table 1. Closure Criteria Determination

Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**370**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	10586	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark	3221	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	4662	feet
5	i) With 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	7741	feet
	ii) Within 1000 feet of any fresh water well or spring	6410	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	4652	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	>500	year
NMAC 19.15.29.12 E (Table 1) Closure Criteria		**>100'**	<50' 51-100' >100'

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 2.

Table 2. Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
> 100 feet	Chloride	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

Remedial Actions Taken

An initial site inspection of the spill area was completed on March 25, 2019, which identified the area of the spill specified in the initial C-141 Report, estimated the approximate volume of the spill and white lined the area required for the 811 One Call request. The impacted area outside of containment was determined to be approximately 14 feet long and 14 feet wide; the total affected area was determined to be 170 square feet. The DFR associated with the site is included in Attachment 3.

Remediation efforts began on March 29, 2019 and was completed on March 30, 2019. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on a total of two sample points and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), a Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and Quantabs (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed as close to the existing production infrastructure as possible in compliance with Marathon Oil Permian, LLC's safety guidelines. Soils were removed to a depth of 2 feet bgs at sample location SS19-01, 02, and 03; soils were removed to a depth of 4 feet bgs at sample location SS19-004. Impacted soil was transported by a licensed waste hauler and disposal at an approved waste management facility. Waste Manifest is presented in Attachment 5. Field screening results are presented in Attachment 6, as well as in the DFRs in Attachment 3.

Notification that a liner inspection was scheduled to be completed was provided to the NMOCD on April 1, 2019. The liner inspection was completed on April 3, 2019. As evidenced in the DFR, Attachment 3, liner integrity was confirmed, and the Liner Inspection Notification email is presented in Attachment 7.

Notification that confirmatory samples were being collected was provided to the NMOCD on March 29, 2019 (Attachment 7). Confirmatory composite samples were collected from the base of the excavation at a depth of 2 feet. A total of two (2) samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to XENCO Laboratories under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), Total Petroleum Hydrocarbons (GRO, DRO, MRO – EPA Method SW8015 MOD) and Total Chlorides (EPA Method 300.0). Laboratory results are presented in Table 3, Attachment 6 and the laboratory data report can be found in Attachment 8. All confirmatory samples collected and analyzed were below closure criteria for the site.

Closure Request

The spill area was fully delineated, remediated and backfilled with local soils by April 15, 2019. Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the New Mexico Administrative Code (NMAC) Closure Criteria for Soils Impacted by a Release locations "greater than 100 feet to groundwater". Based on these findings, Marathon Oil Permian, LLC requests that this spill be closed.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.361.1137 or dwilliams@vertex.ca.

Sincerely,

Dennis Williams
ENVIRONMENTAL EARTHWORKS ADVISOR

Attachments

Attachment 1. Site Schematic
Attachment 2. NMOCD C-141 Report: 2RP-5222
Attachment 3. Daily Field Report(s) with Pictures
Attachment 4. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 5. Waste Manifest(s)
Attachment 6. Table 3 - Laboratory Results Table
Attachment 7. Confirmatory Sample Notification to the NMOCD
Attachment 8. Laboratory Data Reports and COCs

References

1. *Water Column/Average Depth to Water Report.* New Mexico Water Rights Reporting System, (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html

2. *Assessed and Impaired Waters of New Mexico.* New Mexico Department of Surface Water Quality Bureau, (2019). Retrieved from https://gis.web.env.nm.gov/oem/?map=swqb

3. *Interactive Geologic Map.* New Mexico Bureau of Geology and Mineral Resources, (2019). Retrieved from http://geoinfo.nmt.edu

4. *Measure Distance from the Subject Site to Residence.* Google Earth Pro, (2019). Retrieved from http://earth.google.com

5. *Point of Diversion Location Report.* New Mexico Water Rights Reporting System, (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html

6. *Measured Distance from the Subject Site to Municipal Boundaries.* Google Earth Pro, (2019). Retrieved from http://earth.google.com

7. *National Wetland Inventory Surface Waters and Wetland*. United State Fish and Wildlife Service, (2019). Retrieved from https://www.fws.gov/wetlands/data/mapper.html

8. *Coal Mine Resources in New Mexico*. NM Mining and Minerals Division, (2019). Retrieved from http://www.emnrd.state.nm.us/MMD/gismapminedata.html

9. *New Mexico Cave/Karsts*. United States Department of the Interior, Bureau of Land Management, (2019) Retrieved from https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico

10. *Flood Map Number 35015C1875D.* United States Department of Homeland Security, FEMA Flood Map Service Center, (2010). Retrieved from https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor

11. *Well Log/Meter Information Report.* NM Office of the State Engineer, New Mexico Water Rights Reporting System. (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html

12. *Natural Resources and Wildlife Oil and Gas Releases*. New Mexico Oil Conservation Division, (2019). Santa Fe, New Mexico.

13. *Soil Survey, New Mexico*. United States Department of Agriculture, Soil Conservation Service in Cooperation with New Mexico Agricultural Experiment Station. (1971). Retrieved from http://www.wipp.energy.gov/library/Information_Repository_A/Supplemental_Information/Chugg%20et%20al%201971%20w-map.pdf

Limitations

This report has been prepared for the sole benefit of Marathon Oil Permian, LLC. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and Marathon Oil Permian, LLC. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

ATTACHMENT 1

LEGEND

- WELL
- ROAD
- SPILL

0 45 90 180 Ft

SCALE 1:1,500

Notes: Aerial Image from Eddy County Assessor 2019

Marathon Oil

Site Schematic
Fiddle Fee 8H Outside

VERTEX

DRAWN:	NM
APPROVED:	KM
DATE:	MAY 21/19

FIGURE: **2**

VERSATILITY. EXPERTISE.

ATTACHMENT 2

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAB1909557213
District RP	2RP-5338
Facility ID	
Application ID	pAB1909556792

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Callie Karrigan	Contact Telephone 575-297-0956
Contact email cnkarrigan@marathonoil.com	Incident # *(assigned by OCD)* NAB1909557213
Contact mailing address 4111 Tidwell Road, Carlsbad New Mexico, 88220	

Location of Release Source

Latitude 32.20600292 Longitude -104.0660576
(NAD 83 in decimal degrees to 5 decimal places)

Site Name FIDDLE FEE 24 28 23 WD #008H	Site Type Oil and gas drilling facility
Date Release Discovered 3/23/19	API# *(if applicable)* 30-015-45038

Unit Letter	Section	Township	Range	County
E	23	24S	28E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☑ Produced Water	Volume Released (bbls) 11	Volume Recovered (bbls) 10
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The Operator reported the mechanical seal on the water transfer pump failed, resulting in a release into lined containment. Approximately 10 barrels was released and recovered in containment. Due to overspray, approximately 1 barrels was released directly outside of containment.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1909557213
District RP	2RP-5338
Facility ID	
Application ID	pAB1909556792

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?

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

Yes via email to Mike Bratcher, Victoria Venegas and Robert Hamlet via email 3/23/19 11:46 pm

Initial Response

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

- ☑ The source of the release has been stopped.
- ☑ The impacted area has been secured to protect human health and the environment.
- ☑ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☑ All free liquids and recoverable materials have been removed and managed appropriately.

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

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

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

Printed Name: Isaac Castro Title: ADV HES Tech

Signature: Isaac Castro Date: 4/1/19

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

OCD Only

Received by: Amalia Barrameda Date: 4/5/2019

ATTACHMENT 3

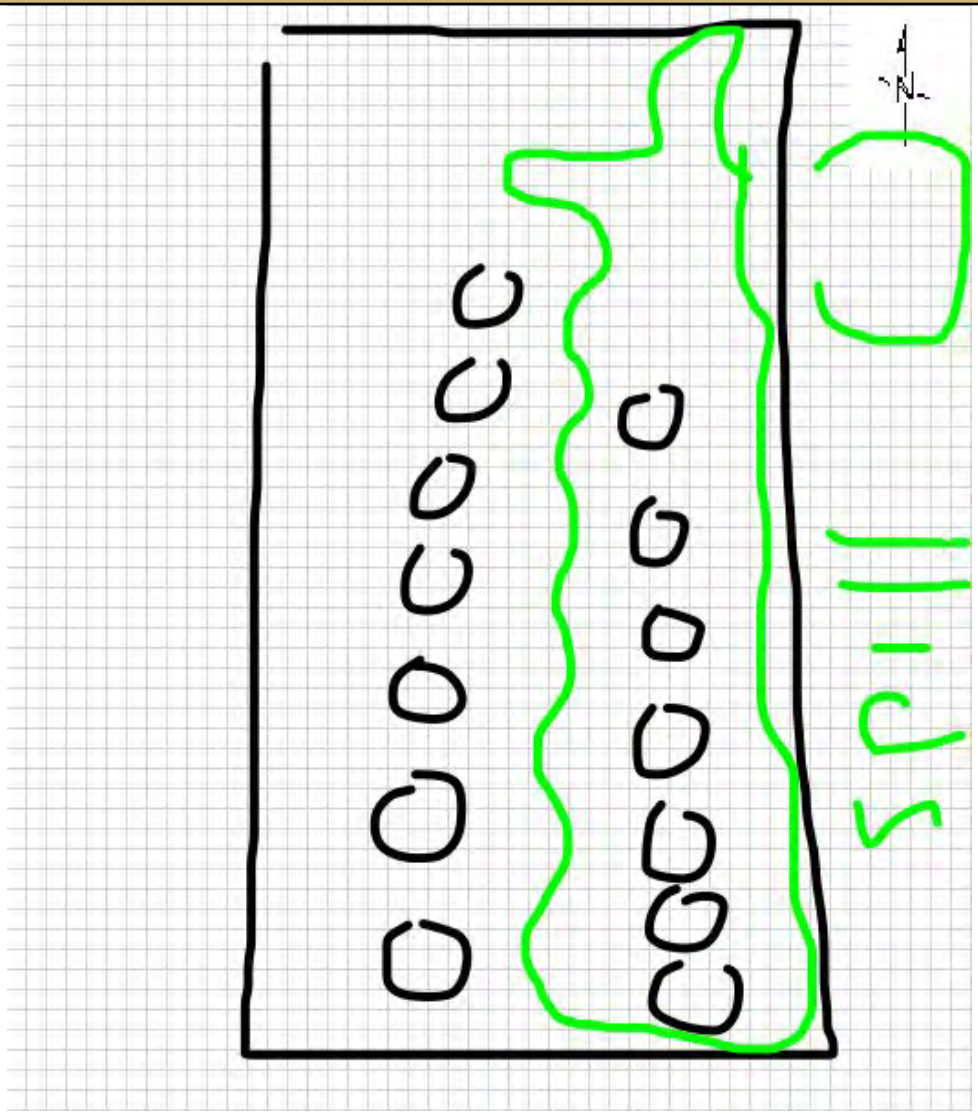
Daily Site Visit Report

Client:	Marathon Oil Permian LLC	Inspection Date:	3/25/2019
Site Location Name:	Fiddle Fee 24 28 23 TB 008H	Report Run Date:	3/25/2019 8:39 PM
Project Owner:	Isaac Castro	File (Project) #:	19E-00614
Project Manager:	Dennis Williams	API #:	30-015-45038
Client Contact Name:	Callie Karrigan	Reference	NEW Containment Spill
Client Contact Phone #:	(405) 202-1028		

Summary of Times	
Left Office	3/25/2019 9:00 AM
Arrived at Site	3/25/2019 9:40 AM
Departed Site	3/25/2019 11:35 AM
Returned to Office	3/25/2019 12:26 PM

Daily Site Visit Report

Site Sketch



Daily Site Visit Report

Summary of Daily Operations

9:46 Initial site inspection:
Picture documentation of spill
GPS spill area
White paint indication and pin flag indicating spill area

Next Steps & Recommendations

1 Create GPS shape file

2 Upload spill pictures

3 Create report

4 1 call for locates

5 Create work plan for further action

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: West
	
Spill outside containment on east side. Circulation transfer pump.	Spill outside containment on east side near water transfer pump.

Viewing Direction: South	**Viewing Direction**: South
	
Spill outside containment on east side near water transfer pump.	Spill outside containment on east side near water transfer pump.

Daily Site Visit Report

Viewing Direction: South

Spill inside containment on east side near separators

Viewing Direction: East

Spill inside containment near separators

Viewing Direction: East

Spill inside containment near separators

Viewing Direction: South

Spill inside containment near separators

Daily Site Visit Report

Viewing Direction: South

Spill inside containment near separators

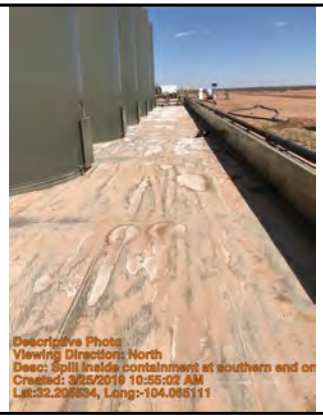
Viewing Direction: South

Spill inside containment near water transfer pump

Viewing Direction: South

Spill inside containment extending south towards south end of containment near tanks on east side

Viewing Direction: North



Spill inside containment at southern end on east side

Daily Site Visit Report

Viewing Direction: North

Spill inside containment at southern end between all storage tanks

Viewing Direction: Northeast

Spill inside containment near water transfer pump

Viewing Direction: South

Spill inside containment at north side of tanks looking south between tanks

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

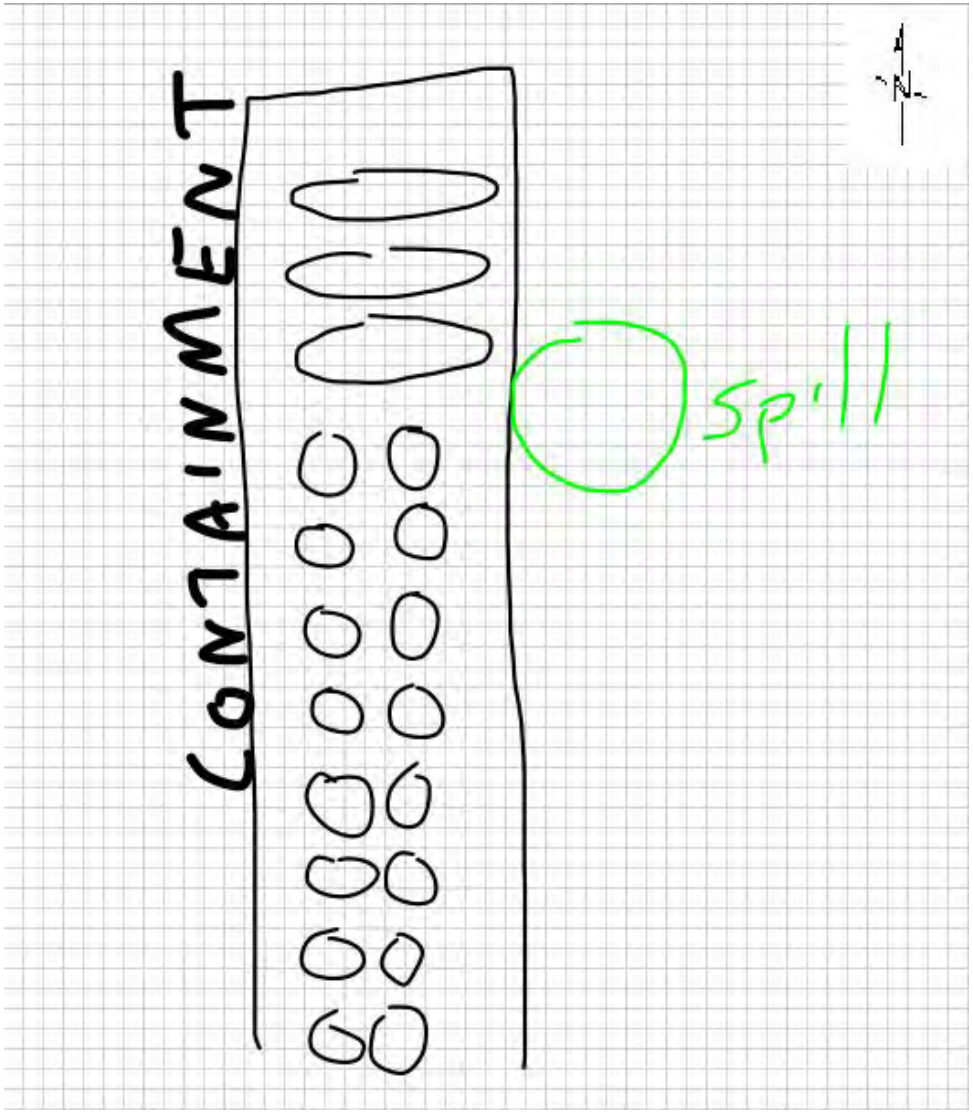
Signature

Daily Site Visit Report

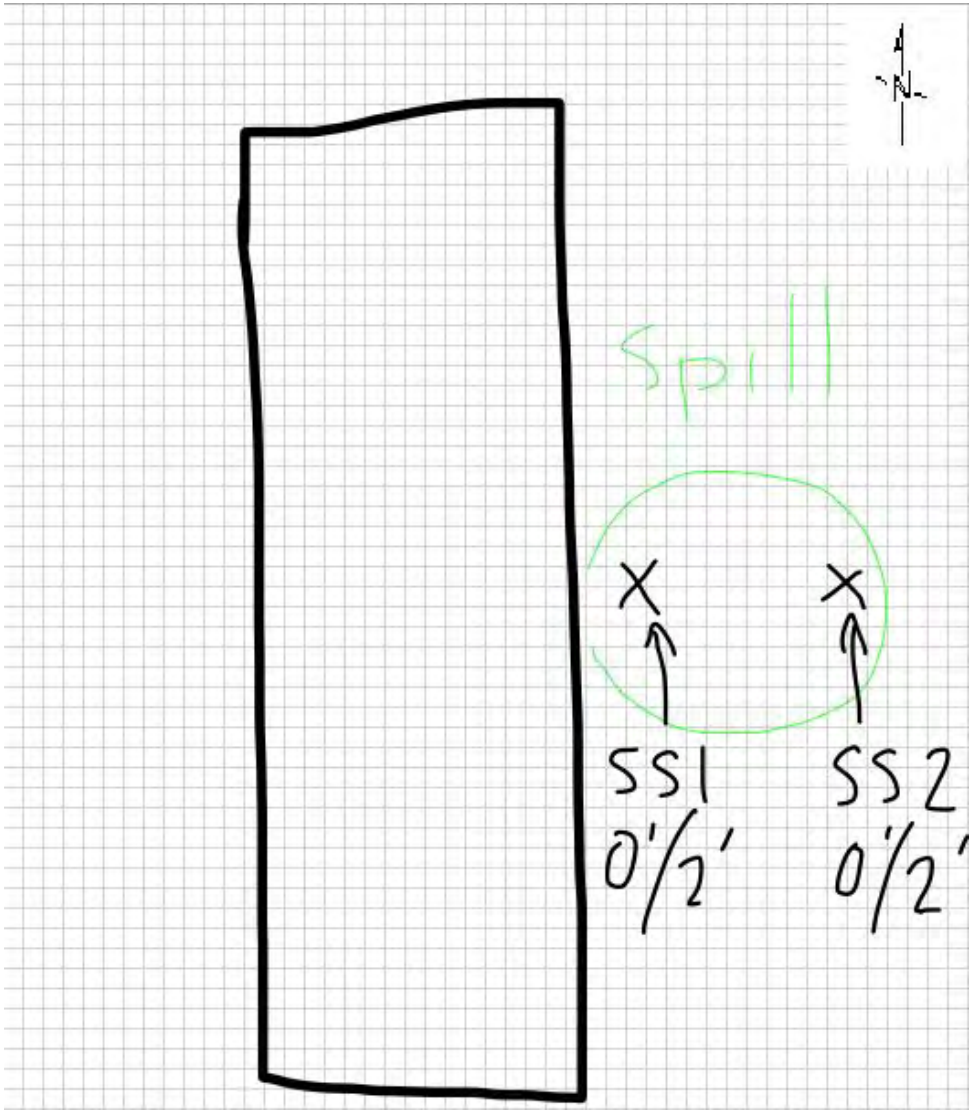
Client:	Marathon Oil Permian LLC	Inspection Date:	3/29/2019
Site Location Name:	Fiddle Fee 24 28 23 TB 008H	Report Run Date:	3/30/2019 5:58 PM
Project Owner:	Isaac Castro	File (Project) #:	19E-00614
Project Manager:	Dennis Williams	API #:	30-015-45038
Client Contact Name:	Callie Karrigan	Reference	NEW Containment Spill
Client Contact Phone #:	(405) 202-1028		

Summary of Times	
Left Office	3/29/2019 8:30 AM
Arrived at Site	3/29/2019 9:11 AM
Departed Site	3/29/2019 2:06 PM
Returned to Office	3/29/2019 3:00 PM

Daily Site Visit Report



Daily Site Visit Report



Daily Site Visit Report

Summary of Daily Operations

9:53 Spill cleanup and hand sampling. Testing for chlorides with quantabs; TPH with Petroflag and PID; pictures of spill before and after remediation;

Next Steps & Recommendations

1 Collect Samples

Sampling

SS19-01

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	1 ppm	1040 ppm	High (300-6000ppm)	1040 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221273, -104.0354187	Yes
2 ft.	1 ppm	580 ppm	High (300-6000ppm)	170 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221276, -104.0354203	Yes

SS19-02

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	1 ppm	170 ppm	Low (30-600 ppm)	376 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221278, -104.0354060	Yes
2 ft.	1 ppm	100 ppm	Low (30-600 ppm)	532 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221280, -104.0354081	Yes

Daily Site Visit Report

SS19-03

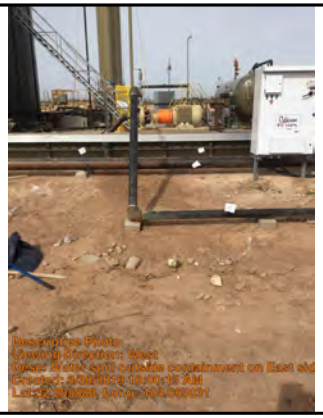
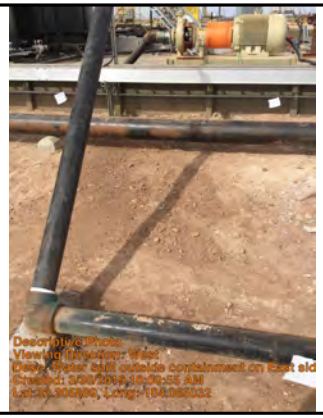
Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
2 ft.	1 ppm	130 ppm			BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221276, -104.0354203	No
3 ft.	1 ppm	140 ppm			BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221276, -104.0354203	No
4 ft.	1 ppm	240 ppm			BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221276, -104.0354203	No

SS19-04

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
2 ft.	1 ppm	180 ppm			BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221239, -104.0354155	No

Daily Site Visit Report

Site Photos

Viewing Direction: West	**Viewing Direction**: West
	
Water spill outside containment on East side	Water spill outside containment on East side
Viewing Direction: North	**Viewing Direction**: South
	
Water spill outside containment on East side	Water spill outside containment on East side

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 
Signature

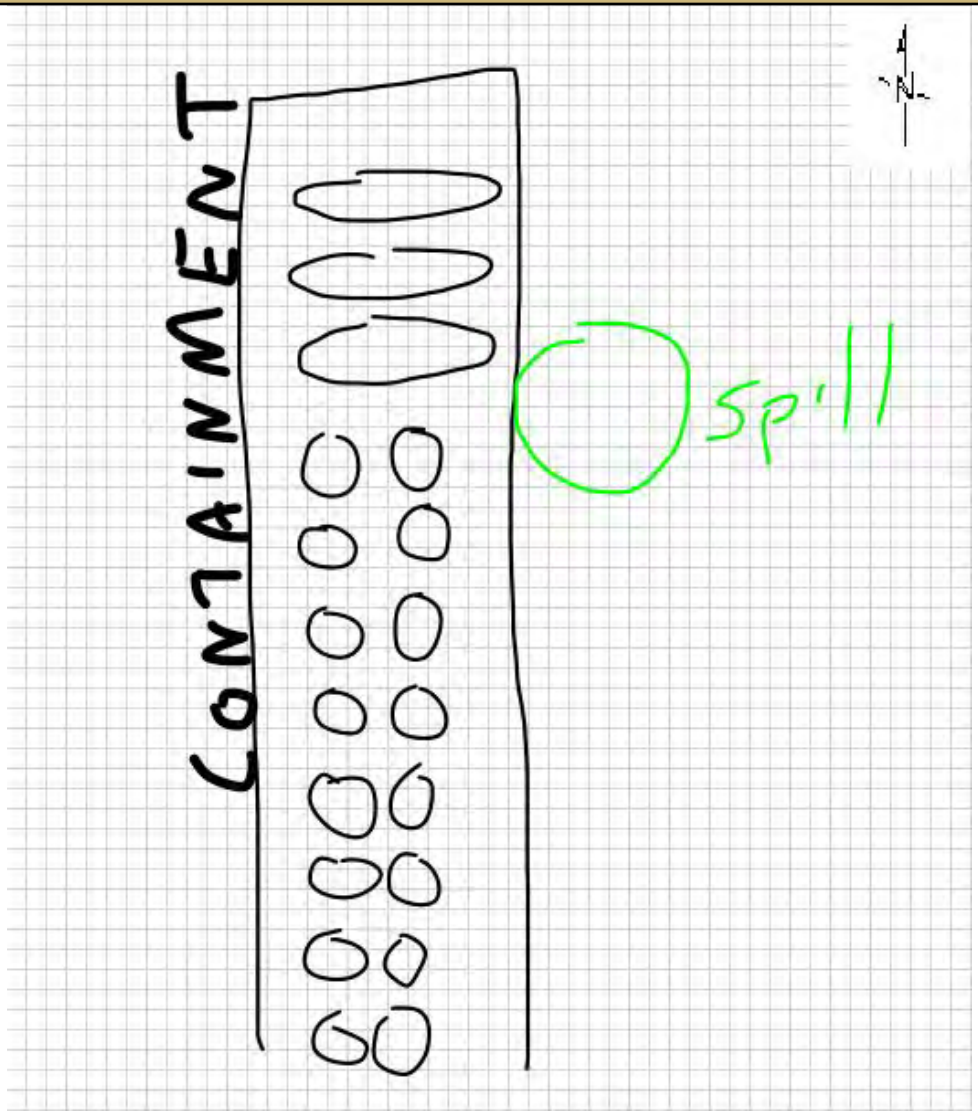
Daily Site Visit Report

Client:	Marathon Oil Permian LLC	Inspection Date:	3/30/2019
Site Location Name:	Fiddle Fee 24 28 23 TB 008H	Report Run Date:	3/31/2019 1:23 AM
Project Owner:	Isaac Castro	File (Project) #:	19E-00614
Project Manager:	Dennis Williams	API #:	30-015-45038
Client Contact Name:	Callie Karrigan	Reference	NEW Containment Spill
Client Contact Phone #:	(405) 202-1028		

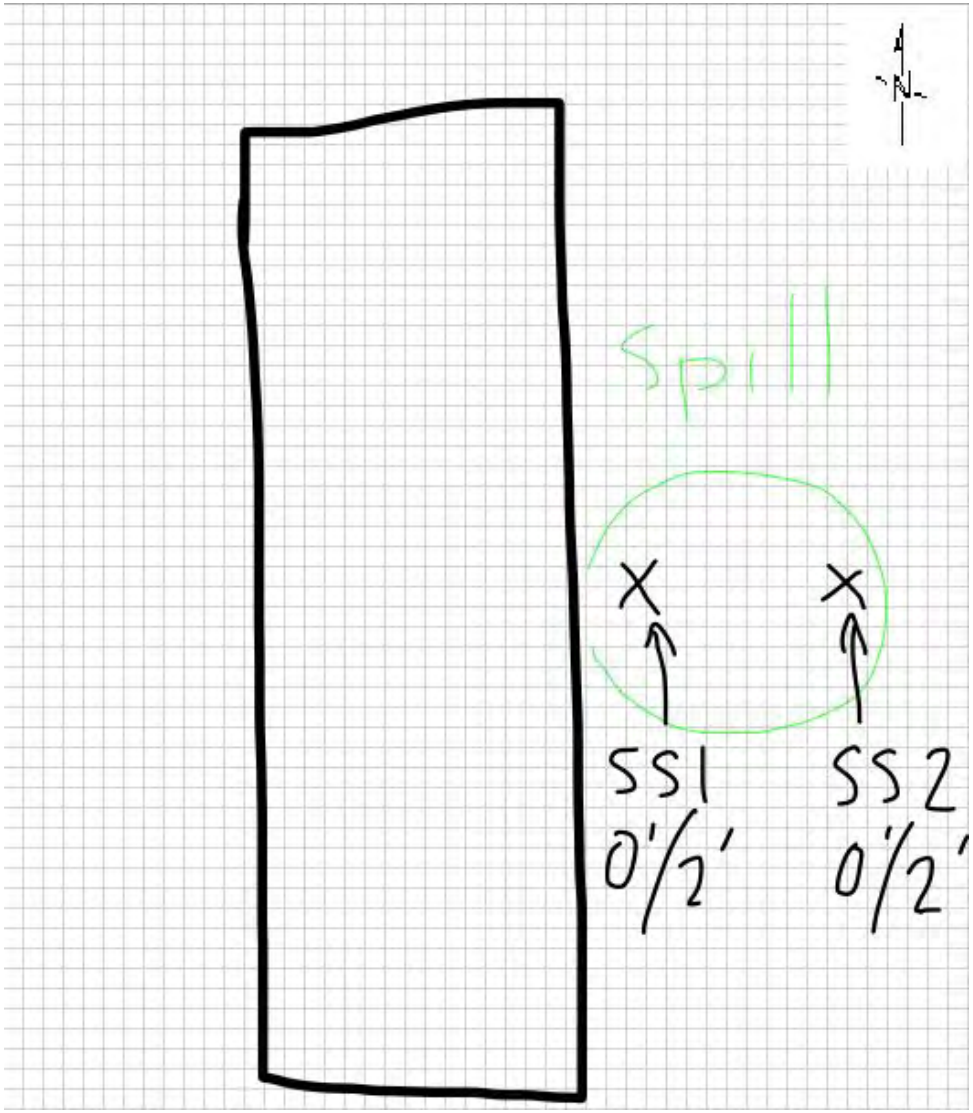
Summary of Times	
Left Office	3/30/2019 8:30 AM
Arrived at Site	3/30/2019 9:11 AM
Departed Site	3/30/2019 2:06 PM
Returned to Office	3/30/2019 3:00 PM

Daily Site Visit Report

Site Sketch



Daily Site Visit Report



Daily Site Visit Report

Summary of Daily Operations

9:53 Spill cleanup and hand sampling. Testing for chlorides with quantabs; TPH with Petroflag and PID; pictures of spill before and after remediation;

Next Steps & Recommendations

1 Send samples to lab

Sampling

SS19-01

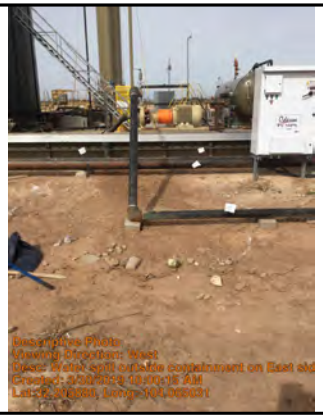
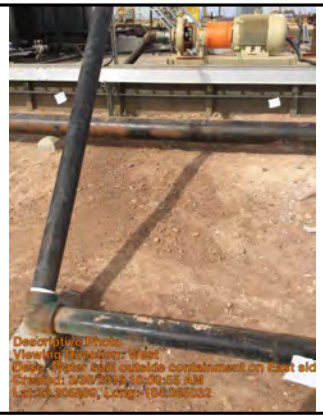
Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	1 ppm	1040 ppm	High (300-6000ppm)		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221273, -104.0354187	Yes
2 ft.	1 ppm	580 ppm	High (300-6000ppm)		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221276, -104.0354203	Yes

SS19-02

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	1 ppm	170 ppm	Low (30-600 ppm)	376 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221278, -104.0354060	Yes
2 ft.	1 ppm	100 ppm	Low (30-600 ppm)	532 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.1221280, -104.0354081	Yes

Daily Site Visit Report

Site Photos

Viewing Direction: West	**Viewing Direction**: West
	
Water spill outside containment on East side	Water spill outside containment on East side
Viewing Direction: North	**Viewing Direction**: South
	
Water spill outside containment on East side	Water spill outside containment on East side

Daily Site Visit Report

Depth Sample Photos

Sample Point ID: SS19-01	**Sample Point ID**: SS19-01
	
Depth: 0ft.	**Depth:** 2ft.
Sample Point ID: SS19-02	**Sample Point ID**: SS19-02
	
Depth: 0ft.	**Depth:** 2ft.

Daily Site Visit Report

Daily Site Visit Signature

Signature of Inspector:

Signature

Daily Site Visit Report

Client:	Marathon Oil Permian LLC	Inspection Date:	4/3/2019
Site Location Name:	Fiddle Fee 24 28 23 TB 008H	Report Run Date:	4/4/2019 1:46 AM
Project Owner:	Isaac Castro	File (Project) #:	19E-00614
Project Manager:	Dennis Williams	API #:	30-015-45038
Client Contact Name:	Callie Karrigan	Reference	NEW Containment Spill
Client Contact Phone #:	(405) 202-1028		

Summary of Times

Left Office	4/3/2019 11:30 AM
Arrived at Site	4/3/2019 12:19 PM
Departed Site	4/3/2019 1:17 PM
Returned to Office	4/3/2019 3:30 PM

Summary of Daily Operations

12:20 Arrive on site.
Fill out safety paperwork
Perform Liner inspection

Next Steps & Recommendations

1 Complete paperwork
Communicate results of inspections to Marathon
Wait on lab results and complete final report.

Daily Site Visit Report

Site Photos

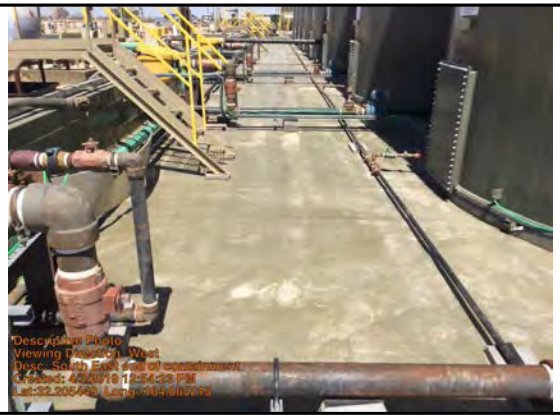
Viewing Direction: North

East side of containment.

Viewing Direction: South

SE corner of containment

Viewing Direction: West



South East end of containment

Viewing Direction: Northwest

South side of containment

Daily Site Visit Report

Viewing Direction: West

South side of containment

Viewing Direction: West

South side of containment

Viewing Direction: West

South side of containment

Viewing Direction: North

Seam North / South

Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: South
	
Seam north/ south	SW corner of containment
Viewing Direction: North	**Viewing Direction**: East
	
NW corner of containment	North side of containment

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: East
	
North side of containment	North side of containment
Viewing Direction: East	**Viewing Direction**: West
	
North side of containment	Between tanks

Daily Site Visit Report

Viewing Direction: West

Between tanks

Viewing Direction: West

Between tanks

Daily Site Visit Report

Daily Site Visit Signature

Signature of Inspector:

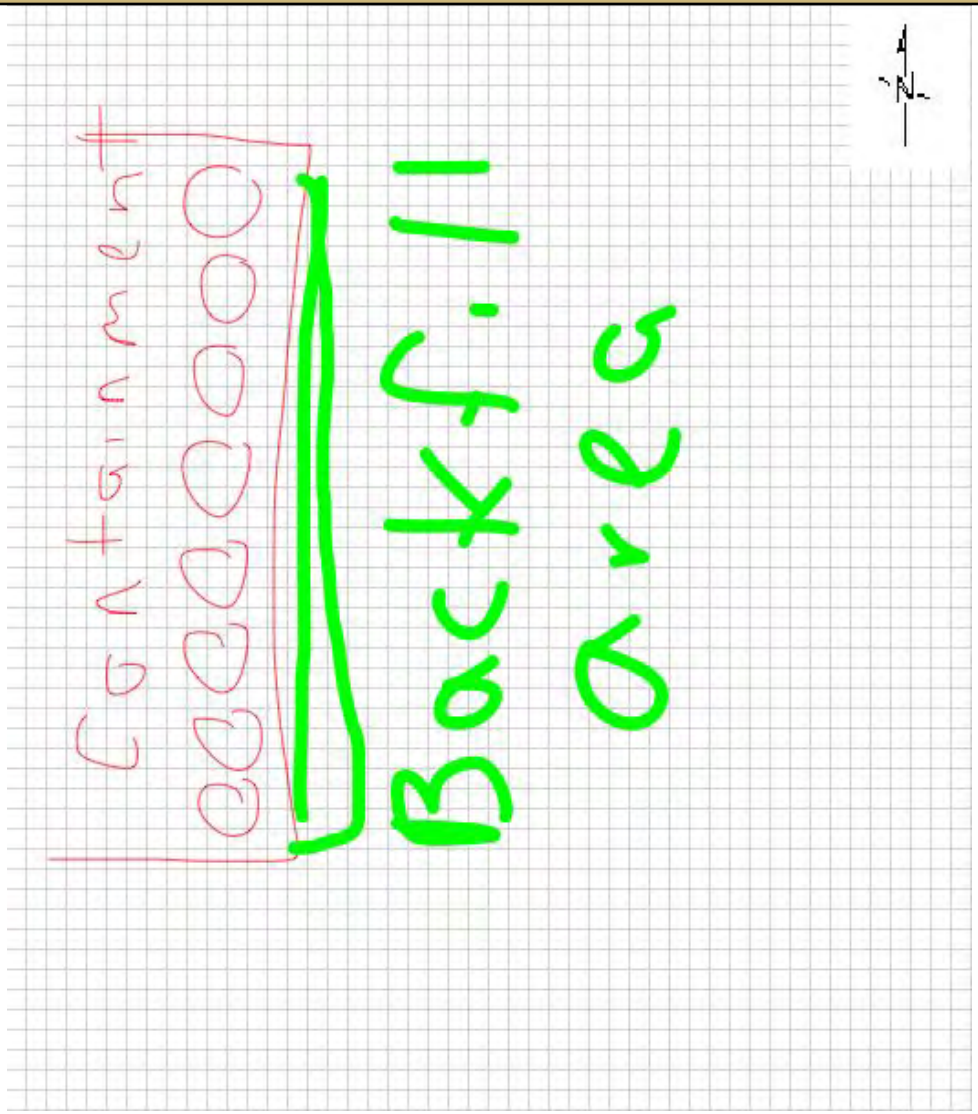
Daily Site Visit Report

Client:	Marathon Oil Permian LLC	Inspection Date:	4/17/2019
Site Location Name:	Fiddle Fee 24 28 23 TB 008H	Report Run Date:	4/17/2019 7:35 PM
Project Owner:	Isaac Castro	File (Project) #:	19E-00614
Project Manager:	Dennis Williams	API #:	30-015-45038
Client Contact Name:	Callie Karrigan	Reference	NEW Containment Spill
Client Contact Phone #:	(405) 202-1028		

Summary of Times	
Left Office	4/17/2019 12:10 PM
Arrived at Site	4/17/2019 12:14 PM
Departed Site	4/17/2019 12:34 PM
Returned to Office	4/17/2019 1:15 PM

Daily Site Visit Report

Site Sketch



Daily Site Visit Report

Summary of Daily Operations

12:25 Fill out arrival and safety forms
Conduct backfill inspection
Take pictures
Fill out DFR
Return to office

Next Steps & Recommendations

1 N/A

Daily Site Visit Report

Site Photos

Viewing Direction: West

Backfilled area

Viewing Direction: North

Backfilled area

Viewing Direction: South

Backfilled area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Jason Crabtree

Signature: 

Daily Site Visit Report

Client:	Marathon Oil Permian LLC	Inspection Date:	4/20/2019
Site Location Name:	Fiddle Fee 24 28 23 TB 008H	Report Run Date:	4/20/2019 3:23 PM
Project Owner:	Isaac Castro	File (Project) #:	19E-00614
Project Manager:	Dennis Williams	API #:	30-015-45038
Client Contact Name:	Callie Karrigan	Reference	NEW Containment Spill
Client Contact Phone #:	(405) 202-1028		

Summary of Times

Left Office	4/20/2019 8:17 AM
Arrived at Site	4/20/2019 8:18 AM
Departed Site	4/20/2019 8:40 AM
Returned to Office	4/20/2019 9:17 AM

Summary of Daily Operations

8:32 Fill out arrival and safety forms
Conduct final site visit/inspection
Take pictures
Fill out DFR
Return to office

Next Steps & Recommendations

1 N/A

Daily Site Visit Report

Site Photos

Viewing Direction: North

Cleaned up spill area inside lined containment

Viewing Direction: South

Cleaned up spill area inside lined containment

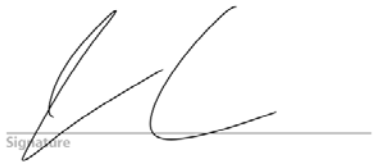
Viewing Direction: West

Backfilled spill area outside containment

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Jason Crabtree

Signature: 

ATTACHMENT 4

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number		POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04263 POD1		CUB	ED	3	1	1	23	24S	28E	588026	3563915	263	390	370	20
C 04222 POD2		CUB	ED	1	2	4	22	24S	28E	587707	3563255	504	100	40	60
C 03986 POD1		CUB	ED	3	4	2	22	24S	28E	587505	3563502	535	170	120	50
C 02244		C	LE	3	1	2	22	24S	28E	587224	3563865*	823	260		
C 04294 POD1		CUB	ED	4	3	3	23	24S	28E	588169	3562646	1016	60		
C 03132		C	ED	1	2	4	15	24S	28E	587616	3564877*	1289	90	19	71
C 02057		C	ED		1	4	14	24S	28E	588956	3564774*	1461	126	52	74
C 03833 POD1		C	ED	2	1	2	26	24S	28E	589014	3562545	1488	96	55	41
C 04180 POD1		CUB	ED	2	1	2	26	24S	28E	589055	3562502	1547	160	58	102
C 04151 POD1		CUB	ED	4	2	1	26	24S	28E	588584	3562192	1565	280	65	215
C 04181 POD1		CUB	ED	3	2	1	26	24S	28E	588450	3562146	1565	280	56	224
C 03358 POD1		CUB	ED	1	4	1	26	24S	28E	588416	3562116	1586	135		
C 03423		CUB	ED	2	4	1	26	24S	28E	588786	3561952	1864	126		
C 00346		C	ED		2	2	15	24S	28E	587715	3565591*	1962	90	32	58
C 02524 POD2		C	ED	2	2	2	15	24S	28E	587814	3565690*	2048	90	11	79
C 00488		C	ED	2	1	2	15	24S	28E	587412	3565688*	2124	64	8	56
C 00890		CUB	ED	3	3	4	10	24S	28E	587211	3565897*	2386	50		
C 00738		CUB	ED	3	1	1	13	24S	28E	589673	3565472*	2458	125	12	113
C 04026 POD1		CUB	ED	3	2	1	25	24S	28E	590148	3562290	2526	190	90	100
C 00353	C	CUB	ED		3	4	13	24S	28E	590603	3564367*	2680	2726		
C 02836		C	ED	2	2	2	16	24S	28E	586203	3565676*	2719		15	
C 00962		C	ED		3	3	10	24S	28E	586505	3565992*	2787	63	9	54
C 00574		CUB	ED	2	4	4	11	24S	28E	589452	3566081*	2819	200	20	180
C 00903		C	ED		2	1	13	24S	28E	590178	3565575*	2890	57	30	27
C 04222 POD1		CUB	ED	1	3	3	27	24S	28E	586406	3561228	2911	140	35	105
C 03824 POD1		CUB	ED	4	1	2	16	24S	28E	585770	3565578	2961	290	60	230

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04025 POD1		CUB	ED	4	3	3	27	24S	28E	586700	3560964	2994	190	90	100
C 00464		CUB	ED	2	2	1	13	24S	28E	590277	3565674*	3030	111	28	83
C 00354	C	CUB	ED		4	4	13	24S	28E	591005	3564367*	3069	2739		
C 03988 POD1		CUB	ED	4	4	4	28	24S	28E	586303	3561087	3085	110	95	15
C 00764		CUB	ED	3	1	3	10	24S	28E	586399	3566292*	3097	118	25	93
C 00750		CUB	ED	1	2	4	13	24S	28E	590898	3564871*	3125	110		
C 01082		CUB	ED	3	3	2	11	24S	28E	588832	3566693*	3147	120		
C 00709		C	ED	3	3	3	16	24S	28E	584802	3564232*	3269			
C 00513 S		CUB	ED	1	3	3	16	24S	28E	584801	3564431	3311	161	42	119
C 00329		C	ED	2	1	2	13	24S	28E	590682	3565677*	3345	95	30	65
C 00684		CUB	ED	2	1	2	13	24S	28E	590682	3565677*	3345	95	40	55
C 01154		C	ED	2	1	2	13	24S	28E	590682	3565677*	3345	95	50	45
C 00513		CUB	ED	2	2	2	20	24S	28E	584605	3564020	3434	212	48	164
C 03989 POD1		CUB	ED	4	2	2	33	24S	28E	586342	3560573	3506	100	70	30
C 00349	C	CUB	ED		1	3	18	24S	29E	591401	3564773*	3562	2734		
C 01442		C	ED		1	2	10	24S	28E	587298	3567199*	3619	100		
C 00618		C	ED	3	4	4	12	24S	28E	590880	3565885*	3628	80	40	40
C 01237		C	ED	1	1	2	10	24S	28E	587197	3567298*	3737	123		
C 01747		CUB	ED				12	24S	28E	590367	3566577*	3750	176	139	37
C 00983		C	ED	4	4	4	12	24S	28E	591080	3565885*	3788	92	40	52
C 00570		CUB	ED		1	1	10	24S	28E	586490	3567195*	3859	100	28	72
C 00648		C	ED	2	2	2	17	24S	28E	584593	3565644*	3963	96	58	38
C 03862 POD2		CUB	ED	3	3	3	01	24S	28E	589665	3567507	4191	30	10	20
C 03862 POD4		CUB	ED	3	3	3	01	24S	28E	589705	3567490	4192	30	10	20
C 03862 POD1		CUB	ED	3	3	3	01	24S	28E	589672	3567505	4193	17	10	7
C 03862 POD3		CUB	ED	3	3	3	01	24S	28E	589685	3567500	4193	60	10	50
C 03862 POD5		CUB	ED	4	3	3	01	24S	28E	589785	3567458	4196	17	10	7
C 02713		CUB	ED	4	4	1	16	24S	29E	591633	3565944	4279	230	18	212
C 00511		C	ED		2	3	02	24S	28E	588518	3568001*	4377	268	140	128

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 00365		CUB	ED	2	4	1	17	24S	28E	583791	3565226*	4511	238	26	212
C 03703 POD1		C	ED	1	2	1	09	24S	28E	585259	3567225	4515	74	15	59
C 00381	C	CUB	ED	3	2	3	07	24S	29E	591682	3566297*	4517	2797		
C 02184		C	ED	2	4	3	01	24S	28E	590248	3567700*	4620	87	60	27
C 00857		CUB	ED	3	1	4	30	24S	29E	592135	3561440*	4672	306		
C 00573		CUB	ED	2	2	4	04	24S	28E	586188	3568087*	4798	250	35	215
C 00856		CUB	ED	1	2	4	30	24S	29E	592538	3561644*	4944	380		
C 00862		CUB	ED	1	2	4	30	24S	29E	592538	3561644*	4944	155		

Average Depth to Water: **50 feet**

Minimum Depth: **8 feet**

Maximum Depth: **370 feet**

Record Count: 63

UTMNAD83 Radius Search (in meters):

Easting (X): 588019.52 **Northing (Y):** 3563651.97 **Radius:** 5000

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance
C 03754	C	STK	0	BRANTLEY BROTHERS	ED	C 03754 POD1			NON		4 4 2	22	24S	28E	587843	3563496	234
C 04263	CUB	EXP	0	RUSTLER HILLS II LTD PTP	ED	C 04263 POD1	NA			Shallow	3 1 1	23	24S	28E	588026	3563915	263
C 03987	CUB	EXP	0	RUSTLER HILLS II LTD	ED	C 03987 POD1			NON		3 4 2	22	24S	28E	587591	3563491	456
C 04222	CUB	EXP	0	VL FRESH WATER LLC	ED	C 04222 POD2	NA			Shallow	1 2 4	22	24S	28E	587707	3563255	504
C 03986	CUB	EXP	0	RUSTLER HILLS II LTD	ED	C 03986 POD1	NA		NON	Shallow	3 4 2	22	24S	28E	587505	3563502	535
C 02244	C	PRO	0	KAISER-FRANCIS OIL COMPANY	LE	C 02244					3 1 2	22	24S	28E	587224	3563865*	823
C 03756	C	STK	0	BRANTLEY BROTHERS	ED	C 03756 POD1			NON		1 4 4	15	24S	28E	587599	3564476	925
C 04294	CUB	MON	0	EMERGENCY ENVIROMENTAL SERV	ED	C 04294 POD1	NA				4 3 3	23	24S	28E	588169	3562646	1016
C 03132	C	DOL	3	BRANTLEY BROTHERS	ED	C 03132				Shallow	1 2 4	15	24S	28E	587616	3564877*	1289
C 02057	C	PRO	0	POGO PRODUCING CO.	ED	C 02057				Shallow	1 4	14	24S	28E	588956	3564774*	1461
C 03833	C	DOL	3	SCOTT BRANSON	ED	C 03833 POD1			NON	Shallow	2 1 2	26	24S	28E	589014	3562545	1488
C 04180	CUB	EXP	0	VALERIE BRANSON	ED	C 04180 POD1	NA			Shallow	2 1 2	26	24S	28E	589055	3562502	1547
C 04181	CUB	EXP	0	VALERIE BRANSON	ED	C 04181 POD2	NA				3 2 1	26	24S	28E	588417	3562146	1557
C 04151	CUB	EXP	0	SCOTT BRANSON	ED	C 04151 POD1	NA			Shallow	4 2 1	26	24S	28E	588584	3562192	1565
C 04181	CUB	EXP	0	VALERIE BRANSON	ED	C 04181 POD1	NA			Shallow	3 2 1	26	24S	28E	588450	3562146	1565
C 01264	CUB	EXP	0	GUY A. REED	ED	C 03358 POD1				Shallow	1 4 1	26	24S	28E	588416	3562116	1586
C 03358	C	STK	3	SCOTT BRANSON	ED	C 03358 POD1				Shallow	1 4 1	26	24S	28E	588416	3562116	1586
C 03359	C	PRO	0	CORKY GLENN	ED	C 03358 POD1				Shallow	1 4 1	26	24S	28E	588416	3562116	1586

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

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 6416	q 4	q	Sec	Tws	Rng	X	Y	Distance
C 03376	C	PRO	0	RIO TANKS FASLINE INC	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 03391	C	PRO	0	RIO TANKS FASLINE INC.	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 03485	C	PRO	0	SCOTT BRANSON	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 03486	C	PRO	0	SCOTT BRANSON	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 03487	C	PRO	0	SCOTT BRANSON	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 03742	C	PRO	0	CONCHO OIL & GAS	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 03743	C	PRO	0	CONCHO OIL & GAS	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 03744	C	PRO	0	CONCHO OIL & GAS	ED	C 03358 POD1				Shallow	1	4	1	26	24S	28E	588416	3562116	1586
C 01265	CUB	EXP	0	GUY A. REED	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03158	C	PRO	0	NEARBURG PRODUCTING	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03250	C	PRO	0	PATTERSON DRILLING COMPANY	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03315	C	PRO	0	CORKY GLENN	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03423	C	STK	3	SCOTT BRANSON	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03425	C	PRO	0	BOBCO PRODUCTION CO	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03466	C	PRO	0	O.G.X. RESOURCES	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03473	C	PRO	0	SCOTT BRANSON	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03474	C	PRO	0	SCOTT BRANSON	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03475	C	PRO	0	SCOTT BRANSON	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03683	C	PRO	0	SCOTT BRANSON	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 03685	C	PRO	0	SCOTT BRANSON	ED	C 03423				Shallow	2	4	1	26	24S	28E	588786	3561952	1864
C 00394	CUB	CLS	0	DEKALB AGRIGULTURAL ASSN.	ED	C 00394		C				4	2	21	24S	28E	586116	3563545*	1906
C 00346	C	SAN	3	MALAGA SCHOOL	ED	C 00346				Shallow		2	2	15	24S	28E	587715	3565591*	1962

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

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 6416	q 4	q	Sec	Tws	Rng	X	Y	Distance
C 02524	C	DOM	3	TONY LOPEZ	ED	C 02524					2	2	2	15	24S	28E	587814	3565690*	2048
					ED	C 02524 POD2				Shallow	2	2	2	15	24S	28E	587814	3565690*	2048
C 02674	C	DOM	1	JOHN E RUIZ	ED	C 02674	2077B				2	2	2	15	24S	28E	587814	3565690	2048
C 04267	C	SAN	1	ALICE RUIZ	ED	C 04267 POD1	2077A				1	1	1	14	24S	28E	587980	3565706	2055
C 00488	C	DOM	3	CID	ED	C 00488				Shallow	2	1	2	15	24S	28E	587412	3565688*	2124
C 04262	C	DOL	3	OVBAR LAND & CATTLE, LLC	ED	C 04262	20753				2	1	2	14	24S	28E	588966	3565581	2149
C 00580	CUB	IRR	0	GUILLERMO RUIZ	ED	C 00580					3	3	3	11	24S	28E	588017	3565903*	2251
C 02256	C	DOM	3	ROBERT HIGGINS	ED	C 02256					3	2	3	13	24S	28E	590093	3564669*	2309
C 00890	CUB	DOM	3	M.G. CLEAVELAND	ED	C 00890					3	3	4	10	24S	28E	587211	3565897*	2386
C 01266	CUB	IRR	0	HAROLD WALKER	ED	C 01266						4	2	16	24S	28E	586106	3565171*	2443
C 00768	CUB	IRR	0	MARCELO P. NAVARRETTE	ED	C 00768						2	3	13	24S	28E	590194	3564770*	2445
C 00738	CUB	IRR	343.5	W.J. BURKHAM	ED	C 00738				Shallow	3	1	1	13	24S	28E	589673	3565472*	2458
C 03990	C	STK	3	JIMMY J VASQUEZ	ED	C 03990 POD1			NON		1	4	4	10	24S	28E	587626	3566115	2494
C 01930	C	DOL	0	OSCAR F VASQUEZ	ED	C 01930						3	4	11	24S	28E	588941	3565989*	2512
C 04026	CUB	EXP	0	SCOTT BRANSON	ED	C 04026 POD1				Shallow	3	2	1	25	24S	28E	590147	3562290	2526
C 00353	CUB	CLS	0	DEKALB AGRICULTURAL ASSOC.	ED	C 00353		C				3	4	13	24S	28E	590603	3564367*	2680
C 00555	C	DOM	0	C.F. BEEMAN	ED	C 00555					4	2	3	11	24S	28E	588625	3566296*	2712
C 02799	C	DOL	0	EFREN B COLLINS	ED	C 02799					2	2	2	16	24S	28E	586203	3565676*	2719
C 02836	C	STK	3	EFREN COLLINS	ED	C 02836				Shallow	2	2	2	16	24S	28E	586203	3565676*	2719
C 00962	C	STK	3	H F WALKER	ED	C 00962				Shallow		3	3	10	24S	28E	586505	3565992*	2787
C 00574	CUB	IRR	55.05	TOMMY JR. OR CARLA DUARTE	ED	C 00574				Shallow	2	4	4	11	24S	28E	589452	3566081*	2819
C 00574 A	CUB	IRR	119.4	PEDRO A. DUARTE	ED	C 00574				Shallow	2	4	4	11	24S	28E	589452	3566081*	2819

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

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 640	q 160	q 4	Sec	Tws	Rng	X	Y	Distance
C 01137	CUB	EXP	0	MORRIS R. ANTWEIL	LE	C 01137					4	1	4	13	24S	28E	590696	3564670*	2863
C 00903	C	DOL	3	HENRY MCDONALD	ED	C 00903				Shallow		2	1	13	24S	28E	590178	3565575*	2890
C 04222	CUB	EXP	0	VL FRESH WATER LLC	ED	C 04222 POD1	NA			Shallow	1	3	3	27	24S	28E	586406	3561228	2911
C 03978	CUB	EXP	0	EFREN COLLINS	ED	C 03978 POD1			NON		2	1	2	16	24S	28E	585804	3565591	2944
C 03824	CUB	EXP	0	ZULEMA F COLLINS	ED	C 03824 POD1				Shallow	4	1	2	16	24S	28E	585770	3565578	2961
C 03880	C	PRO	0	CONCHO OIL & GAS	ED	C 03824 POD1				Shallow	4	1	2	16	24S	28E	585770	3565578	2961
C 03881	C	PRO	0	CONCHO OIL & GAS	ED	C 03824 POD1				Shallow	4	1	2	16	24S	28E	585770	3565578	2961
C 03882	C	PRO	0	CONCHO OIL & GAS	ED	C 03824 POD1				Shallow	4	1	2	16	24S	28E	585770	3565578	2961
C 04198	CUB	EXP	0	EFREN COLLINS	ED	C 04198 POD1	NA				2	1	2	16	24S	28E	585779	3565600	2968
C 04025	CUB	EXP	0	SCOTT BRANSON	ED	C 04025 POD1				Shallow	4	3	3	27	24S	28E	586699	3560964	2994
C 04073	C	PRO	0	MESQUITE SWD INC	ED	C 04025 POD1				Shallow	4	3	3	27	24S	28E	586699	3560964	2994
C 04074	C	PRO	0	MESQUITE SWD INC	ED	C 04025 POD1				Shallow	4	3	3	27	24S	28E	586699	3560964	2994
C 04075	C	PRO	0	MESQUITE SWD INC	ED	C 04025 POD1				Shallow	4	3	3	27	24S	28E	586699	3560964	2994
C 00464	CUB	IRR	314.245	JACKIE DALE MCDONALD	ED	C 00464				Shallow	2	2	1	13	24S	28E	590277	3565674*	3030
C 03868	C	DOL	3	EFRAIN RIOS	ED	C 03868 POD1					3	4	2	10	24S	28E	587679	3566685	3052
C 00354	CUB	CLS	0	DEKALB ALGRICULTURAL ASSN. INC	ED	C 00354		C				4	4	13	24S	28E	591005	3564367*	3069
C 03988	CUB	EXP	0	RUSTLER HILLS II LTD	ED	C 03988 POD1	NA		NON	Shallow	4	4	4	28	24S	28E	586303	3561087	3085
C 00764	CUB	IRR	117.9	MIKE M. VASQUEZ	ED	C 00764				Shallow	3	1	3	10	24S	28E	586399	3566292*	3097
C 00764 A	CUB	IRR	20.4	EVELYN KAY WALKER FAULK	ED	C 00764				Shallow	3	1	3	10	24S	28E	586399	3566292*	3097
C 00750	CUB	IRR	74.7	BETH ANN BOTROS	ED	C 00750				Shallow	1	2	4	13	24S	28E	590898	3564871*	3125
C 00802	CUB	IRR	120	ALBERTO DUARTE	ED	C 00802					3	3	2	11	24S	28E	588832	3566693*	3147
C 01082	CUB	IRR	240	DAMON U. BOND	ED	C 01082				Shallow	3	3	2	11	24S	28E	588832	3566693*	3147

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(acre ft per annum)

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(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 6416	q 4	Sec	Tws	Rng	X	Y	Distance
C 03642	C	DOL	0	EFRAIN RIOS	ED	C 03642 POD1			NA		3 3	1	10	24S	28E	586372	3566453	3249
C 00709	C	DOL	3	C.P. PARDUE & SONS	ED	C 00709				Shallow	3 3	3	16	24S	28E	584802	3564232*	3269
C 00513	CUB	IRR	1422	PARDUE LIMITED COMPANY	ED	C 00513 S	NA			Shallow	1 3	3	16	24S	28E	584800	3564431	3311
C 03665	C	PRO	0	PARDUE LIMITED COMPANY	ED	C 00513 S	NA			Shallow	1 3	3	16	24S	28E	584800	3564431	3311
C 04152	C	PRO	0	MEWBOURNE OIL COMPANY	ED	C 00513 S	NA			Shallow	1 3	3	16	24S	28E	584800	3564431	3311
C 04154	C	PRO	0	MEWBOURNE OIL COMPANY	ED	C 00513 S	NA			Shallow	1 3	3	16	24S	28E	584800	3564431	3311
C 04155	C	PRO	0	MEWBOURNE OIL COMPANY	ED	C 00513 S	NA			Shallow	1 3	3	16	24S	28E	584800	3564431	3311
C 00329	C	DOM	3	DEKALB AGRI. ASSOC. INC.	ED	C 00329				Shallow	2 1	2	13	24S	28E	590682	3565677*	3345
C 00684	CUB	IRR	0	EASTLAND OIL CO.	ED	C 00684				Shallow	2 1	2	13	24S	28E	590682	3565677*	3345
C 01154	C	PRO	0	MORRIS R. ANTWEIL	ED	C 01154				Shallow	2 1	2	13	24S	28E	590682	3565677*	3345
C 00513	CUB	IRR	1422	PARDUE LIMITED COMPANY	ED	C 00513	NA		NON	Shallow	2 2	2	20	24S	28E	584605	3564020	3434
C 03664	C	PRO	0	PARDUE LIMITED COMPANY	ED	C 00513	NA		NON	Shallow	2 2	2	20	24S	28E	584605	3564020	3434
C 04153	C	PRO	0	COG OPERATING LLC	ED	C 00513	NA		NON	Shallow	2 2	2	20	24S	28E	584605	3564020	3434
C 04156	C	PRO	0	COG OPERATING LLC	ED	C 00513	NA		NON	Shallow	2 2	2	20	24S	28E	584605	3564020	3434
C 04157	C	PRO	0	COG OPERATING LLC	ED	C 00513	NA		NON	Shallow	2 2	2	20	24S	28E	584605	3564020	3434
C 03989	CUB	EXP	0	RUSTLER HILLS II LTD	ED	C 03989 POD1			NON	Shallow	4 2	2	33	24S	28E	586341	3560573	3506
C 00349	CUB	CLS	0	E.L. WILSON	ED	C 00349		C			1	3	18	24S	29E	591401	3564773*	3562
C 01442	C	DOM	0	FRANK WILLIAMS	ED	C 01442					1	2	10	24S	28E	587298	3567199*	3619
C 00618	C	DOM	3	ANNA LANDRUM	ED	C 00618				Shallow	3 4	4	12	24S	28E	590880	3565885*	3628
C 01237	C	DOL	3	S. F. WILLIAMS	ED	C 01237				Shallow	1 1	2	10	24S	28E	587197	3567298*	3737
C 01747	CUB	EXP	0	GEORGE BRANTLEY	ED	C 01747				Shallow			12	24S	28E	590367	3566577*	3750
C 00983	C	DOM	3	E J ROGERS	ED	C 00983				Shallow	4 4	4	12	24S	28E	591080	3565885*	3788

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(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 6416	q 4	q	Sec	Twn	Rng	X	Y	Distance
C 03669	C	SAN	0	CRESTWOOD NEW MEXICO PIPELINES	ED	C 03669					1	2	2	29	24S	28E	584389	3562486	3812
					ED	C 03669 POD1					1	2	2	29	24S	28E	584389	3562486	3812
C 00570	CUB	IRR	0	FRANK Z. VASQUEZ	ED	C 00570				Shallow		1	1	10	24S	28E	586490	3567195*	3859
C 00648	C	DOM	3	T. J. CARLETON	ED	C 00648				Shallow	2	2	2	17	24S	28E	584593	3565644*	3963
C 03862	CUB	EXP	0	ENVIRO DRILL INC	ED	C 03862 POD2			NON	Shallow	3	3	3	01	24S	28E	589664	3567507	4191
					ED	C 03862 POD4			NON	Shallow	3	3	3	01	24S	28E	589705	3567490	4192
					ED	C 03862 POD1			NON	Shallow	3	3	3	01	24S	28E	589672	3567505	4193
					ED	C 03862 POD3			NON	Shallow	3	3	3	01	24S	28E	589685	3567500	4193
					ED	C 03862 POD5			NON	Shallow	4	3	3	01	24S	28E	589785	3567458	4196
C 01098	CUB	EXP	0	GUY A. REED	ED	C 01098						2	2	36	24S	28E	591033	3560719*	4205
C 00575	CUB	IRR	0	J.R. DUARTE	ED	C 00575						4	4	08	24S	28E	584491	3565951*	4211
C 02713	CUB	IND	645	RED BLUFF WATER POWER CONTROL DISTRICT	ED	C 02713				Shallow	4	4	1	16	24S	29E	591633	3565944	4279
C 03360	C	PRO	0	REEF EXPLORATION	ED	C 02713				Shallow	4	4	1	16	24S	29E	591633	3565944	4279
C 00511	C	PRO	0	RICHARDSON & BASS	ED	C 00511				Shallow		2	3	02	24S	28E	588518	3568001*	4377
C 00365	CUB	IRR	185.7	CARLETON JOE O	ED	C 00365				Shallow	2	4	1	17	24S	28E	583791	3565226*	4511
C 03703	C	DOM	1	BLACK RIVER PROPERTY	ED	C 03703 POD1			NON	Shallow	1	2	1	09	24S	28E	585259	3567225	4515
C 00381	CUB	CLS	0	TENNESSEE PRODUCING CO.	ED	C 00381		C			3	2	3	07	24S	29E	591682	3566297*	4517
C 02184	C	PRO	0	SANTA FE ENERGY OPER. PARTNERS	ED	C 02184				Shallow	2	4	3	01	24S	28E	590248	3567700*	4620
C 00006	CUB	IRR	0	W H SWEARINGEN	ED	C 00006								03	24S	28E	587087	3568199*	4641
C 00857	CUB	EXP	0	NEW MEXICO INTERSTATE STREAM	ED	C 00857				Shallow	3	1	4	30	24S	29E	592135	3561440*	4672
C 02084	C	DOL	0	JIM BURLESON	ED	C 02084						1	3	01	24S	28E	589741	3568003*	4679
C 00573	CUB	IRR	260.1	GUADALUPE & YSABEL O. VASQUEZ	ED	C 00573				Shallow	2	2	4	04	24S	28E	586188	3568087*	4798

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(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 6416	q 4	Sec	Tws	Rng	X	Y	Distance
C 00856	CUB	EXP	0	NEW MEXICO INTERSTATE STREAM	ED	C 00856				Shallow	1 2	4	30	24S	29E	592538	3561644*	4944
C 00862	CUB	EXP	0	N.M. I.S.C.	ED	C 00862				Shallow	1 2	4	30	24S	29E	592538	3561644*	4944

Record Count: 130

UTMNAD83 Radius Search (in meters):

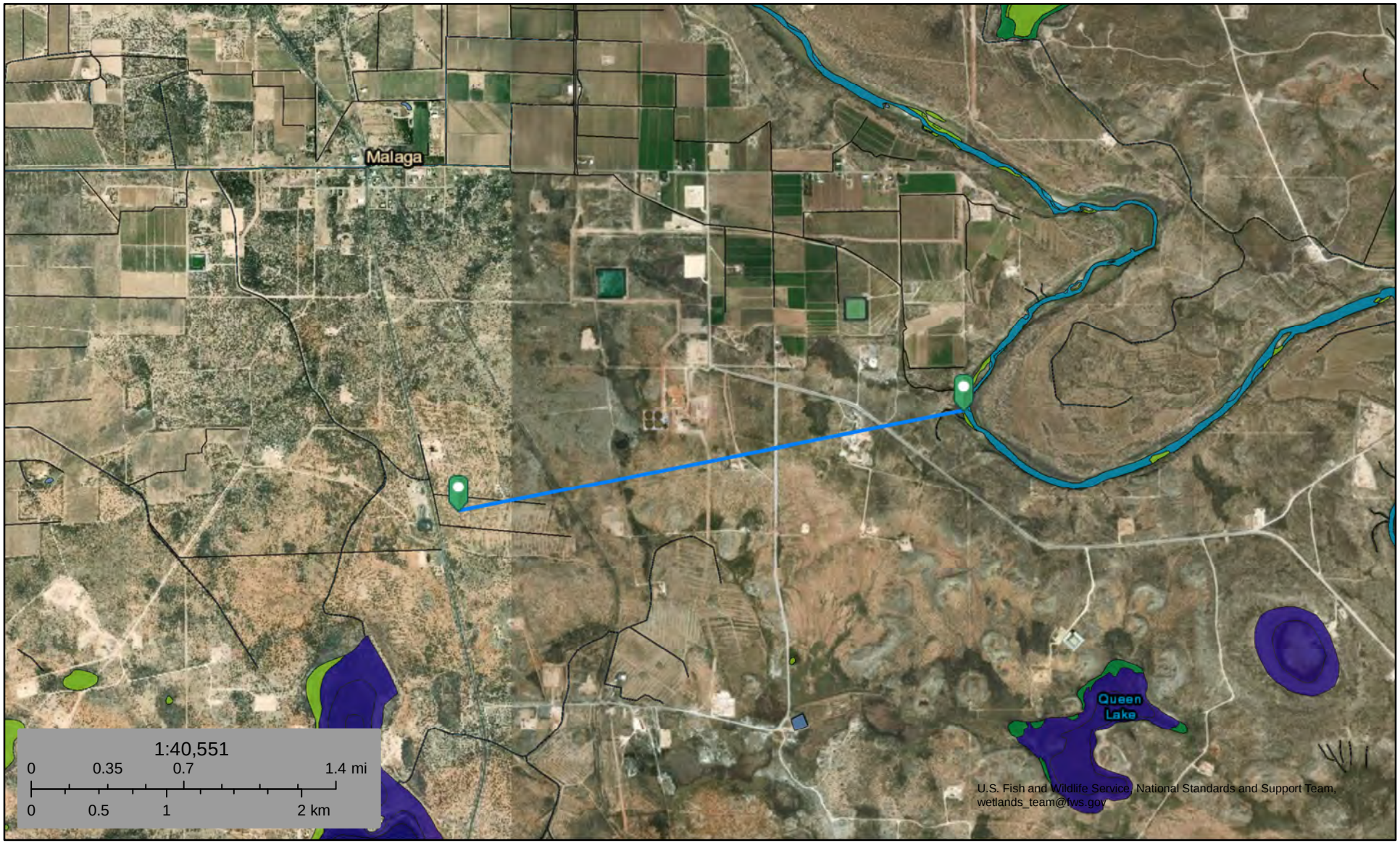
Easting (X): 588019.52 **Northing (Y):** 3563651.97 **Radius:** 5000

Sorted by: Distance

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Fiddle Fee 8 fw 10,586



March 26, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Fiddle Fee 8 lake 3,221

March 26, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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U.S. Fish and Wildlife Service
National Wetlands Inventory

Fiddle Fee Residence 4,662

March 26, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
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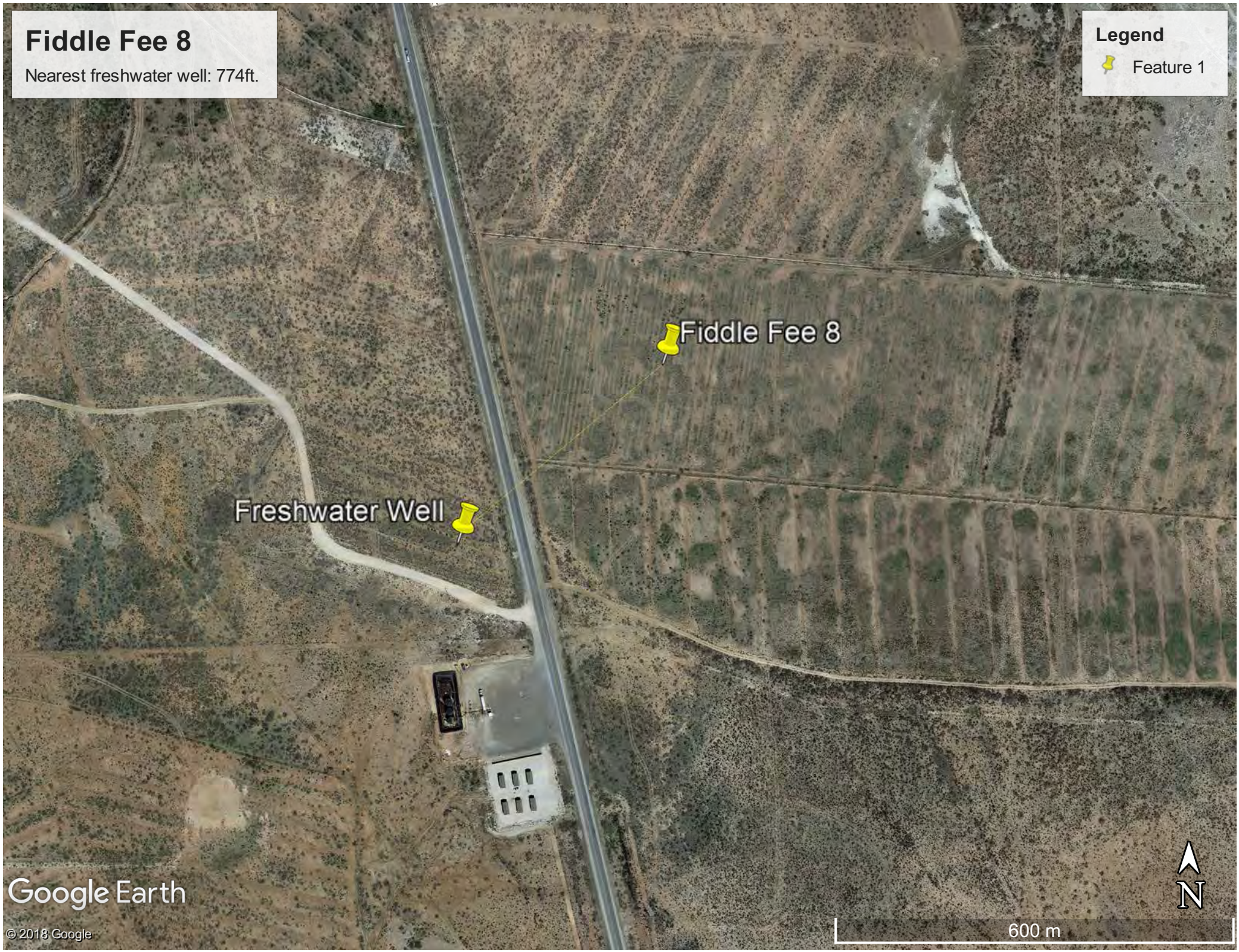
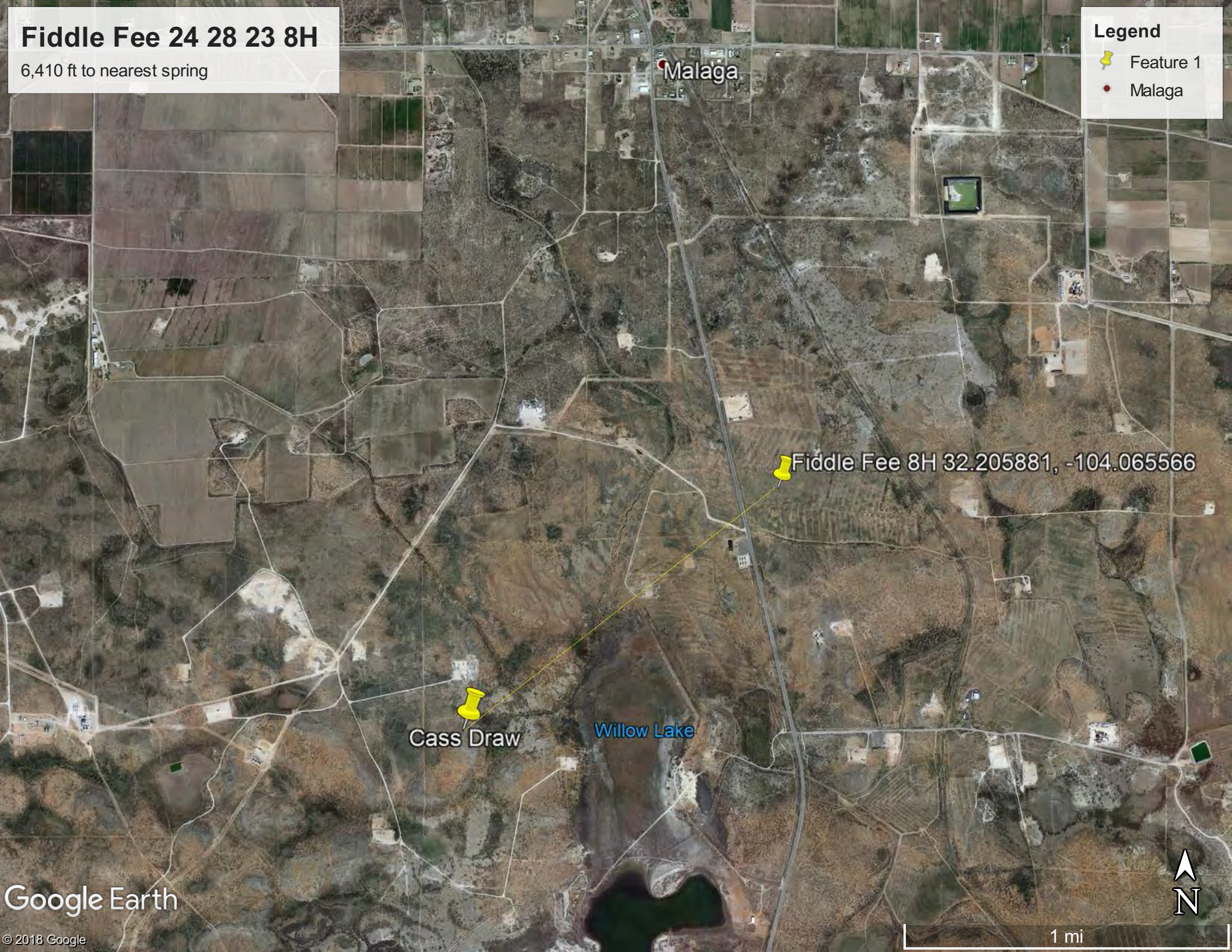
- Riverine


Fiddle Fee 8
Nearest freshwater well: 774ft.
Legend
Feature 1
Fiddle Fee 8
Freshwater Well
Google Earth
© 2018 Google
600 m
N


Fiddle Fee 24 28 23 8H
6,410 ft to nearest spring
Legend
Feature 1
Malaga
Malaga
Fiddle Fee 8H 32.205881, -104.065566
Cass Draw
Willow Lake
Google Earth
© 2018 Google
N
1 mi

U.S. Fish and Wildlife Service
National Wetlands Inventory

Fiddle Fee 6H 9H CTB 4652 ft wetland

March 25, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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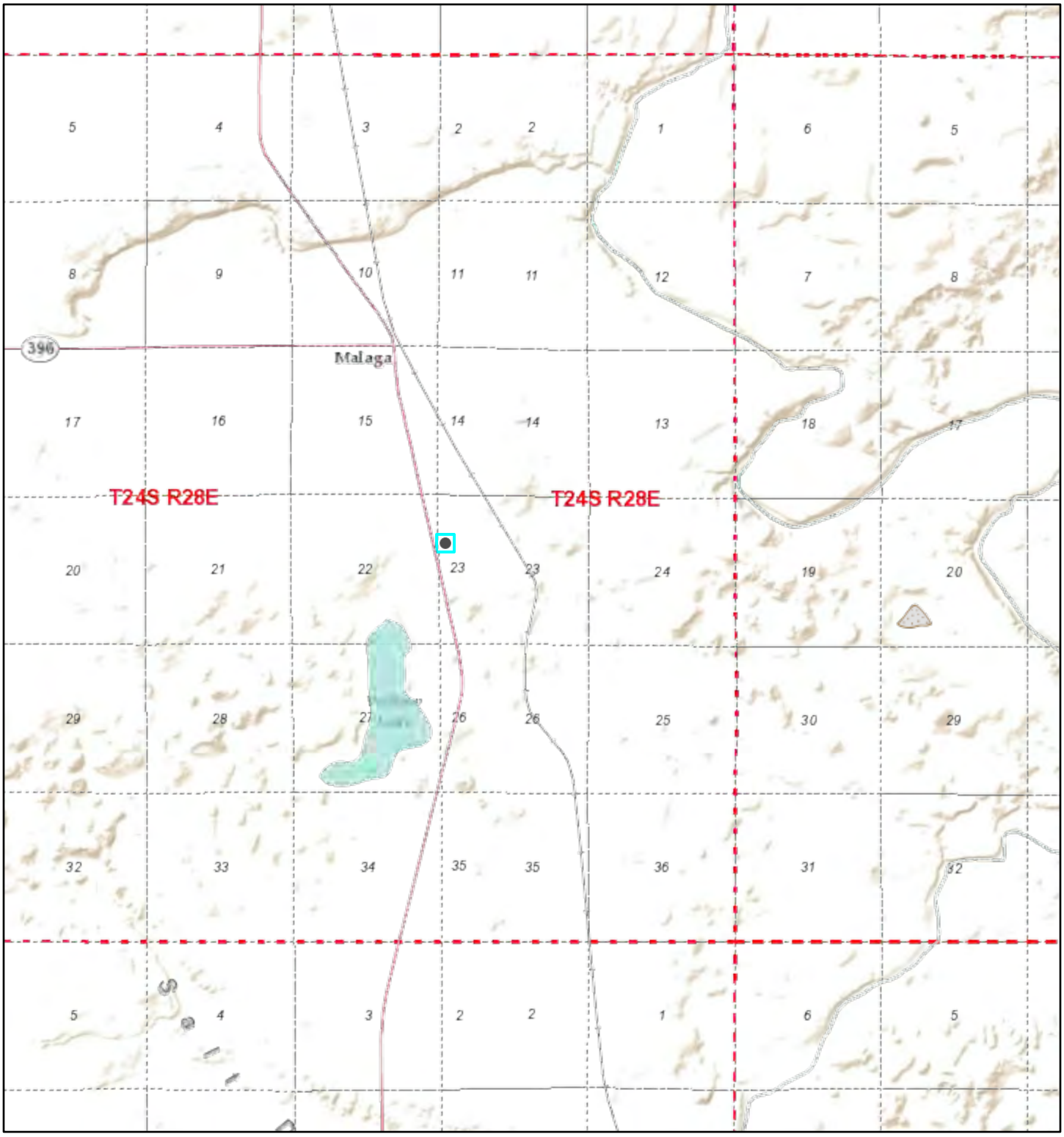
Active Mines in New Mexico



3/26/2019, 10:18:56 AM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

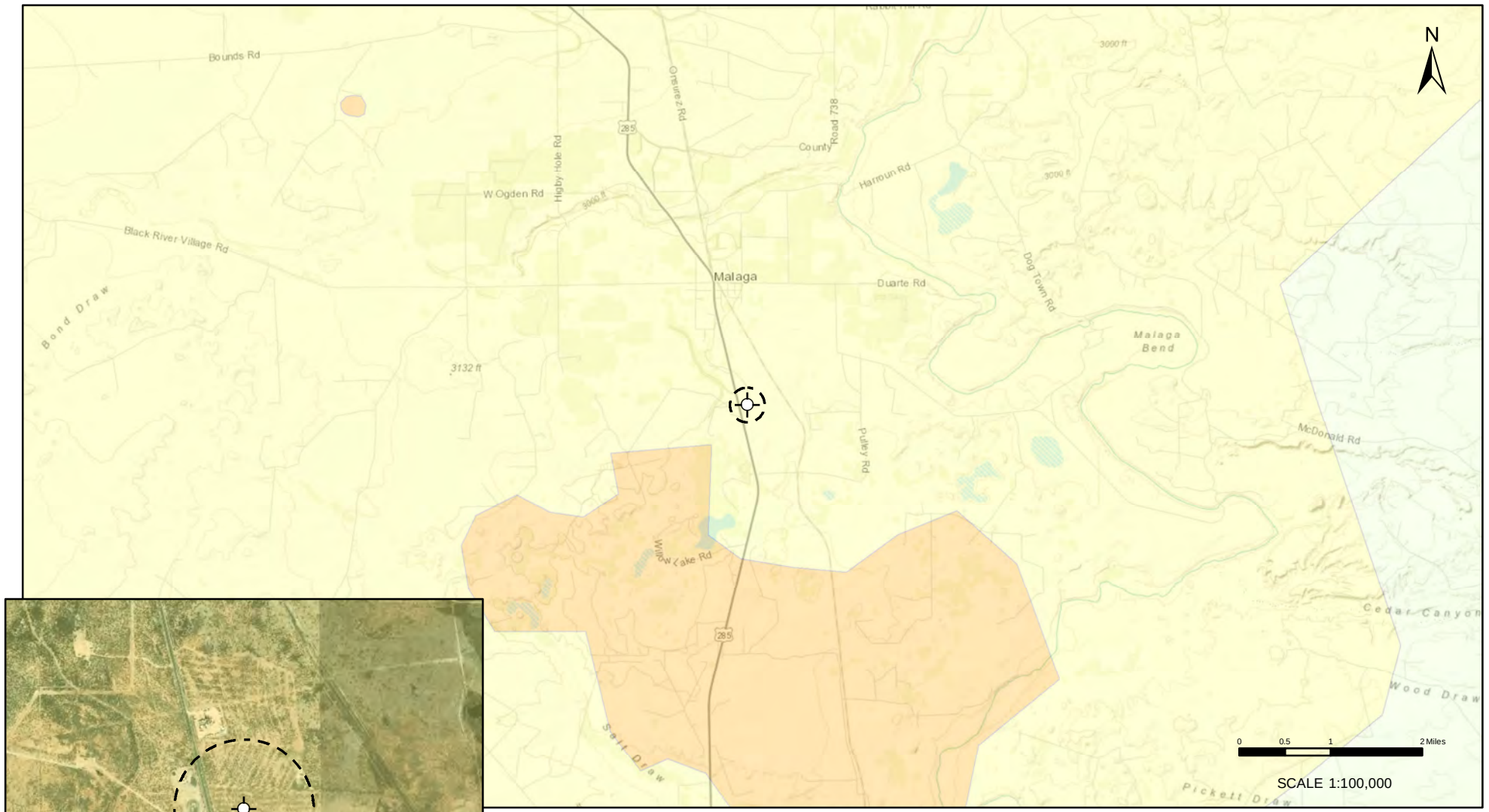
Registered Mines

Salt

Bureau of Land Management Geographic Coordinate Database, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)



LEGEND

SITE

1000 FT BUFFER

KARST POTENTIAL

CRITICAL

HIGH

MEDIUM

LOW

Notes: Aerial Image from ESRI Digital Globe 2017

Karst Potential
Fiddle Fee 8H

DRAWN:	NM
APPROVED:	KM
DATE:	MAR 27/19

FIGURE: 1

VERTEX

VERSATILITY. EXPERTISE.

National Flood Hazard Layer FIRMette

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/26/2019 at 12:28:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

ATTACHMENT 5

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

Customer:	MARATHON OIL COMPANY	Ticket #:	700-993598
Customer #:	CRI3930	Bid #:	O6UJ9A000AM5
Ordered by:	CALLIE KARRIGAN	Date:	3/21/2019
AFE #:		Generator:	MARATHON OIL COMPANY
PO #:		Generator #:	
Manifest #:	375864	Well Ser. #:	44541
Manif. Date:	3/21/2019	Well Name:	FIDDLE 24 28 23 WA
Hauler:	WESCOM, INC	Well #:	006H
Driver	RAND	Field:	
Truck #	231	Field #:	
Card #		Rig:	NON-DRILLING
Job Ref #		County	EDDY (NM)

Facility: CRI

Product / Service	Quantity Units
Contaminated Soil (RCRA Exempt)	8.00 yards

	Cell	pH	Cl	Cond.	%Solids	TDS	PCI/GM	MR/HR	H2S	% Oil	Weight
Lab Analysis.	50/51	0.00	0.00	0.00	0						

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

Driver/ Agent Signature

_____

R360 Representative Signature

_____

Customer Approval

THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST

(PLEASE PRINT)

Company Man Contact Information
Name Callie Kerrigan
Phone No.

GENERATOR

NO. 375864

Operator No. Marathon
Operators Name
Address
City, State, Zip
Phone No.

Permit/RRC No.
Lease/Well Name & No. Fiddle Fee 2-6-9 CTB
County
API No.
Rig Name & No.
AFE/PO No. ccH 29714900

EXEMPT E&P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)

Oil Based Muds		NON-INJECTABLE WATERS	INJECTABLE WATERS
Oil Based Cuttings		Washout Water (Non-Injectable)	Washout Water (Injectable)
Water Based Muds		Completion Fluid/Flow back (Non-Injectable)	Completion Fluid/Flow back (Injectable)
Water Based Cuttings		Produced Water (Non-Injectable)	Produced Water (Injectable)
Produced Formation Solids		Gathering Line Water/Waste (Non-Injectable)	Gathering Line Water/Waste (Injectable)
Tank Bottoms		INTERNAL USE ONLY	OTHER EXEMPT WASTES (type and generation process of the waste)
E&P Contaminated Soil	X	Truck Washout (exempt waste)	
Gas Plant Waste			

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

NON-EXEMPT E&P Waste/Service Identification and Amount
All non-exempt E&P waste must be analysed and be below the threshold limits for toxicity (TCLP), Ignitability, Corrosivity and Reactivity.

Non-Exempt Other *please select from **Non-Exempt Waste List** on back

QUANTITY 8 B - BARRELS L - LIQUID (Y - YARDS) E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

☒ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per load basis only)

☐ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

☐ EMERGENCY NON-OILFEILD: Emergency non-hazradous, non-oilfeild waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a desciption of the waste must accompany this form)

Kevin Waliezer in behalf of Callie Kerrigan — (PRINT) AUTHORIZED AGENTS NAME
3/21/19 — DATE
SIGNATURE

TRANSPORTER

Transporter's Name Wescom
Address
Phone No.

Driver's Name Raul Lobbestael
Print Name
Phone No. 218 464 9613
Truck No. 231

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

3/21/19 — SHIPMENT DATE
DRIVER'S SIGNATURE
4/21/19 — DELIVERY DATE
DRIVER'S SIGNATURE

DISPOSAL FACILITY

TRUCK TIME STAMP
IN: OUT:

RECEIVING AREA
Name/No. [illegible]

Site Name/Permit No. Halfway Facility / NM1-006
Address 6601 Hobbs Hwy US 62/180 Mile Marker 66 Carlsbad, NM 88220
Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES NO If YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

TANK BOTTOMS

	Feet	Inches				
1st Gauge			BS&W/BBLS Received		BS&W (%)	
2nd Gauge			Free Water			
Received			Total Received			

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why?

[illegible] — NAME (PRINT)
3/21 — DATE
[illegible] — TITLE
SIGNATURE

C-138 White - R360 ORIGINAL Yellow - TRANSPORTER COPY Pink - GENERATOR SITE COPY Gold - RETURN TO GENERATOR Version 1

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

Customer:	MARATHON OIL COMPANY	Ticket #:	700-993510
Customer #:	CRI3930	Bid #:	O6UJ9A000AM5
Ordered by:	CALLIE KARRIGAN	Date:	3/21/2019
AFE #:		Generator:	MARATHON OIL COMPANY
PO #:		Generator #:	
Manifest #:	369871	Well Ser. #:	44541
Manif. Date:	3/21/2019	Well Name:	FIDDLE 24 28 23 WA
Hauler:	WESCOM, INC	Well #:	006H
Driver	RAND	Field:	
Truck #	231	Field #:	
Card #		Rig:	NON-DRILLING
Job Ref #		County	EDDY (NM)

Facility: CRI

Product / Service	Quantity Units
Contaminated Soil (RCRA Exempt)	8.00 yards

	Cell	pH	Cl	Cond.	%Solids	TDS	PCI/GM	MR/HR	H2S	% Oil	Weight
Lab Analysis:	50/51	0.00	0.00	0.00	0						

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

Driver/ Agent Signature **R360 Representative Signature**

_____ _____

Customer Approval

THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST

(PLEASE PRINT)

Company Man Contact Information
Name Callie Kerrigan
Phone No.

GENERATOR

NO. 369871

Operator No. marathon
Operators Name
Address
City, State, Zip
Phone No.

Permit/RRC No.
Lease/Well Name & No. Fiddle Fee GH 9H-21H
County Eddy
API No.
Rig Name & No.
AFE/PO No. CC# 79714900

EXEMPT E&P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)

Oil Based Muds		NON-INJECTABLE WATERS	INJECTABLE WATERS
Oil Based Cuttings		Washout Water (Non-Injectable)	Washout Water (Injectable)
Water Based Muds		Completion Fluid/Flow back (Non-Injectable)	Completion Fluid/Flow back (Injectable)
Water Based Cuttings		Produced Water (Non-Injectable)	Produced Water (Injectable)
Produced Formation Solids		Gathering Line Water/Waste (Non-Injectable)	Gathering Line Water/Waste (Injectable)
Tank Bottoms		INTERNAL USE ONLY	OTHER EXEMPT WASTES (type and generation process of the waste)
E&P Contaminated Soil	X	Truck Washout (exempt waste)	
Gas Plant Waste			

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

NON-EXEMPT E&P Waste/Service Identification and Amount
All non-exempt E&P waste must be analysed and be below the threshold limits for toxicity (TCLP), Ignitability, Corrosivity and Reactivity.

Non-Exempt Other *please select from **Non-Exempt Waste List** on back

QUANTITY 8 B - BARRELS L - LIQUID (Y - YARDS) E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

☒ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per load basis only)

☐ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

☐ EMERGENCY NON-OILFEILD: Emergency non-hazradous, non-oilfeild waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a desciption of the waste must accompany this form)

Kevin Waliezer in behalf of Callie Kerrigan — (PRINT) AUTHORIZED AGENTS NAME
3/21/19 — DATE
SIGNATURE

TRANSPORTER

Transporter's Name Wescom
Address
Phone No.

Driver's Name Rand Lobbestael
Print Name
Phone No. 218 464 8613
Truck No. 231

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

3/21/19 — SHIPMENT DATE
DRIVER'S SIGNATURE
3/21/19 — DELIVERY DATE
DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: OUT:

DISPOSAL FACILITY

RECEIVING AREA
Name/No.

Site Name/Permit No. Halfway Facility / NM1-006
Phone No. 575-393-1079
Address 6601 Hobbs Hwy US 62/180 Mile Marker 66 Carlsbad, NM 88220

NORM READINGS TAKEN? (Circle One) YES (NO) If YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

TANK BOTTOMS

	Feet	Inches
1st Gauge		
2nd Gauge		
Received		

BS&W/BBLS Received		BS&W (%)	
Free Water			
Total Received			

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why?

[signature] — NAME (PRINT)
3-21 — DATE
[signature] — TITLE
SIGNATURE

C-138 White - R360 ORIGINAL Yellow - TRANSPORTER COPY Pink - GENERATOR SITE COPY Gold - RETURN TO GENERATOR Version 1

FRANCO'S TRUCKING, LLC

Bus. 575.887.0164 • Cell 575.706.2565 • Fax 575.887.0168
Office/Shop: 1012 Haston Road • Carlsbad, NM 88220

NO 178257

Date 3-23-19

Company Marathon Oil

Location Fiddle Fee 24 28 23 4,7,8 H

Deliver to SWD

Seal on _____ Seal Off _____

Top Gauge _____ Bottom Gauge _____

Tank No. _____ Tank Size _____

START TIME ____:____ AM PM END TIME ____:____ AM PM TOTAL HOURS ____

☐ Fresh water	_____ Barrels	
☐ Brine water	_____ Barrels	
☑ Produced water	10 Barrels	
☐ Other _____	_____ Barrels	
☐ 3rd Party	Hours @	
☐ KCL	_____ Barrels	
Work on location		
Cleaning Containment		
From 12:00 pm To 2:30 pm = 2.5 hrs.		
	TAX	
	TOTAL	

Work Performed By Daniel Tena

Signature _____

4 PT. WATER/KCL TICKETS

NICHOLS PRINTING, INC.

ATTACHMENT 6

Table 3. Soil Characterization - Salinity and Petroleum Hydrocarbon Parameters
Client Name: Marathon Oil Permian LLC
Site Name: Fiddle Fee 24 28 23 008 TB
Project #: 19E-00614-005
Lab Report(s): March 30, 2019

Table 3. Soil Analysis - March 30, 2019

Sample Description			Field Screening			Petroleum Hydrocarbons												Inorganic
						Volatile							Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFla	Quantab Result (High/Low)	Benzene	Toluene	Ethylbenzene	Xylenes (m,p)	Xylenes (o)	Xylenes (Total)	BTEX (Total)	Gasoline Range Hydrocarbons (GRO)	Diesel Range Organics (DRO)	Motor Oil Hydrocarbons (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Fiddle Fee 24 28 23 8h SS-19-01	**0**	3/30/2019	1	1,040	High	<0.00202	<0.00202	<0.00202	<0.00403	<0.00202	<0.00202	<0.00202	<14.9	132	15.8	147.8	148	20,600
Fiddle Fee 24 28 23 8h SS-19-01	**2**	3/30/2019	1	580	High	<0.00199	<0.00199	<0.00199	<0.00398	<0.00199	<0.00199	<0.00199	<14.9	155	42.8	169.9	198	10,700
Fiddle Fee 24 28 23 8h SS-19-02	**0**	3/30/2019	1	170	Low 376	<0.00202	<0.00202	<0.00202	<0.00400	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	786
Fiddle Fee 24 28 23 8h SS-19-02	**2**	3/30/2019	1	100	Low 532	<0.00201	<0.00201	<0.00201	<0.00402	<0.00201	<0.00201	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	690

ATTACHMENT 7

From:	Dennis Williams
To:	Hamlet, Robert, EMNRD; Venegas, Victoria, EMNRD; Bratcher, Mike, EMNRD
Cc:	Dhugal Hanton; Robyn Fisher
Subject:	RE: Marathon Oil Company - Fiddle Fee 3 4 7 8 CTB 8H Liner inspection Notification
Date:	April 1, 2019 10:09:01 AM

Good morning. Apologies.
Site name correction

From: Dennis Williams
Sent: April 1, 2019 10:49 AM
To: 'Karrigan, Callie N. (MRO)' <cnkarrigan@marathonoil.com>; 'Hamlet, Robert, EMNRD' <Robert.Hamlet@state.nm.us>; 'Venegas, Victoria, EMNRD' <Victoria.Venegas@state.nm.us>; 'Bratcher, Mike, EMNRD' <mike.bratcher@state.nm.us>
Cc: Dhugal Hanton <DHanton@vertex.ca>; icastro@marathonoil.com; Robyn Fisher <RFisher@vertex.ca>
Subject: RE: Marathon Oil Company - Fiddle Fee TB 2H Liner inspection Notification
Good morning.
Please accept this email as notification that Vertex will be conducting a liner inspection on Wednesday April 3rd 2019 @ 11:00 am
Robyn Fisher will be the on site Vertex rep.
If you have any questions or would like to facilitate a meeting please reply back to this email.

From: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>
Sent: March 21, 2019 10:05 AM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Cc: Dhugal Hanton <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: Marathon Oil Company - Initial C141 - Fiddle Fee TB 2H
All,
Please see the corrected initial C141 for the release at the Fiddle Fee. My apologies on the error.
Callie

From: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Sent: Tuesday, March 19, 2019 9:47 AM
To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>; EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Cc: Dhugal Hanton <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: [External] RE: Marathon Oil Company - Initial C141 - Fiddle Fee TB 2H
Beware of links/attachments.
Callie,
This C-141 is for a release in Eddy County, OCD District 2. Please correct and resubmit to me and the following:
Rob Hamlet * robert.hamlet@state.nm.us
Victoria Venegas * victoria.venegas@state.nm.us
If you look at the Range number (S-T-R), Range 32e and up will be Lea County, District 1 Hobbs. Range 31e and below will be District 2 Artesia. Another way to distinguish the two Districts is the API number. The third, fourth and fifth number denote the county, with 015 being Eddy County and 025

being Lea County.
Thanks,
Mike Bratcher
NMOCD District 2
811 South First Street
Artesia, NM 88210
575-748-1283 Ext 108

From: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>
Sent: Tuesday, March 19, 2019 7:59 AM
To: EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Cc: Dhugal Hanton <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: [EXT] Marathon Oil Company - Initial C141 - Fiddle Fee TB 2H
Please see the attached C141 and recovery tickets.
Callie

From: Karrigan, Callie N. (MRO)
Sent: Saturday, March 16, 2019 5:43 PM
To: 'emnrd-ocd-district1spills@state.nm.us' <emnrd-ocd-district1spills@state.nm.us>; 'jim.griswold@state.nm.us' <jim.griswold@state.nm.us>
Cc: 'Dhugal Hanton' <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: Marathon Oil Company - 24 hour notification - Fiddle Fee TB 2H
Good evening,
This morning at 9:24 am, the Operator reported the mechanical seal on the water transfer pump failed resulting in a release into lined containment. Approximately 125 bbls of produced water has been recovered with 1-2 additional loads anticipated. Approximately 1 barrel of fluid was recovered outside the battery due to an overspray.
Please let me know if you have any questions.
Thank you,
Callie Karrigan
HES Professional – Environmental
Office: 575-297-0956
Cell: 405-202-1028

From:	Dennis Williams
To:	cnkarrigan; Hamlet, Robert, EMNRD; Venegas, Victoria, EMNRD; Bratcher, Mike, EMNRD
Cc:	Dhugal Hanton; icastro@marathonoil.com
Subject:	Marathon Oil Company - Fiddle Fee TB 2H Confirmatory Sample Notification
Date:	March 29, 2019 10:00:42 AM

Good morning.

Vertex will be taking confirmatory samples March 30 2019 at 11:00 am.

Austin Harris will be the on site Vertex rep.

If you have any questions or would like to facilitate a meeting please reply back to this email.

Please accept this email as notification of confirmatory sampling.

From: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>
Sent: March 21, 2019 10:05 AM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Cc: Dhugal Hanton <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: Marathon Oil Company - Initial C141 - Fiddle Fee TB 2H

All,

Please see the corrected initial C141 for the release at the Fiddle Fee. My apologies on the error.

Callie

From: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Sent: Tuesday, March 19, 2019 9:47 AM
To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>; EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Cc: Dhugal Hanton <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: [External] RE: Marathon Oil Company - Initial C141 - Fiddle Fee TB 2H

Beware of links/attachments.
Callie,

This C-141 is for a release in Eddy County, OCD District 2. Please correct and resubmit to me and the following:

Rob Hamlet * robert.hamlet@state.nm.us
Victoria Venegas * victoria.venegas@state.nm.us

If you look at the Range number (S-T-R), Range 32e and up will be Lea County, District 1 Hobbs.

Range 31e and below will be District 2 Artesia. Another way to distinguish the two Districts is the API number. The third, fourth and fifth number denote the county, with 015 being Eddy County and 025 being Lea County.

Thanks,

Mike Bratcher
NMOCD District 2
811 South First Street
Artesia, NM 88210
575-748-1283 Ext 108

From: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>
Sent: Tuesday, March 19, 2019 7:59 AM
To: EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>
Cc: Dhugal Hanton <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: [EXT] Marathon Oil Company - Initial C141 - Fiddle Fee TB 2H

Please see the attached C141 and recovery tickets.

Callie

From: Karrigan, Callie N. (MRO)
Sent: Saturday, March 16, 2019 5:43 PM
To: 'emnrd-ocd-district1spills@state.nm.us' <emnrd-ocd-district1spills@state.nm.us>; 'jim.griswold@state.nm.us' <jim.griswold@state.nm.us>
Cc: 'Dhugal Hanton' <DHanton@vertex.ca>; Dennis Williams <DWilliams@vertex.ca>
Subject: Marathon Oil Company - 24 hour notification - Fiddle Fee TB 2H

Good evening,

This morning at 9:24 am, the Operator reported the mechanical seal on the water transfer pump failed resulting in a release into lined containment. Approximately 125 bbls of produced water has been recovered with 1-2 additional loads anticipated. Approximately 1 barrel of fluid was recovered outside the battery due to an overspray.

Please let me know if you have any questions.

Thank you,

Callie Karrigan
HES Professional – Environmental
Office: 575-297-0956
Cell: 405-202-1028

Dennis Williams
Environmental Earthworks Advisor

Vertex Resource Services Inc
1101 Callaway Drive Unit 2103 New Mexico
Carlsbad, 88220

P 281.977.7886
C 575.361.1137
F

www.vertex.ca

ATTACHMENT 8

Certificate of Analysis Summary 619716

Marathon Oil Company, Tulsa, OK

Project Name: Fiddle Fee 24 28 23 8H

Project Id: 19E-00614
Contact: Callie Karrigan
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue Apr-02-19 11:45 am
Report Date: 09-APR-19
Project Manager: Kalei Stout

Analysis Requested															
	Lab Id:	619716-001		619716-002		619716-003		619716-004							
	Field Id:	Fiddle Fee 24 28 23 8H SS-1		Fiddle Fee 24 28 23 8H SS-1		Fiddle Fee 24 28 23 8H SS-1		Fiddle Fee 24 28 23 8H SS-1							
	Depth:														
	Matrix:	SOIL		SOIL		SOIL		SOIL							
	Sampled:	Mar-30-19 10:14		Mar-30-19 10:15		Mar-30-19 11:28		Mar-30-19 11:50							
BTEX by EPA 8021B	***Extracted:***	Apr-08-19 13:00		Apr-08-19 13:00		Apr-08-19 13:00		Apr-08-19 13:00							
	Analyzed:	Apr-09-19 04:19		Apr-09-19 04:38		Apr-09-19 04:57		Apr-09-19 05:16							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201						
Toluene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201						
Ethylbenzene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201						
m,p-Xylenes		<0.00403	0.00403	<0.00398	0.00398	<0.00400	0.00400	<0.00402	0.00402						
o-Xylene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201						
Total Xylenes		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201						
Total BTEX		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201						
Inorganic Anions by EPA 300	***Extracted:***	Apr-04-19 14:00		Apr-04-19 14:00		Apr-04-19 14:00		Apr-04-19 14:00							
	Analyzed:	Apr-05-19 20:54		Apr-05-19 21:15		Apr-05-19 21:21		Apr-05-19 21:28							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		20600	250	10700	99.4	786	50.1	690	24.8						
TPH by SW8015 Mod	***Extracted:***	Apr-05-19 17:00		Apr-05-19 17:00		Apr-05-19 17:00		Apr-05-19 17:00							
	Analyzed:	Apr-06-19 10:39		Apr-06-19 11:00		Apr-06-19 11:21		Apr-06-19 11:42							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<14.9	14.9	<15.0	15.0	<15.0	15.0						
Diesel Range Organics (DRO)		132	14.9	155	14.9	<15.0	15.0	<15.0	15.0						
Motor Oil Range Hydrocarbons (MRO)		15.8	14.9	42.8	14.9	<15.0	15.0	<15.0	15.0						
Total TPH		148	14.9	198	14.9	<15.0	15.0	<15.0	15.0						

Kalei Stout
Midland Laboratory Director

Analytical Report 619716

for

Marathon Oil Company

Project Manager: Callie Karrigan

Fiddle Fee 24 28 23 8H

19E-00614

09-APR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

09-APR-19

Project Manager: **Callie Karrigan**
Marathon Oil Company
P. O. Box 22164
Tulsa, OK 74121-2164

Reference: XENCO Report No(s): **619716**
Fiddle Fee 24 28 23 8H
Project Address: Eddy County, New Mexico

Callie Karrigan :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 619716. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 619716 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kalei Stout
Midland Laboratory Director

Sample Cross Reference 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Fiddle Fee 24 28 23 8H SS-19-01 (0')	S	03-30-19 10:14		619716-001
Fiddle Fee 24 28 23 8H SS-19-02 (0')	S	03-30-19 10:15		619716-002
Fiddle Fee 24 28 23 8H SS-19-01 (2')	S	03-30-19 11:28		619716-003
Fiddle Fee 24 28 23 8H SS-19-02 (2')	S	03-30-19 11:50		619716-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3085025 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 619716-004,619716-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-01 (0')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-001	Date Collected:	03.30.19 10.14		

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.04.19 14.00	Basis:	Wet Weight
Seq Number:	3084861				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20600**	250	mg/kg	04.05.19 20.54		50

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.05.19 17.00	Basis:	Wet Weight
Seq Number:	3084906				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.06.19 10.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	**132**	14.9	mg/kg	04.06.19 10.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**15.8**	14.9	mg/kg	04.06.19 10.39		1
Total TPH	PHC635	**148**	14.9	mg/kg	04.06.19 10.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	04.06.19 10.39	
o-Terphenyl	84-15-1	89	%	70-135	04.06.19 10.39	

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-01 (0')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-001	Date Collected:	03.30.19 10.14		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 13.00	Basis:	Wet Weight
Seq Number:	3085025				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.09.19 04.19	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.09.19 04.19	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.09.19 04.19	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.09.19 04.19	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.09.19 04.19	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.09.19 04.19	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.09.19 04.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	126	%	70-130	04.09.19 04.19	
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.09.19 04.19	

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-02 (0')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-002	Date Collected:	03.30.19 10.15		

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.04.19 14.00	Basis:	Wet Weight
Seq Number:	3084861				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10700**	99.4	mg/kg	04.05.19 21.15		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.05.19 17.00	Basis:	Wet Weight
Seq Number:	3084906				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.06.19 11.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	**155**	14.9	mg/kg	04.06.19 11.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**42.8**	14.9	mg/kg	04.06.19 11.00		1
Total TPH	PHC635	**198**	14.9	mg/kg	04.06.19 11.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	04.06.19 11.00	
o-Terphenyl	84-15-1	92	%	70-135	04.06.19 11.00	

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-02 (0')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-002	Date Collected:	03.30.19 10.15		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 13.00	Basis:	Wet Weight
Seq Number:	3085025				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.09.19 04.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.09.19 04.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.09.19 04.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.09.19 04.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.09.19 04.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.09.19 04.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.09.19 04.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	132	%	70-130	04.09.19 04.38	**
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.09.19 04.38	

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-01 (2')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-003	Date Collected:	03.30.19 11.28		

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.04.19 14.00	Basis:	Wet Weight
Seq Number:	3084861				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**786**	50.1	mg/kg	04.05.19 21.21		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.05.19 17.00	Basis:	Wet Weight
Seq Number:	3084906				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.06.19 11.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.06.19 11.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.06.19 11.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.06.19 11.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	04.06.19 11.21	
o-Terphenyl	84-15-1	87	%	70-135	04.06.19 11.21	

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-01 (2')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-003	Date Collected:	03.30.19 11.28		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 13.00	Basis:	Wet Weight
Seq Number:	3085025				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.09.19 04.57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.09.19 04.57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.09.19 04.57	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.09.19 04.57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.09.19 04.57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.09.19 04.57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.09.19 04.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.09.19 04.57	
4-Bromofluorobenzene	460-00-4	116	%	70-130	04.09.19 04.57	

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-02 (2')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-004	Date Collected:	03.30.19 11.50		

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.04.19 14.00	Basis:	Wet Weight
Seq Number:	3084861				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**690**	24.8	mg/kg	04.05.19 21.28		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.05.19 17.00	Basis:	Wet Weight
Seq Number:	3084906				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.06.19 11.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.06.19 11.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.06.19 11.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.06.19 11.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	04.06.19 11.42	
o-Terphenyl	84-15-1	89	%	70-135	04.06.19 11.42	

Certificate of Analytical Results 619716

Marathon Oil Company, Tulsa, OK

Fiddle Fee 24 28 23 8H

Sample Id:	**Fiddle Fee 24 28 23 8H SS-19-02 (2')**	Matrix:	Soil	Date Received:	04.02.19 11.45
Lab Sample Id:	619716-004	Date Collected:	03.30.19 11.50		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 13.00	Basis:	Wet Weight
Seq Number:	3085025				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.09.19 05.16	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.09.19 05.16	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.09.19 05.16	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.09.19 05.16	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.09.19 05.16	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.09.19 05.16	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.09.19 05.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	133	%	70-130	04.09.19 05.16	**
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.09.19 05.16	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 619716

Marathon Oil Company

Fiddle Fee 24 28 23 8H

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084861 Matrix: Solid Date Prep: 04.04.19
MB Sample Id: 7675138-1-BLK LCS Sample Id: 7675138-1-BKS LCSD Sample Id: 7675138-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	245	98	252	101	90-110	3	20	mg/kg	04.05.19 18:38	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084861 Matrix: Soil Date Prep: 04.04.19
Parent Sample Id: 619630-002 MS Sample Id: 619630-002 S MSD Sample Id: 619630-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	145	250	396	100	419	110	90-110	6	20	mg/kg	04.05.19 20:34	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084861 Matrix: Soil Date Prep: 04.04.19
Parent Sample Id: 619708-001 MS Sample Id: 619708-001 S MSD Sample Id: 619708-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.02	252	265	104	267	105	90-110	1	20	mg/kg	04.05.19 18:59	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3084906 Matrix: Solid Date Prep: 04.05.19
MB Sample Id: 7675253-1-BLK LCS Sample Id: 7675253-1-BKS LCSD Sample Id: 7675253-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	933	93	987	99	70-135	6	20	mg/kg	04.06.19 04:33	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1070	107	70-135	6	20	mg/kg	04.06.19 04:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		119		124		70-135	%	04.06.19 04:33
o-Terphenyl	94		116		122		70-135	%	04.06.19 04:33

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 619716

Marathon Oil Company

Fiddle Fee 24 28 23 8H

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3084906 Matrix: Soil Date Prep: 04.05.19
Parent Sample Id: 619598-001 MS Sample Id: 619598-001 S MSD Sample Id: 619598-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	919	92	916	92	70-135	0	20	mg/kg	04.06.19 05:34	
Diesel Range Organics (DRO)	8.12	998	992	99	1010	101	70-135	2	20	mg/kg	04.06.19 05:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		116		70-135	%	04.06.19 05:34
o-Terphenyl	112		108		70-135	%	04.06.19 05:34

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3085025 Matrix: Solid Date Prep: 04.08.19
MB Sample Id: 7675344-1-BLK LCS Sample Id: 7675344-1-BKS LCSD Sample Id: 7675344-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0899	90	0.0854	85	70-130	5	35	mg/kg	04.09.19 01:30	
Toluene	<0.00200	0.100	0.0919	92	0.0888	88	70-130	3	35	mg/kg	04.09.19 01:30	
Ethylbenzene	<0.00200	0.100	0.0938	94	0.0906	90	70-130	3	35	mg/kg	04.09.19 01:30	
m,p-Xylenes	<0.00102	0.200	0.188	94	0.182	91	70-130	3	35	mg/kg	04.09.19 01:30	
o-Xylene	<0.00200	0.100	0.0969	97	0.0944	93	70-130	3	35	mg/kg	04.09.19 01:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		97		96		70-130	%	04.09.19 01:30
4-Bromofluorobenzene	106		102		103		70-130	%	04.09.19 01:30

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3085025 Matrix: Soil Date Prep: 04.08.19
Parent Sample Id: 620072-004 MS Sample Id: 620072-004 S MSD Sample Id: 620072-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0770	77	0.0740	75	70-130	4	35	mg/kg	04.09.19 02:08	
Toluene	<0.000457	0.100	0.0782	78	0.0754	76	70-130	4	35	mg/kg	04.09.19 02:08	
Ethylbenzene	<0.000567	0.100	0.0779	78	0.0749	76	70-130	4	35	mg/kg	04.09.19 02:08	
m,p-Xylenes	<0.00102	0.201	0.157	78	0.150	76	70-130	5	35	mg/kg	04.09.19 02:08	
o-Xylene	<0.000346	0.100	0.0807	81	0.0767	77	70-130	5	35	mg/kg	04.09.19 02:08	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	04.09.19 02:08
4-Bromofluorobenzene	104		105		70-130	%	04.09.19 02:08

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Analysis Request of Chain of Custody Record

6/19716

Client Name: Marathon Oil Company	**Site Manager:** Callie Karrigan
Project Name: Fiddle Fee 24 28 23 8H	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 19E-00614
Invoice to: Callie Karrigan (cnkarrigan@marathonoil.com)	
Receiving Laboratory: Xenco	**Sampler Signature:**
Comments: send the results to permian@vertex.ca, icastro@marathonoil.com	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD:	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)
	Fiddle Fee 24 28 23 8H SS19-01 [0']	30/03/2019	10:14		x				x			1	N
	Fiddle Fee 24 28 23 8H SS19-02 [0']	30/03/2019	10:15		x				x			1	N
	Fiddle Fee 24 28 23 8H SS19-01 [2']	30/03/2019	11:28		x				x			1	N
	Fiddle Fee 24 28 23 8H SS19-02 [2']	30/03/2019	11:50		x				x			1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B / BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloridem (method 300)	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
X		x												x							
X		x												x							
X		x												x							
X		x												x							

Relinquished by: Austin Harris — Date: 01/04/2019 — Time: 9:37
Received by: Robyn Fisher — Date: 01/04/2019 — Time: 9:38

Relinquished by: Robyn Fisher — Date: 01/04/2019 — Time:
Received by: — Date: 4/1/19 — Time: 10:39

Relinquished by: — Date: 4/1/19 — Time: 15:30
Received by: — Date: 4/2/19 — Time: 1145

LAB USE ONLY
Sample Temperature
0.5/0.4
-0.1/0

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr
☐ Rush Charges Authorized
☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: 7748 9877 6803

ORIGINAL COPY

Final 1.000

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ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST

CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 01APR19
ACTWGT: 22.00 LB
CAD: 101813706/INET4100
DIMS: 18x12x17 IN

BILL RECIPIENT

TO HOLD FOR XENCO
FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S
MIDLAND TX 79711
(806) 794-1296 REF:
INV:
PO: DEPT:

565J1/D7E5/23AD

FedEx Express

TUE - 02 APR HOLD
STANDARD OVERNIGHT

TRK# 0201 7748 4877 6803

HLD
MAFA

41 MAFA

TX-US **LBB**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Marathon Oil Company

Date/ Time Received: 04/02/2019 11:45:00 AM

Work Order #: 619716

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 04/02/2019

Brianna Teel

Checklist reviewed by: Kalei Stout Date: 04/03/2019

Kalei Stout