Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nAB1722641387
District RP	2RP-4310
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: ___Melodie Sanjari_____ Title: _____HES Professional_____

Signature: *Melodie Sanjari* Date: __5/24/2023_____

email: __msanjari@marathonoil.com_____ Telephone: _____575-888-8753_____

OCD Only

Received by: ____Jocelyn Harimon_____ Date: ____05/25/2023____

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

Closure Approved by: _____ Date: ____05/25/2023____

Printed Name: ____Jocelyn Harimon_____ Title: ____Environmental Specialist_____

Previously submitted via ACO on 1/11/2019. Resubmission details with requested additional information from 3/28/2023 denial included in pages 2-11. Additional pages of complete C141 within original report document

APPENDIX A

CARMONA RESOURCES

CARMONA RESOURCES

May 18, 2023

Mike Bratcher
District Supervisor
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Amendment to Closure Report
Bootlegger 21 Federal Com #1H
Marathon Oil Corporation
2RP-4310
Site Location: Unit P, S16, T20S, R29E
(Lat 32.56687638º, Long -104.07262819º)
Eddy County, New Mexico

Mr. Bratcher:

On behalf of Marathon Oil Corporation (Marathon), Carmona Resource, LLC has prepared this letter to document additional site activities for the Bootlegger 21 Federal Com #1H. The site is located at the GPS 32.56687638°, -104.07262819° within Unit P, S16, T20S, R29E in Eddy County, New Mexico.

1.0 Site Information and Background

1RP-4310

On April 15, 2023 the New Mexico OCD denied the closure report for the following reason: This report does not include a scaled site map diagram with sample points clearly marked. The release area is not clearly shown in the site maps provided. The photographs provided show that the release occurred inside as well as outside the contained area; however, the sampling appears only to be outside of the contained area. A liner integrity inspection would be required if the release was also within lined containment.

2.0 Liner Inspection Activities

Before performing the liner inspection, the NMOCD division office was notified via email on May 11, 2023, per Subsection D of 19.15.29.12 NMAC. On May 15, 2023, Carmona Resources, LLC conducted liner inspection activities to assess the liner's integrity within the facility and determined that the liner was intact with no integrity issues. Refer to the Photolog.

3.0 Conclusions

Based on the liner inspection throughout the facility, no further actions are required at the site. The final C-141 is attached, and Marathon formally requests the closure of the spill. If you have any questions regarding this report or need additional information, please contact us at 432-813-1992.

Sincerely,
Carmona Resources, LLC

Mike Carmona
Environmental Manager

Conner Moehring
Sr. Project Manager

310 West Wall Street, Suite 415
Midland, Texas 79701
432.813.1992

From: Clint Merritt
Sent: Thursday, May 11, 2023 8:12 AM
To: NMOCD Spill Notifications (OCD.Enviro@emnrd.nm.gov)
Cc: Melodie Sanjari; Mike Carmona
Subject: Marathon – Bootlegger 21 Fed Com #001H - Liner Inspection

Good Morning,

On behalf of Marathon, Carmona Resources will be conducting a liner inspection for the below site on Monday 05/15/23, around 10:00 a.m. Mountain Time. Please let me know if you have any questions.

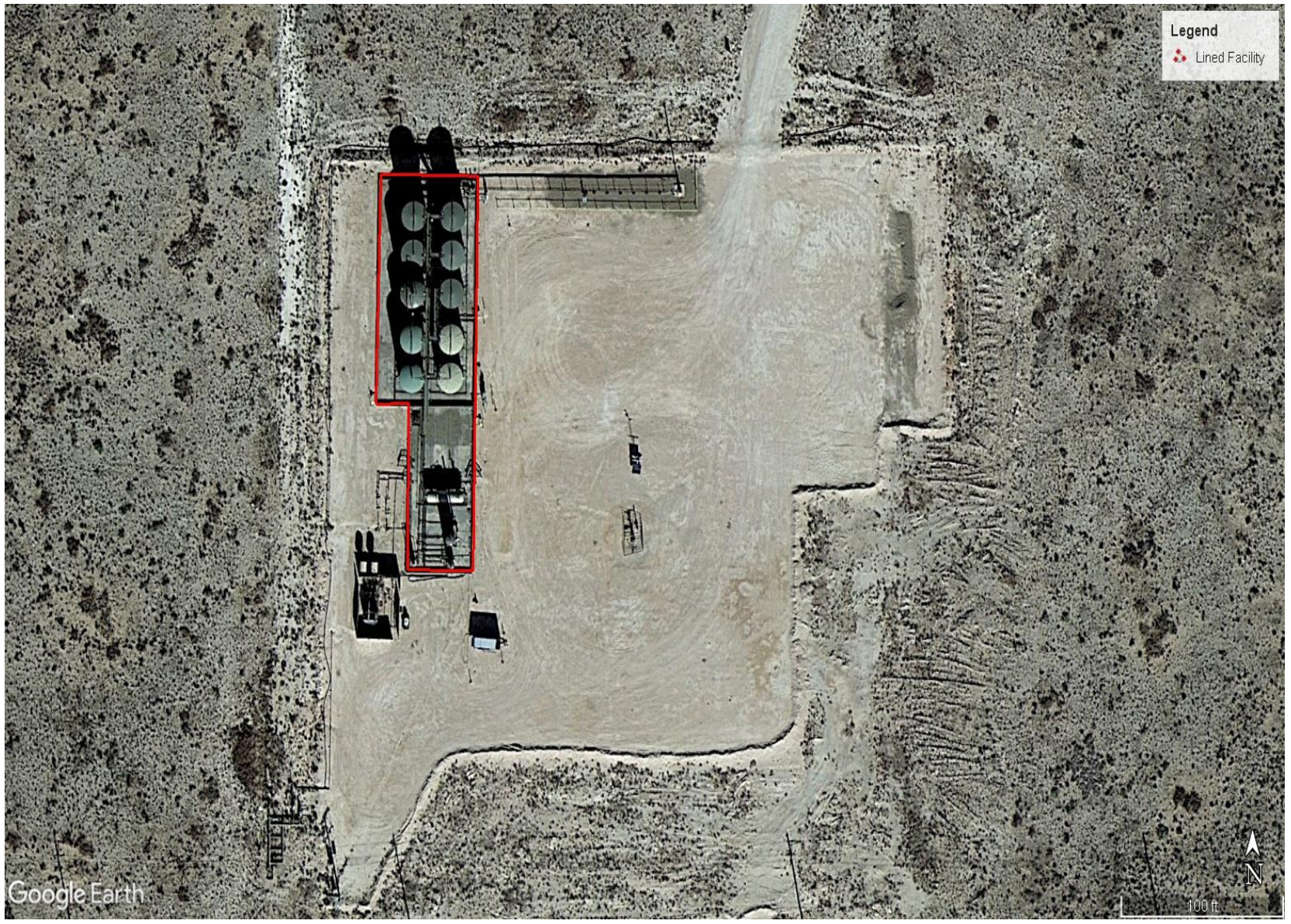
Marathon – Bootlegger 21 Fed Com #001H
Incident ID: nAB1722641387
Sec 16 T20S R29E Unit P
32.56687638, -104.07262819
Eddy County, New Mexico

Clinton Merritt
310 West Wall Street, Suite 500
Midland TX, 79701
M: 432-813-9044
MerrittC@carmonaresources.com

CARMONA RESOURCES

FIGURES

CARMONA RESOURCES



SECONDARY CONTAINMENT MAP MARATHON OIL CORPORATION BOOTLEGGER 21 FEDERAL COM #1H EDDY COUNTY, NEW MEXICO 32.56687638, -104.07262819	CARMONA RESOURCES	FIGURE 1

SAMPLE LOCATION MAP MARATHON OIL CORPORATION BOOTLEGGER 21 FEDERAL COM #1H EDDY COUNTY, NEW MEXICO 32.56687638, -104.07262819	CARMONA RESOURCES	FIGURE 2

APPENDIX B

CARMONA RESOURCES

PHOTOGRAPHIC LOG

Marathon Oil Corporation

Photograph No. 1

Facility: Bootlegger 21 Federal Com #1H

County: Eddy County, New Mexico

Description:
View East, area of the lined facility.

Photograph No. 2

Facility: Bootlegger 21 Federal Com #1H

County: Eddy County, New Mexico

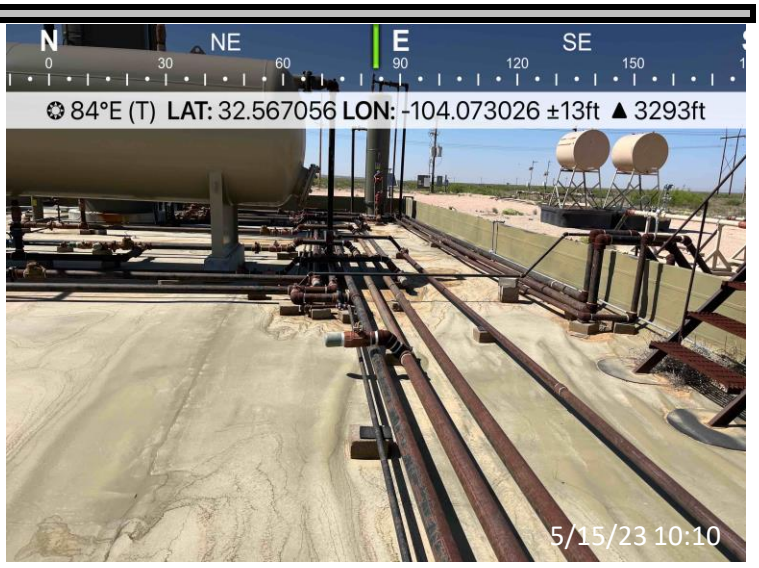
Description:
View West, area of the lined facility.

Photograph No. 3

Facility: Bootlegger 21 Federal Com #1H

County: Eddy County, New Mexico

Description:
View East, area of the lined facility.



PHOTOGRAPHIC LOG

Marathon Oil Corporation

Photograph No. 4

Facility: Bootlegger 21 Federal Com #1H

County: Eddy County, New Mexico

Description:
View Northeast, area of the lined facility.

Photograph No. 5

Facility: Bootlegger 21 Federal Com #1H

County: Eddy County, New Mexico

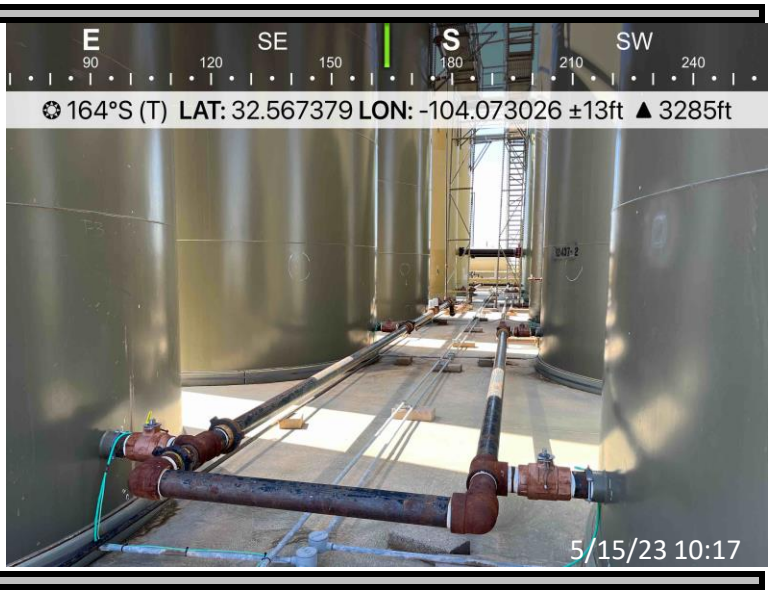
Description:
View East, area of the lined facility.

Photograph No. 6

Facility: Bootlegger 21 Federal Com #1H

County: Eddy County, New Mexico

Description:
View South, area of the lined facility.



PHOTOGRAPHIC LOG

Marathon Oil Corporation

Photograph No. 7

Facility: Bootlegger 21 Federal Com #1H

County: Eddy County, New Mexico

Description:
View South, area of the lined facility.

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

December 14, 2018

#5E27499-BG24

NMOCD District 2
Ms. Maria Pruett
811 S. First Street
Artesia, New Mexico 88210

SUBJECT: Remediation Closure Report for the Bootlegger 21 Federal Com #1H Release (2RP-4310), Eddy County, New Mexico

Dear Ms. Pruett:

On behalf of Marathon Oil Permian (Marathon), Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to oil and gas production activities at the Bootlegger 21 Federal Com #1H site. The site is in Unit P, Section 16, Township 20S, Range 29E, Eddy County, New Mexico, on Federal land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1 summarizes release information and Closure Criteria.

Table 1: Release Information and Closure Criteria			
Name	Bootlegger 21 Federal Com #1H	Company	Marathon Oil Permian
API Number	30-015-43970	Location	32.56687638° -104.07262819°
Incident Number	2RP-4310		
Date of Release	July 18, 2017	Date Reported to NMOCD	July 25, 2017 (original) August 7, 2017 (revised)
Land Owner	BLM	Reported To	BLM, NMOCD
Source of Release	Discharge hose		
Released Volume	30 bbls	Released Material	Hydrochloric Acid
Recovered Volume	0 bbls	Net Release	30 bbls
NMOCD Closure Criteria	51-100 feet to groundwater		
SMA Response Dates	N/A		

1.0 Background

On July 18, 2017, a release of hydrochloric acid was discovered at the Bootlegger 21 Federal Com #1H site due to a discharge hose on the blender seperating. Initial response activities were conducted by a Marathon contractor, and included source elimination, site security, containment, and site stabilization activities including the application of soda ash for neutralization to the impacted area. Figure 1 illustrates the vicinity and site location, Figure 2 illustrates the release location. The C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Bootlegger 21 Federal Com #1H is located approximately 13.5 miles northeast of Carlsbad, New Mexico on Federal (BLM) land at an elevation of approximately 3,284 feet above mean sea level (amsl).

Based upon water well data (Appendix B), depth to groundwater in the area is estimated to be 66 feet below grade surface (bgs). There are two (2) known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 12/10/2018). The nearest significant watercourse is an unnamed pond, located approximately 4.2 miles to the northwest. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of between 51-100 feet bgs. The site has been restored to meet the standards of Table I of 19.15.29.12 NMAC.

Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Remediation Activities and Recommendations

CURA Emergency Services L.C (CES) was contacted to provide release response and remediation services. The CES report dated October 25, 2017, emergency response and remedial actions are detailed. Included in the report is a figure illustrating sample locations with an analytical summary table and an analytical report dated October 2, 2017. The results of the analytical report indicate all samples were comparable to background levels, with a range from 7-8 on the pH scale. This report has not been previously submitted to NMOCD, and is attached in Appendix C.

Based on the information provided in the CURA Environmental Report, SMA recommends no further action for the release identified at the Bootlegger 21 Federal Com #1H (2RP-4310).

5.0 Scope and Limitations

The scope of our services included: regulatory liaison and preparing this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:

Ashley Maxwell
Project Scientist

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

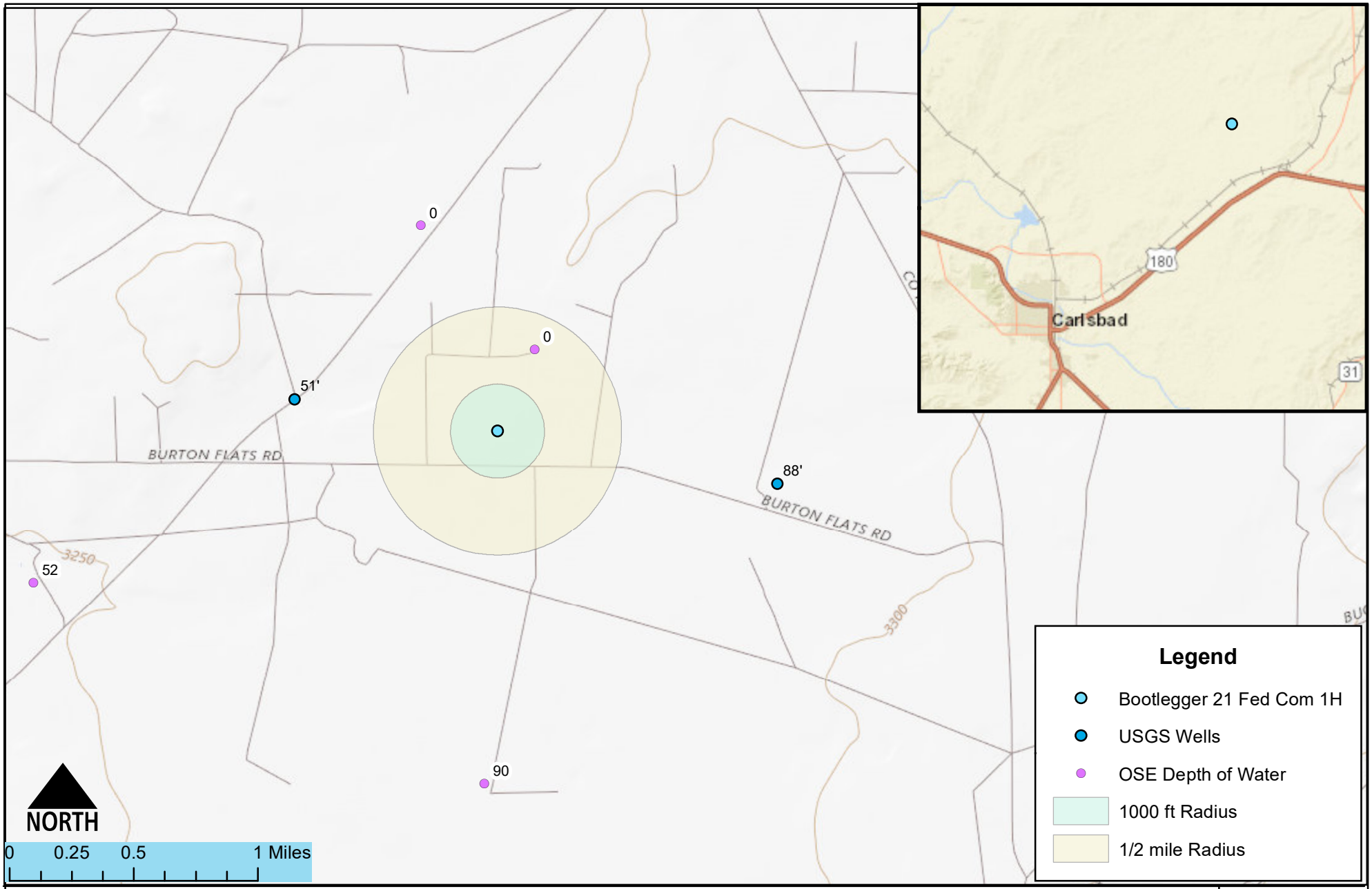
Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Surface Water Radius Map

Appendices:

Appendix A: Form C141
Appendix B: Water Well Data
Appendix C: CURA Environmental Report

FIGURES



Vicinity and Well Head Protection Map
Bootlegger 21 Fed Com 1H - Marathon
S 16-T20S-R29E, New Mexico

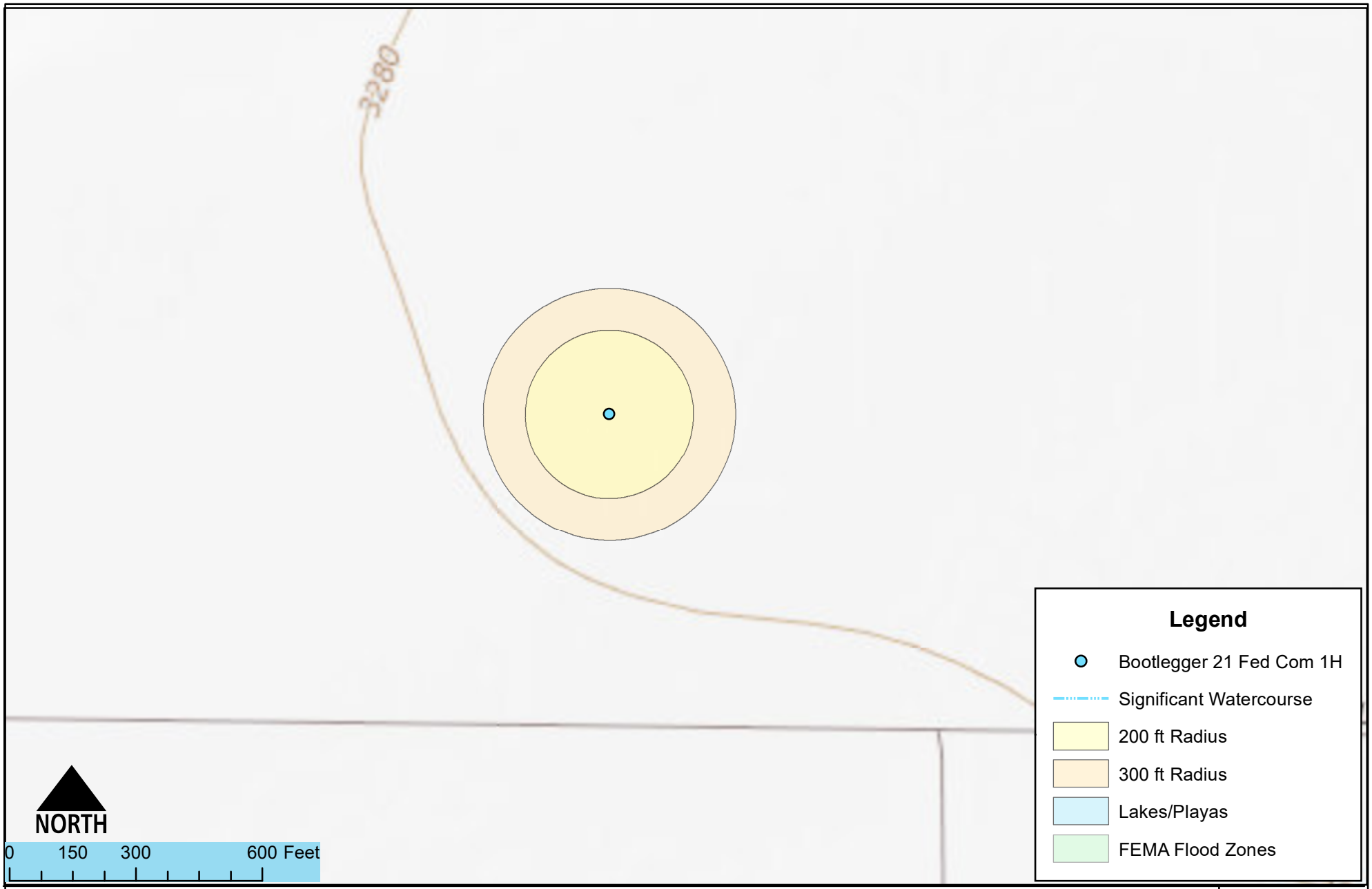
Figure 1

Date Saved: 12/6/2018

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

Drawn Heather Patterson
Checked
Approved

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



Surface Water Protection Map
Bootleger 21 Fed Com 1H - Marathon
S 16-T20S-R29E, New Mexico

Figure 2

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

Date Saved: 12/6/2018

Drawn Heather Patterson
Checked
Approved

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

APPENDIX A
FORM C141

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 26 2017
RECEIVED

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1722641387

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Marathon Oil Company 372098	Contact Wendy Gram
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 701-690-6519 (cell) 713-296-2862 (office)
Facility Name Bootlegger 21 Federal Com #1H	Facility Type Oil well

Surface Owner BLM	Mineral Owner BLM	API No. 30-015-43970

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	16	20S	29E	240	South	360	East	Eddy

Latitude 32.56687638 **Longitude** -104.07262819 NAD83

NATURE OF RELEASE

Type of Release 9% by volume solution of hydrochloric acid and flowback water	Volume of Release 30 barrels	Volume Recovered 0 barrels
Source of Release Contractor's well completions equipment	Date and Hour of Occurrence 7/18/2017 11PM	Date and Hour of Discovery 7/18/2017 11 PM.
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? Immediate notification not provided because location was BLM surface and minerals, and BLM immediate reporting thresholds were used.	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

Describe Cause of Problem and Remedial Action Taken.*
While displacing a 9% by volume hydrochloric acid solution during well completions activities, a discharge hose on the blender parted resulting in a 30 barrel (50'X80'X.5") release to the pad (ground) at the well-site location. No material went offsite. The job was stopped immediately. The contractor applied soda ash to neutralize the spill. Because the spill was neutralized, Marathon assumed for reporting purposes that none of the original material was recovered.

Describe Area Affected and Cleanup Action Taken.*
Marathon personnel discussed proposed site cleanup activities with Shelly Tucker of the BLM on 8/7/2017. The contractor responsible for the spill and cleanup (BJ Services) is preparing a work plan that will involve removing soil on location and then sampling the bottom and side walls to verify that all potentially contaminated soil has been removed.

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

Signature: Wendy Gram	OIL CONSERVATION DIVISION	
Printed Name: Wendy Gram	Approved by Environmental Specialist: Crystal Walker	
Title: Sr. HES Professional	Approval Date: 8/14/17	Expiration Date: N/A
E-mail Address: wwgram@marathonoil.com	Conditions of Approval: see attached	Attached ☒ 2RP-4310
Date: July 25. 2017 (original), revised 8/7/2017 Phone: 701-690-6519 (cell) 713-296-2862 (office)		

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 7/26/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4310 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 8/26/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

• If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

• Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

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	nAB1722641387
District RP	1RP-4310
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian	OGRID 372098
Contact Name Callie Karrigan	Contact Telephone 405-202-1028 (cell) 575-297-0956 (office)
Contact email cnkarrigan@marathonoil.com	Incident # *(assigned by OCD)*
Contact mailing address 5555 San Felipe St, Houston Texas 77056	

Location of Release Source

Latitude 32.56687638 Longitude -104.07262819
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Bootlegger 21 Fed Com #1H	Site Type Oil and Gas Production Facilities
Date Release Discovered 7/18/2018	API# *(if applicable)* 30-015-43970

Unit Letter	Section	Township	Range	County
P	16	20S	29E	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)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) Hydrochloric Acid	Volume/Weight Released (provide units) 30 bbls	Volume/Weight Recovered (provide units) 0

Cause of Release
While displacing a 9% by volume hydrochloric acid solution during well completions activities, a discharge hose on the blender Parted resulting in a 30 barrel (50'X80'X.5") release to the pad (ground) at the well-site location. No material went offsite. The job was stopped immediately. The contractor applied soda ash to neutralize the spill. Because the spill was neutralized, Marathon assumed for reporting purposes that none of the original material was recovered.

State of New Mexico
Oil Conservation Division

Incident ID	nAB1722641387
District RP	2RP-4310
Facility ID	
Application ID	

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

Initial Response

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

☒ 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: __Callie Karrigan_____ Title: _____HES Professional_____

Signature: _*Callie Karrigan*_____ Date: _12/18/18_____

email: ___cnkarrigan@marathonoil.com_____ Telephone: __575-297-0956_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAB1722641387
District RP	2RP-4310
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	66 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	nAB1722641387
District RP	2RP-4310
Facility ID	
Application ID	

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

Printed Name: __Callie Karrigan_____ Title: _____HES Professional_____

Signature:_____*Callie Karrigan* _____ Date: ___12/18/2018_____

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

OCD Only

Received by: _____ Date: _____

APPENDIX B
WATER WELL DATA

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

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

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

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

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 00752 POD1	CP	ED		1	3	15	20S	29E	587293	3604181	581	2567		
CP 00833 POD1	CP	LE		1	2	16	20S	29E	586548	3604978*	1419	100		
CP 00759	CP	ED		4	2	28	20S	29E	586984	3601360*	2292	205	90	115
C 03265 POD1	CUB	ED	1	1	3	20	20S	29E	584052	3602648*	3165	89	52	37
CP 00831 POD1	CP	LE		2	2	10	20S	29E	588548	3606605*	3309	100		
CP 01202 POD1	CP	ED	4	4	3	26	20S	29E	589569	3600512	4022	173	158	15
CP 00740	CP	ED	2	3	3	12	20S	29E	590669	3605509*	4064	150		
CP 00743 POD1	CP	ED		2	4	05	20S	29E	585319	3607382*	4113	160		
CP 00936 POD1	CP	ED	3	4	2	30	20S	29E	583661	3601238*	4163	70	52	18
CP 00745 POD1	CP	ED	4	1	3	12	20S	29E	590653	3605782	4182	232		
CP 01201 POD1	CP	ED	2	2	1	18	20S	29E	582983	3605121	4328	140	100	40
CP 00698 POD1	CP	ED		3	1	03	20S	29E	587393	3608010	4371			
CP 00832 POD1	CP	LE		2	3	12	20S	29E	590971	3605815*	4474	200		
CP 00830 POD1	CP	LE		2	1	04	20S	29E	586118	3608193*	4636	120		

Average Depth to Water: **90 feet**

Minimum Depth: **52 feet**

Maximum Depth: **158 feet**

Record Count: 14

UTMNAD83 Radius Search (in meters):

Easting (X): 587053.64 **Northing (Y):** 3603651.69 **Radius:** 5000

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

National Water Information System: Web Interface

USGS Water Resources

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

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 323407104051001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

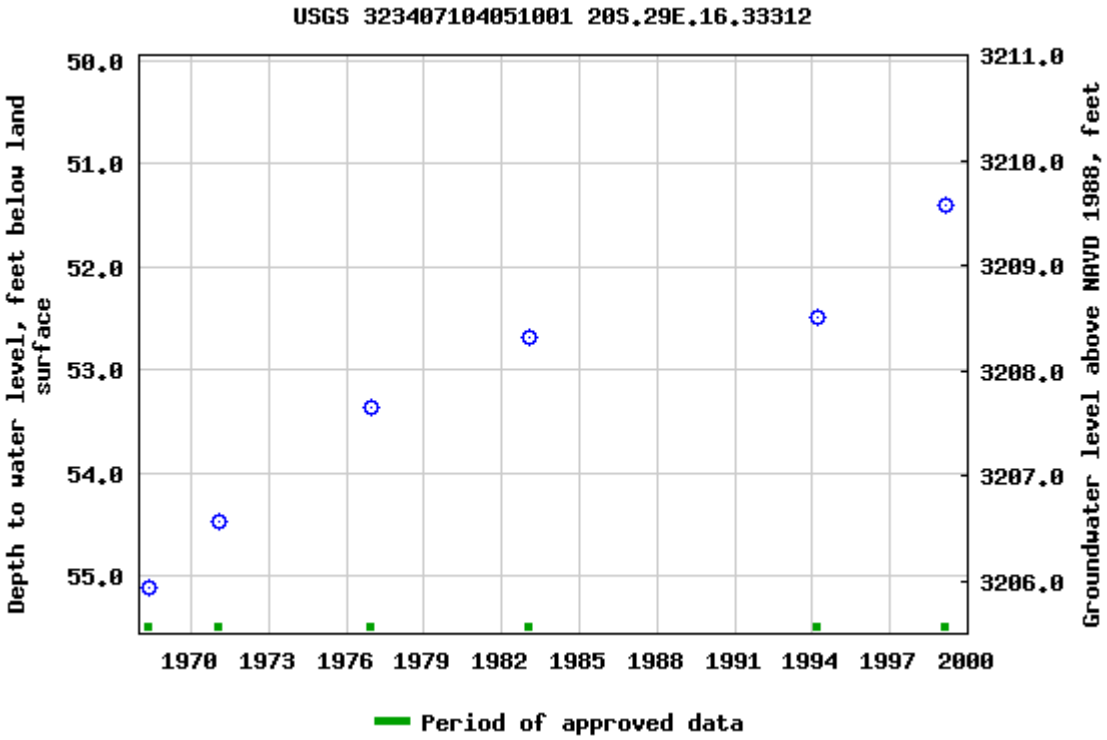
USGS 323407104051001 20S.29E.16.33312

Available data for this site Groundwater: Field measurements ▼ GO

Eddy County, New Mexico
Hydrologic Unit Code --
Latitude 32°34'07", Longitude 104°05'10" NAD27
Land-surface elevation 3,261 feet above NAVD88
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

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

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2018-12-06 14:39:49 EST
1.14 0.96 nadww01

National Water Information System: Web Interface

USGS Water Resources

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

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 323349104031001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

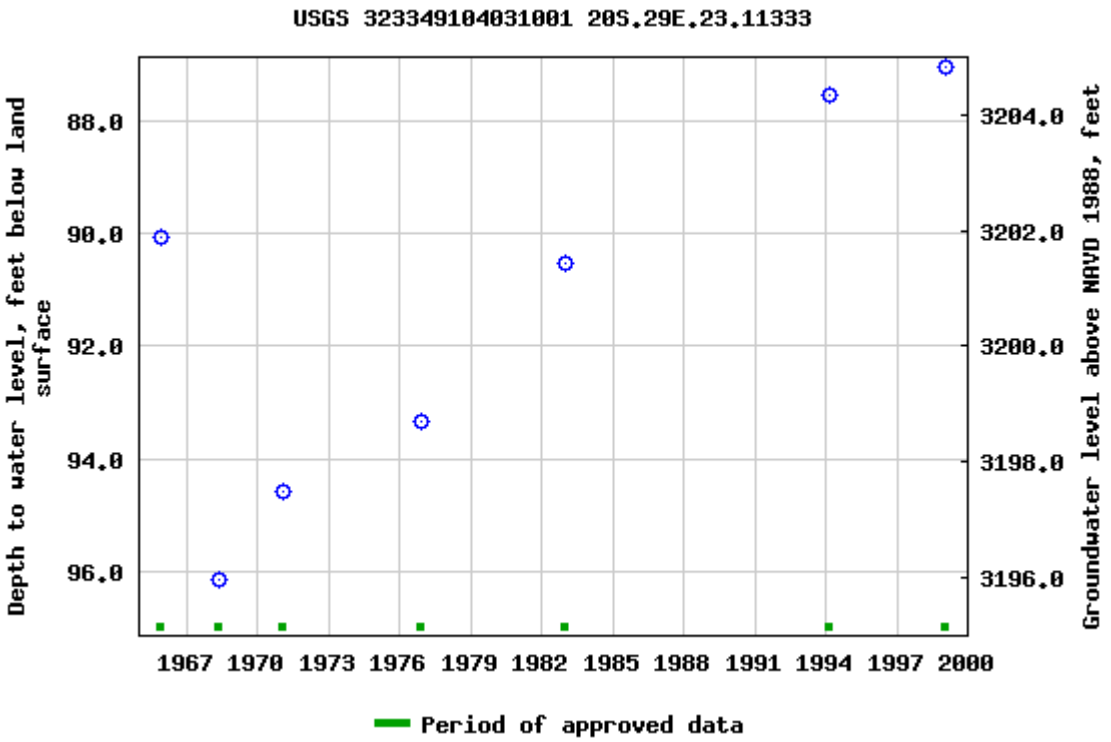
USGS 323349104031001 20S.29E.23.11333

Available data for this site Groundwater: Field measurements ▼ GO

Eddy County, New Mexico
Hydrologic Unit Code --
Latitude 32°33'49", Longitude 104°03'10" NAD27
Land-surface elevation 3,292 feet above NAVD88
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2018-12-06 14:42:10 EST
1.47 1.33 nadww01

APPENDIX C
CURA ENVIRONMENTAL REPORT

CURA

The Leader in Nationwide 24-Hour Emergency Management
For Emergency Only: 1-800- 579-2872

ENVIRONMENTAL

Oct 25, 2017

BJ Services
Ms. Bridget Todd
11211 FM 2920 Road
Tomball, TX 77375
bridget.todd@bjservices.com

RE: HYDROCHLORIC ACID RELEASE - FINAL REPORT

BJ SERVICES

MARATHON BOOTLEGGER 21 FED COM #1H

CARLSBAD , EDDY COUNTY, NM

CES PROJECT NO. EM171008F8 - DJL

Ms. Todd:
Please accept this document as the final report detailing the emergency response and remedial actions taken for the hydrochloric acid release that occurred on 7/19/2017, at the above referenced location.

INCIDENT BACKGROUND:
On July 19, 2017, at approximately 12:30 a.m. CDT, BJ Services (BJS) personnel were conducting pressure pumping operations at the above referenced location when a hose failure occurred. As a result of the failure, approximately 1,247 gallons of 15% hydrochloric acid (1,672 lbs) was released to the caleche well pad.

EMERGENCY RESPONSE:
Marathon Oil Corporation (Marathon) and BJS personnel deployed soda ash to the impacted area in order to neutralize the free product. Additionally, Marathon personnel utilized a vacuum truck to collect free standing product.

On July 19, 2017, at approximately 10:44 a.m. CDT, representative with BJS, Mr. Mark Moreno retained Cura Emergency Services L.C. (CES) to manage the environmental cleanup of the site. Based on the available information the CES incident manager dispatched a crew from Clean Tank, Inc. (CTI) to assess and remediate the site.

REGULATORY NOTIFICATION:
Pursuant to New Mexico state regulations, acidic related releases in excess of 5,000 pounds are considered reportable. This release was approximately 1,672 pounds; therefore, no regulatory notification was necessary.

REMEDIAL ACTIONS:
On July 19, 2017, at approximately 4:30 p.m. CDT, CTI personnel responded to the scene and assessed the situation. Crews photo documented the area and demobilized from the location. Crews scheduled to return at a later date once ongoing fracturing operations were complete.

On July 27, 2017, at approximately 10:30 a.m. CDT, BJ services requested that CTI respond to the spill site and construct an environmental barrier around the release. Crews deployed the equipment necessary for the environmental barrier then demobilized from the site.

On July 28, 2017, at approximately 9:00 a.m. CDT, CTI personnel responded to the site to construct an environmental barrier. While onsite, a representative of Marathon advised CTI crews that they were unable to construct the barrier without having a remediation plan approved by the Bureau of Land Management (BLM). The CES manager relayed the information to BJS, who then advised to have CTI stand down until further notice. Crews scheduled to return at a later date and time once CTI's remediation plan had been approved by the BLM.

On September 20, 2017, crews from CES mobilized to the site to delineate the area. CES personnel collected 21 soil samples, 3 back ground samples, and gps mapped the area. With the soil samples collected, CES demobilized from the site.

CONCLUSION AND RECOMMENDATIONS:

Hydrochloric acid was released to the caleche well pad surface and was neutralized with soda ash. Soil samples were then taken to test the pH levels in the soil from the release. All samples returned within the background levels with a range from 7-8 on the pH scale. Based on these results, it appears that corrective actions were successful and no further action should be required. CES recommends that the incident be closed.

Cura Emergency Services, L.C. appreciates the opportunity to provide you with our professional expertise in this matter. If you have any questions, please feel free to call us at (972) 378-7333.

Respectfully,

Cura Emergency Services, L.C.

Derek Logsdon

Incident Manager

Hazardous Materials Incident Report

Cura Emergency Services, L.C.
6205 Chapel Hill Boulevard,Suite 100
Plano,Texas 75093
Ph. (972) 378-7333 Fax (972) 378-6789

Hazardous Materials Incident Report

Client File No : _____

A. Incident Information :

Incident Manager : Derek Logsdon

Project No. : EM171008F8 - DJL **Project Name :** BJ Services - Carlsbad - NM

Date of Loss : 7/19/2017 **Time of Loss :** 12:30 am CDT

Date Reported : 7/19/2017 **Time of Reported :** 10:44 am CDT

Person Reporting : Mark Moreno **Phone :** (575)840-4154

Driver : _____ **Tractor # :** _____ **Trailer # :** _____

Incident Location Contact : Mark Moreno **Phone :** (575)840-4154

Incident Location : Marathon Bootlegger 21 Fed Com #1H

City : Carlsbad **County :** Eddy **State :** NM

Incident Description :

On July 19, 2017, at approximately 12:30 a.m. CDT, BJ Services (BJS) personnel were conducting pressure pumping operations at the above referenced location when a hose failure occurred. As a result of the failure, approximately 1,247 gallons of 15% hydrochloric acid (1,672 lbs) was released to the caleche well pad.

Surface Affected : Well Pad

Water Affected : None

Sensitive Report Impact :

Incident Report (Cont.)

Project Number : EM171008F8 - DJL

B . Chemical Information

Client File No :

		Reportable Qnty	Reported Volume	Actual* Volume	Gals /Lbs
Chemical :	hydrochloric acid	5000	1672	1672	Lbs
Chemical :					

C . Health & Safety :

Site Monitoring (If Applicable) :

- ☐ **Vapor Concentration (ppm) :** unmetered
- ☐ **Available Oxygen (%) :** ambient
- ☐ **LEL Exceeded**

PPE :

- ☐ **Level A**
- ☐ **Level B**
- ☐ **Level C**
- ☒ **Level D**
- ☐ **MSDS Attached**

Site Special Precations :

No special precautions were noted for this site.

Site Condition :

No complicating conditions existed at the site during cleanup operations.

Injuries :

Explain :

No injuries or fatalities that were a direct result of the released material were reported.

D . Emergency Response :

Initial Emergency Actions :

Marathon Oil Corporation (Marathon) and BJS personnel deployed soda ash to the impacted area in order to neutralize the free product. Additionally, Marathon personnel utilized a vacuum truck to collect free standing product.

On July 19, 2017, at approximately 10:44 a.m. CDT, representative with BJS, Mr. Mark Moreno retained Cura Emergency Services L.C. (CES) to manage the environmental cleanup of the site. Based on the available information the CES incident manager dispatched a crew from Clean Tank, Inc. (CTI) to assess and remediate the site.

*Unless specified in the Incident Description section, the "Actual Volume" is an estimate, based on the observations of the CES subcontractor

Incident Report (Cont.)

Project Number : EM171008F8 - DJL

E . Corrective Actions :

Client File No :

Corrective Actions :

On July 19, 2017, at approximately 4:30 p.m. CDT, CTI personnel responded to the scene and assessed the situation. Crews photo documented the area and demobilized from the location. Crews scheduled to return at a later date once ongoing fracturing operations were complete.

On July 27, 2017, at approximately 10:30 a.m. CDT, BJ services requested that CTI respond to the spill site and construct an environmental barrier around the release. Crews deployed the equipment necessary for the environmental barrier then demobilized from the site.

On July 28, 2017, at approximately 9:00 a.m. CDT, CTI personnel responded to the site to construct an environmental barrier. While onsite, a representative of Marathon advised CTI crews that they were unable to construct the barrier without having a remediation plan approved by the Bureau of Land Management (BLM). The CES manager relayed the information to BJS, who then advised to have CTI stand down until further notice. Crews scheduled to return at a later date and time once CTI's remediation plan had been approved by the BLM.

On September 20, 2017, crews from CES mobilized to the site to delineate the area. CES personnel collected 21 soil samples, 3 back ground samples, and gps mapped the area. With the soil samples collected, CES demobilized from the site.

F . Responsible Party Information :

Responsible Party : BJ Services **RP Ref # :**

Contact : Mrs. Bridget Todd **Contact :** ☐ **Send Report**

Address : 11211 FM 2920 Road **Phone :** (281)908-9083

City : Tomball **State :** TX **Zip :** 77375 **Fax :**

Incident Report (Cont.)

Project Number : EM171008F8 - DJL

G . Regulatory Agencies

Client File No : _____

☐ **Reportable Spill (Check if yes)**

Explain : Pursuant to New Mexico state regulations, acidic related releases in excess of 5,000 pounds are considered reportable. This release was approximately 1,672 pounds; therefore, no regulatory notification was necessary.

No Regulatory Notification

Contact : _____ **Contact Date :** _____

Address : _____ **Phone:** _____ **Contact Time:** _____

City : _____ **State :** _____ **Zip:** _____ **Fax :** _____

☐ **Report Required** **Confirmation No :** _____

Note : _____

Incident Report (Cont.)

Project Number : EM171008F8 - DJL

Client File No :

H . Disposal Facilities

Waste Facility : No waste generated from the cleanup

Contact Person:

Address :

City : **State :** **Zip:**

Phone : **Ext :** **Fax:**

E-Mail : **Website :**

Disposal Date : **Amount :** ☐ **Disposal Document Attached**

Incident Report (Cont.)

Project Number : EM171008F8 - DJL

I . Contractors

Client File No :

Company : Clean Tank, Inc. (CTI)

Contact Person: Cayce Causey

Address : **Phone :** (832)316-8265

City : Pecos **State :** TX **Zip:** **Fax:**

E-Mail : cara@cleantankinc.com

Company : ESC Lab Sciences

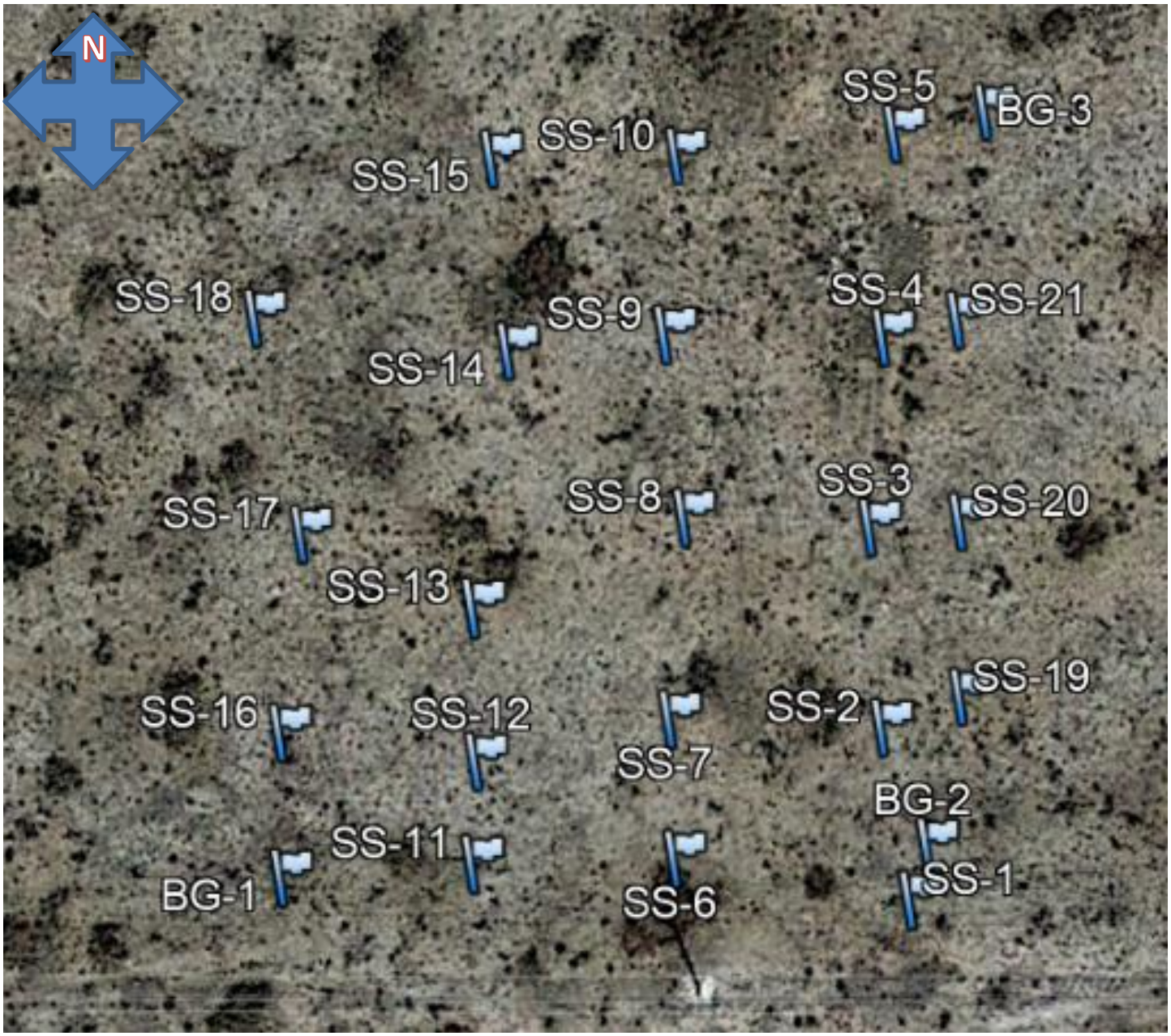
Contact Person:

Address : P.O. Box 5003 **Phone :** (800)767-5859

City : Lebanon **State :** TN **Zip:** 370885003 **Fax:**

E-Mail :

Analytical



Sample ID	pH
SS1-2”	7.56
SS1-7”	7.88
SS2-2”	7.81
SS2-7”	7.99
SS3-2”	8.07
SS3-7”	7.90
SS4-2”	8.33
SS4-7”	8.04
SS5-2”	7.90
SS5-7”	7.88
SS6-2”	7.98
SS6-7”	8.02
SS7-2”	7.86
SS7-7”	7.82

Sample ID	pH
SS8-2”	7.95
SS8-7”	8.14
SS9-2”	8.05
SS9-7”	8.07
SS10-2”	7.92
SS10-7”	7.90
SS11-2”	7.74
SS11-7”	8.01
SS12-2”	8.01
SS12-7”	7.99
SS13-2”	7.96
SS13-7”	8.13
SS14-2”	7.92
SS14-7”	7.89

Sample ID	pH
SS15-2”	7.93
SS15-7”	7.89
SS16-2”	7.97
SS16-7”	8.44
SS17-2”	8.13
SS17-7”	8.12
SS18-2”	8.09
SS18-7”	8.03
SS19-2”	7.96
SS19-7”	8.04
SS20-2”	8.01
SS20-7”	8.01
SS21-2”	7.80
SS21-7”	7.91

Sample ID	pH
BG1-2”	7.89
BG1-7”	7.91
BG2-2”	7.93
BG2-7”	7.93
BG3-2”	7.92
BG3-7”	7.89

ANALYTICAL REPORT

October 02, 2017

Cura Emergency Services - Plano, TX

Sample Delivery Group:	L938841
Samples Received:	09/23/2017
Project Number:	EM171008F8
Description:	Carlsbad, NM

Report To: Derek Logsdon
6025 Chapel Hill Blvd.
Suite 100
Plano, TX 75093

Entire Report Reviewed By:

Chris McCord
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

SS-1-2" L938841-01 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:13 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-1-7" L938841-02 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:14 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-2-2" L938841-03 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:24 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-2-7" L938841-04 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:25 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-3-2" L938841-05 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:34 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-3-7" L938841-06 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:35 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-4-2" L938841-07 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:45 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-4-7" L938841-08 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:46 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-5-2" L938841-09 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:54 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-5-7" L938841-10 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 11:55 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-6-2" L938841-11 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:09 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-6-7" L938841-12 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:10 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-7-2" L938841-13 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:18 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-7-7" L938841-14 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:19 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-8-2" L938841-15 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:28 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-8-7" L938841-16 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:29 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-9-2" L938841-17 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:36 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-9-7" L938841-18 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:37 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-10-2" L938841-19 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:47 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-10-7" L938841-20 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 12:48 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024213	1	09/25/17 14:38	09/25/17 15:33	TH

SS-11-2" L938841-21 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 13:42 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-11-7" L938841-22 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 13:43 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-12-2" L938841-23 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 13:50 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-12-7" L938841-24 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 13:51 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-13-2" L938841-25 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 13:57 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-13-7" L938841-26 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 13:58 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-14-2" L938841-27 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 14:07 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-14-7" L938841-28 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 14:08 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-15-2" L938841-29 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 14:15 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-15-7" L938841-30 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 14:16 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-16-2" L938841-31 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 14:35 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-16-7" L938841-32 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 14:37 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-17-2" L938841-33 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 14:43
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-17-7" L938841-34 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 14:45
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-18-2" L938841-35 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 14:52
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-18-7" L938841-36 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 14:55
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-19-2" L938841-37 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 15:06
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-19-7" L938841-38 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 15:07
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-20-2" L938841-39 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 15:15
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-20-7" L938841-40 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 15:17
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024215	1	09/25/17 14:50	09/25/17 15:44	TH

SS-21-2" L938841-41 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 15:37 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

SS-21-7" L938841-42 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 15:39 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

SS-21-2" DUP L938841-43 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 15:37 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

SS-21-7" DUP L938841-44 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 15:39 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

BG-1-2" L938841-45 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 15:49 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

BG-1-7" L938841-46 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 15:51 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

BG-2-2" L938841-47 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 16:00 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

BG-2-7" L938841-48 Solid

Collected by: Grant Norvell | Collected date/time: 09/20/17 16:02 | Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

BG-3-2" L938841-49 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 16:09
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

BG-3-7" L938841-50 Solid

Collected by: Grant Norvell
Collected date/time: 09/20/17 16:11
Received date/time: 09/23/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9045D	WG1024216	1	09/25/17 14:40	09/25/17 15:40	TH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Technical Service Representative

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.56	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-01 WG1024213: 7.56 at 21.4c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.88	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-02 WG1024213: 7.88 at 20.3c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.81	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-03 WG1024213: 7.81 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.99	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-04 WG1024213: 7.99 at 20.1c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.07	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-05 WG1024213: 8.07 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.90	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-06 WG1024213: 7.90 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.33	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-07 WG1024213: 8.33 at 20.1c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.04	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-08 WG1024213: 8.04 at 20.2c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.90	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-09 WG1024213: 7.90 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.88	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-10 WG1024213: 7.88 at 19.7c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.98	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-11 WG1024213: 7.98 at 19.8c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.02	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-12 WG1024213: 8.02 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.86	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-13 WG1024213: 7.86 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.82	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-14 WG1024213: 7.82 at 19.9c

33-8-2
Collected date/time: 09/20/17 12:28

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.95	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-15 WG1024213: 7.95 at 19.9c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.14	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-16 WG1024213: 8.14 at 20.1c

Collected date/time: 09/20/17 12:36

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.05	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-17 WG1024213: 8.05 at 19.8c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.07	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-18 WG1024213: 8.07 at 19.8c

33-10-2

SAMPLE RESULTS - 19

Collected date/time: 09/20/17 12:47

L938841

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	su				
pH	7.92	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-19 WG1024213: 7.92 at 19.9c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.90	T8	1	09/25/2017 15:33	WG1024213

Sample Narrative:

L938841-20 WG1024213: 7.90 at 19.9c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.74	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-21 WG1024215: 7.74 at 20.3c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.01	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-22 WG1024215: 8.01 at 20.2c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.01	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-23 WG1024215: 8.01 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.99	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-24 WG1024215: 7.99 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.96	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-25 WG1024215: 7.96 at 20.2c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.13	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-26 WG1024215: 8.13 at 20.1c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.92	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-27 WG1024215: 7.95 at 20.1c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.89	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-28 WG1024215: 7.89 at 20.1c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.93	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-29 WG1024215: 7.93 at 20.1c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.89	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-30 WG1024215: 7.89 at 19.9c

33-10-2
Collected date/time: 09/20/17 14:35
L938841

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.97	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-31 WG1024215: 7.97 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.44	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-32 WG1024215: 8.44 at 20.0c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.13	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-33 WG1024215: 8.13 at 19.9c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.12	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-34 WG1024215: 8.12 at 19.9c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.09	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-35 WG1024215: 8.09 at 19.8c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	su				
pH	8.03	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-36 WG1024215: 8.03 at 20.5c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.96	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-37 WG1024215: 7.96 at 20.6c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.04	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-38 WG1024215: 8.04 at 20.6c

33-20-2
Collected date/time: 09/20/17 15:15

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.01	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:
L938841-39 WG1024215: 8.01 at 20.5c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.01	T8	1	09/25/2017 15:44	WG1024215

Sample Narrative:

L938841-40 WG1024215: 8.01 at 20.5c

33-21-2
Collected date/time: 09/20/17 15:37
L938841

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.80	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:
L938841-41 WG1024216: 7.8 at 21.9c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.91	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-42 WG1024216: 7.91 at 21.7c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.83	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-43 WG1024216: 7.83 at 21.8c

SS-21-7 DUP
Collected date/time: 09/20/17 15:39

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.93	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:
L938841-44 WG1024216: 7.93 at 21.7c

BG-1-2
Collected date/time: 09/20/17 15:49

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.89	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-45 WG1024216: 7.89 at 21.6c

BG-17

Collected date/time: 09/20/17 15:51

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.91	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-46 WG1024216: 7.91 at 21.6c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.93	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-47 WG1024216: 7.93 at 21.3c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.93	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-48 WG1024216: 7.93 at 21.6c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.92	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-49 WG1024216: 7.92 at 21.4c

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.89	T8	1	09/25/2017 15:40	WG1024216

Sample Narrative:

L938841-50 WG1024216: 7.89 at 21.3c

L938841-01 Original Sample (OS) • Duplicate (DUP)

(OS) L938841-01 09/25/17 15:33 • (DUP) WG1024213-3 09/25/17 15:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.56	7.56	1	0.000	T8	1

Sample Narrative:

OS: 7.56 at 21.4c

DUP: 7.56 at 21.4c

L938841-20 Original Sample (OS) • Duplicate (DUP)

(OS) L938841-20 09/25/17 15:33 • (DUP) WG1024213-4 09/25/17 15:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.90	7.90	1	0.000	T8	1

Sample Narrative:

OS: 7.90 at 19.9c

DUP: 7.90 at 19.9c

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG1024213-1 09/25/17 15:33 • (LCSD) WG1024213-2 09/25/17 15:33

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	10.0	9.90	9.91	99.0	99.1	98.4-102			0.101	1

Sample Narrative:

LCS: 9.90 at 19.9c

LCSD: 9.91 at 19.9c

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

L938841-21 Original Sample (OS) • Duplicate (DUP)

(OS) L938841-21 09/25/17 15:44 • (DUP) WG1024215-3 09/25/17 15:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.74	7.75	1	0.129	T8	1

Sample Narrative:

OS: 7.74 at 20.3c

DUP: 7.75 at 20.3c

L938841-40 Original Sample (OS) • Duplicate (DUP)

(OS) L938841-40 09/25/17 15:44 • (DUP) WG1024215-4 09/25/17 15:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.01	8.01	1	0.000	T8	1

Sample Narrative:

OS: 8.01 at 20.5c

DUP: 8.01 at 20.5c

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG1024215-1 09/25/17 15:44 • (LCSD) WG1024215-2 09/25/17 15:44

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	10.0	9.90	9.91	99.0	99.1	98.4-102			0.101	1

Sample Narrative:

LCS: 9.90 at 19.9c

LCSD: 9.91 at 19.8c

L938841-50 Original Sample (OS) • Duplicate (DUP)

(OS) L938841-50 09/25/17 15:40 • (DUP) WG1024216-3 09/25/17 15:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.89	7.89	1	0.000	T8	1

Sample Narrative:

OS: 7.89 at 21.3c

DUP: 7.89 at 21.3c

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG1024216-1 09/25/17 15:40 • (LCSD) WG1024216-2 09/25/17 15:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	10.0	9.90	9.90	99.0	99.0	98.4-102	T8	T8	0.000	1

Sample Narrative:

LCS: 9.90 at 19.8c

LCSD: 9.90 at 19.9c

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

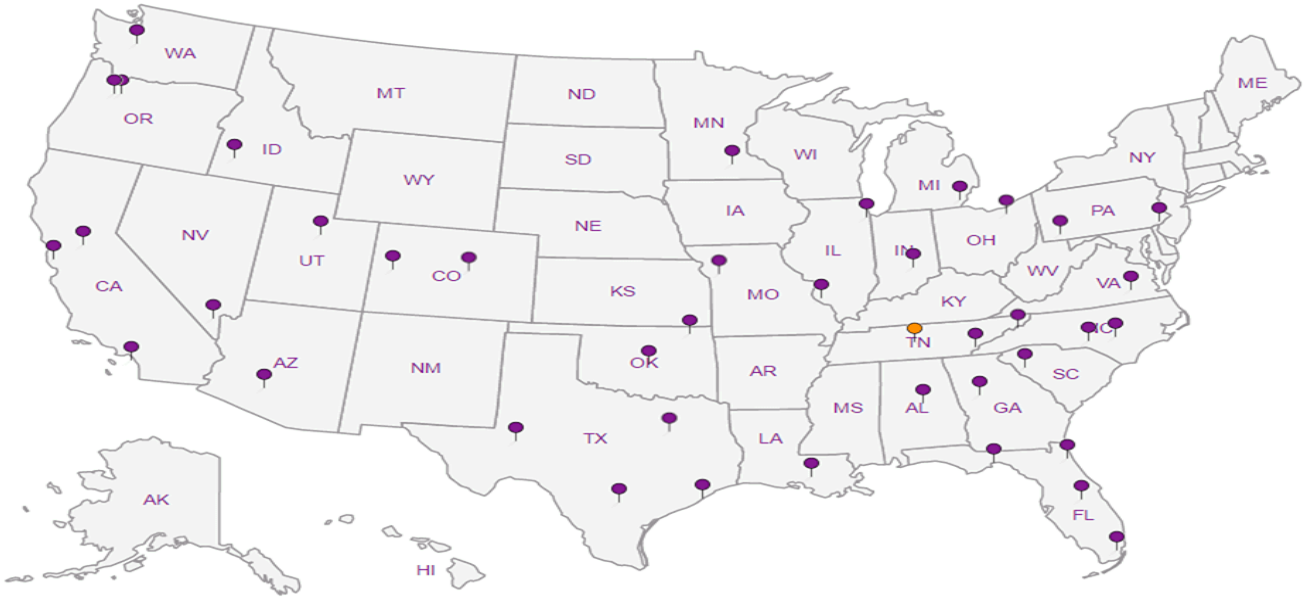
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Billing Information: Cura Emergency Services, 6205 Chapel Hill Blvd. Suite 100, Plano, TX 75093

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LAB SCIENCES

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: Derek Logsdon

Email To: derek@curaes.com

Project Description: Carlsbad, NM

City/State Collected: Carlsbad, NM

Phone: 972-378-7341
Fax:

Client Project #: EM171008F8

Lab Project #:

L#: L938841

Table #: B070

Collected by (print): grant Norvell

Site/Facility ID #:

P.O. #:

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #:

Date Results Needed:

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	pH	Remarks	Sample # (lab only)
SS-1-2"	Grab	SS	2in	9/20	11:13	1	✓		-01
SS-1-7in	Grab		7in	9/20	11:14	1	✓		-02
SS-2-2"	Grab		2in	9/20	11:24	1	✓		-03
SS-2-7in	Grab		7in	9/20	11:25	1	✓		-04
SS-3-2in	Grab		2in	9/20	11:34	1	✓		-05
SS-3-7"	Grab		7in	9/20	11:35	1	✓		-06
SS-4-2"	Grab		2in	9/20	11:45	1	✓		-07
SS-4-7in	Grab		7in	9/20	11:46	1	✓		-08
SS-5-2"	Grab		2in	9/20	11:54	1	✓		-09
SS-5-7"	Grab		7in	9/20	11:55	1	✓		-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ___

Remarks:

pH ___ Temp ___
Flow ___ Other ___

Samples returned via: ___ UPS X FedEx ___ Courier ___

Tracking # 7384 4204 1880

Sample Receipt Checklist
COC Seal Present/Intact: _NP ✓Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: _Y _N
Preservation Correct/Checked: _Y _N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	
Adryan Grossman	9/22	1415	[signature]	Trip Blank Received: Yes / No HCL / MeoH TBR
[signature]	9/22	1730	Received by: (Signature)	Temp: 1.6 °C; Bottles Received: 50x4oz
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature] ESC DTX	Date: 9/23/17 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Billing Information: Cura Emergency Services 12205 Chapel Hill Blvd. Suite 100 Plano, TX 75093

Pres Chk

Report to: Derek Logsdon

Email To: derek@curaes.com

Project Description: Carlsbad NM

City/State Collected: Carlsbad NM

Phone: 972-378-7341 Fax:

Client Project # EM171008F8

Lab Project #

Collected by (print): Grant Norvell

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LAB SCIENCES a subsidiary of Pace Analytical

12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859

L# L973841

Table #

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	pH	Remarks	Sample # (lab only)
SS-E-2in	Grab	SS	2in	9/20	12:09	1	✓		-11
SS-E-7in	Grab		7in	9/20	12:10	1	✓		-12
SS-7-2in	Grab		2in	9/20	12:18	1	✓		-13
SS-7-7in	Grab		7in	9/20	12:19	1	✓		-14
SS-8-2in	Grab		2in	9/20	12:28	1	✓		-15
SS-8-7in	Grab		7in	9/20	12:29	1	✓		-16
SS-9-2in	Grab		2in	9/20	12:36	1	✓		-17
SS-9-7in	Grab		7in	9/20	12:37	1	✓		-18
SS-10-2in	Grab		2in	9/20	12:47	1	✓		-19
SS-10-7in	Grab		7in	9/20	12:48	1	✓		-20

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other

Remarks:

pH ___ Temp ___

Flow ___ Other ___

Samples returned via: __ UPS X FedEx __ Courier

Tracking # 7384 4204 1880

Sample Receipt Checklist

COC Seal Present/Intact: NP ✓Y __N

COC Signed/Accurate: ✓Y __N

Bottles arrive intact: ✓Y __N

Correct bottles used: ✓Y __N

Sufficient volume sent: ✓Y __N

If Applicable

VOA Zero Headspace: __Y __N

Preservation Correct/Checked: __Y __N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Adryan Grossman	9/22	1415	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	9/22	1730	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)
			Kelly Mer ESC DTX

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 1.6 °C Bottles Received: 50x402

Date: 9/23/17 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Billing Information: Cura Emergency 16205 Chapel Hill Services Suite 100 Plano, TX 75093

Pres Chk

Report to: Derek Logsdon

Email To: derek@curaes.com

Project Description: Carlsbad, NM

City/State Collected: Carlsbad NM

Phone: 972-378-7341

Fax:

Client Project # EM171008F8

Lab Project #

Collected by (print): Grant Norvell

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative: PH	Remarks	Sample # (lab only)
SS-11-2in	Grab	SS	2in	9/20	1:42	1	✓		-21
SS-11-7in	Grab		7in	9/20	1:43	1	✓		-22
SS-12-2in	Grab		2in	9/20	1:50	1	✓		-23
SS-12-7in	Grab		7in	9/20	1:51	1	✓		-24
SS-13-2in	Grab		2in	9/20	1:57	1	✓		-25
SS-13-7in	Grab		7in	9/20	1:58	1	✓		-26
SS-14-2in	Grab		2in	9/20	2:07	1	✓		-27
SS-14-7in	Grab		7in	9/20	2:08	1	✓		-28
SS-15-2in	Grab		2in	9/20	2:15	1	✓		-29
SS-15-7in	Grab		7in	9/20	2:16	1	✓		-30

Chain of Custody Page ___ of ___

ESC LAB SCIENCES a subsidiary of Pace

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L938841

Table #

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __UPS X FedEx __Courier __ _____

Tracking # 7384 4204 1880

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Adryan Brossman	9/22	1415	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	9/22	1720	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			ESDTK

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 1.6 °C corr 0.0 Bottles Received: 50x402

Date: 9/23/17 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Billing Information: Cura Emergency Services. 6205 Chapel Hill Blvd. Suite 100 Plano, TX 75093

Report to: Derek Logsdon

Email To: derek@curaes.com

Project Description: Carlsbad, NM

City/State Collected: Carlsbad NM

Phone: 972-378-7341 Fax:

Client Project # EM171008F8

Lab Project #

Collected by (print): Grant Norvell

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LAB SCIENCES a subsidiary of Pace

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L938841

Table #

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PH	Remarks	Sample # (lab only)
SS-14-2in	Grab	SS	2in	9/20	2:35	1	✓		-31
SS-14-7in	Grab		7in	9/20	2:37	1	✓		-32
SS-17-2in	Grab		2in	9/20	2:43	1	✓		-33
SS-17-7in	Grab		7in	9/20	2:45	1	✓		-34
SS-18-2in	Grab		2in	9/20	2:52	1	✓		-35
SS-18-7in	Grab		7in	9/20	2:55	1	✓		-36
SS-19-2in	Grab		2in	9/20	3:06	1	✓		-37
SS-19-7in	Grab		7in	9/20	3:07	1	✓		-38
SS-20-2in	Grab		2in	9/20	3:15	1	✓		-39
SS-20-7in	Grab		7in	9/20	3:17	1	✓		-40

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N

Samples returned via: ___ UPS ___ FedEx ___ Courier ___

Tracking # 7384 4204 1880

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 4.6 °C corr -0.2 Bottles Received: 50x402

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Adryan Vrooman	9/22	1415	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	9/22	1730	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)
			Date: 9/23/17 Time: 0845

Billing Information: Cura Emergency Services, 6205 Chapel Hill Blvd Suite 100 Plano, TX 75093

Pres Chk

Report to: Derek Logsdon

Email To: derek@curaes.com

Project Description: Carlsbad, NM

City/State Collected: Carlsbad NM

Phone: 972-378-7341

Fax:

Client Project # EM171008F8

Lab Project #

Collected by (print): Grant Norvell

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LABORATORIES

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L938841

Table #

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PH	Remarks	Sample # (lab only)
SS-21-2in	Grab	SS	2in	9/20	3:37	1	✓		-41
SS-21-7in	Grab		7in	9/20	3:39	1	✓		-42
SS-21-2in dup	Grab		2in	9/20	3:37	1	✓		-43
SS-21-7in dup	Grab		7in	9/20	3:39	1	✓		-44
BG-1-2in	Grab		2in	9/20	3:49	1	✓		-45
BG-1-7in	Grab		7in	9/20	3:51	1	✓		-46
BG-2-2in	Grab		2in	9/20	4:00	1	✓		-47
BG-2-7in	Grab		7in	9/20	4:02	1	✓		-48
BG-3-2in	Grab		2in	9/20	4:09	1	✓		-49
BG-3-7in	Grab		7in	9/20	4:11	1	✓		-50

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking # 7384 4204 1880

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 1.6 °C Bottles Received: 80x402

If preservation required by Login: Date/Time

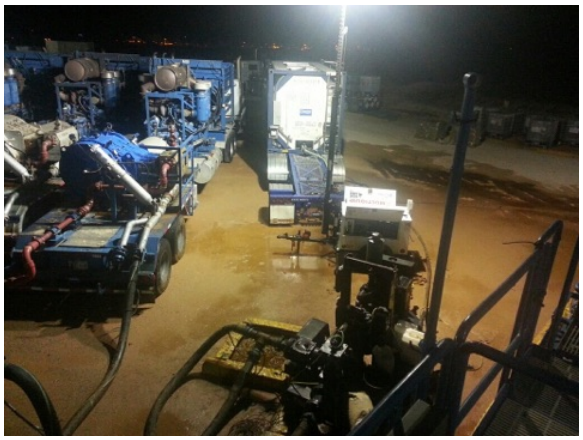
Hold:

Condition: NCF / OK

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Adryan Bowerman	9/22	14:15	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	9/22	1730	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Kelly Rice ESC TX

Date: 9/23/17 Time: 0845

PHOTOS / MAPS



CURA
EMERGENCY SERVICES
ENVIRONMENTAL

EM171008F8
Carlsbad, NM

CURA
EMERGENCY SERVICES
ENVIRONMENTAL

EM171008F8
Carlsbad, NM

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 220340

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 220340
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	5/25/2023