State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☐ Description of remediation activities

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

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 11/08/2022

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: Robert Hamlet Date: 1/25/2023

Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

TETRA TECH

November 8, 2022

Bradford Billings
Hydrologist/E.Spec.A
District 2 Artesia
1220 South St. Francis Drive
Oil Conservation Division
Santa Fe, NM 87505

Re: Release Characterization and Closure Request
ConocoPhillips
Heritage Concho
ETZ State Unit Battery Valve Release
Unit Letter F, Section 16, Township 17 South, Range 30 East
Eddy County, New Mexico
Incident ID# NAB1821441378
2RP-4887

Mr. Billings,

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess a Heritage Concho release and subsequent remedial actions taken at the ETZ State Unit Battery (Facility ID FAB1821441239). The release footprint is located in Public Land Survey System (PLSS) Unit Letter F, Section 16, Township 17 South, Range 30 East, in Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.836158°, -103.977973°, as shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico Oil Conservation Division (NMOCD) C-141 Initial Report, the release was discovered on July 24, 2018 while the battery was in the process of being dismantled due to the wells being plugged. The oil tanks were disconnected and moved, which included disconnecting the check valve to the Holly pipeline. The C-141 reports that when Holly placed the Houma Battery on line to sell oil, the check valve leaked causing the release. Approximately 5 barrels (bbls) of oil were released, of which 2 bbls were recovered. All fluids were contained inside of the facility firewalls. The NMOCD approved the initial C-141 on August 21, 2018 and subsequently assigned the release the Incident ID NAB1821441378 and the remediation permit (RP) number 2RP-4887. The initial C-141 form is included in Appendix A.

SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, playa lakes, stream bodies, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). The Site is in an area of low karst potential.

There are no water wells listed in the New Mexico Office of the State Engineer (NMOSE) database located within approximately ½ mile (800 meters) of the site. According to data from one (1) water well listed in the NMOSE database located 1,802 meters from the Site, the minimum depth to groundwater is 80 feet below ground surface (bgs). The site characterization data are presented in Appendix B.

Tetra Tech
901 West Wall St., Suite 100, Midland, TX 79701
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

REGULATORY FRAMEWORK

Based upon the release footprint and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total petroleum hydrocarbons (TPH), and chlorides in soil.

Based on the site characterization, established depth to groundwater, and in accordance with Table I of 19.15.29.12 NMAC, the RRALs for the Site are as follows:

Constituent	Site RRALs
Chloride	10,000 mg/kg
TPH (GRO+DRO+MRO)	2,500 mg/kg
GRO+DRO	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mgkg

Additionally, in accordance with the NMOCD guidance *Procedures for Implementation of the Spill Rule (19.15.29 NMAC)* (September 6, 2019), the following reclamation requirements for surface soils (0-4 ft bgs) outside of active oil and gas operations are as follows:

Constituent	Reclamation Requirements
Chloride	600 mg/kg
TPH	100 mg/kg
BTEX	50 mg/kg

SITE ASSESSMENT AND WORK PLAN

According to data provided in a Work Plan prepared by Concho on November 5, 2018, assessment sampling was conducted on September 5, 2018. Three (3) hand auger borings were installed to 5 feet bgs each in the release extent within the tank battery firewalls, and four (4) horizontal delineation samples were collected to the north, east, south, and west of the battery to 1 foot bgs, as shown on Figure 3. Following the receipt of sampling results, Concho proposed to excavate soils in the areas of AH-1 and AH-2 to a depth of 2 feet bgs and in the area of AH-3 (mistakenly identified in the Work Plan as AH-1) to a depth of 1 foot bgs. These areas correspond to soil intervals with Total TPH and BTEX concentrations above the Site RRALs. The proposed excavation consists of approximately 60 cubic yards of impacted soils. A copy of the Work Plan is included as Appendix C.

The Work Plan was originally submitted to the NMOCD and NMSLO via email on November 7, 2018. The Work Plan was approved by NMSLO on November 19, 2018 and resubmitted to the NMOCD on January 4, 2019. There is no available documentation of a response from the NMOCD. Copies of the regulatory correspondence are included in Appendix D.

VISUAL SITE INSPECTION SUMMARY

At the request of ConocoPhillips, Tetra Tech personnel conducted a records review and a visual Site inspection on September 21, 2022 at the release area evaluate to current conditions at the Site. Photographic documentation from the visual site inspection is included as Appendix E. Current site conditions are indicated in Figure 4. A list of observations made during the records review and visual Site inspection follow:

- According to the initial C-141 for the incident, the tank battery was in the process of being dismantled when the release occurred in August 2018.
- The most recently available historical aerial imagery (ESRI, 2020) shows that all onsite equipment has been removed, including the tank battery and spill containment.

- No surficial staining was noted at the point of release or the in the reported former release extent during the September 2022 visual Site inspection.
- Although the ETZ State Unit Battery (Facility ID FAB1821441239) is listed on NMOCD imaging as operated by COG Operating, Inc., it is understood that this facility was owned by Spur Energy, and Spur was believed responsible for the pad reclamation.
- The adjacent well on-pad, the ETZ C State #012 (30-015-20121) is indicated as plugged on the NMOCD Oil and Gas Map, and the Site has been released. The OGRID associated with the adjacent well is Mack Energy Corporation.
- Photographs from the former battery location indicate that the former pad has been reclaimed, and the area currently has established uniform vegetative cover with a life-form ratio of plus or minus fifty percent of pre-disturbance levels.

CONCLUSION

Based on the reclamation work performed at the Site and the recent visual Site inspection, ConocoPhillips requests closure for this release. The final C-141 form is enclosed in Attachment A.

Should you have any questions or comments regarding this report, please do not hesitate to contact me at 512-739-7874 or Christian at 512-338-2861.

Sincerely,
Tetra Tech, Inc.

Samantha K. Abbott, P.G.
Project Manager

Christian M. Llull, P.G.
Program Manager

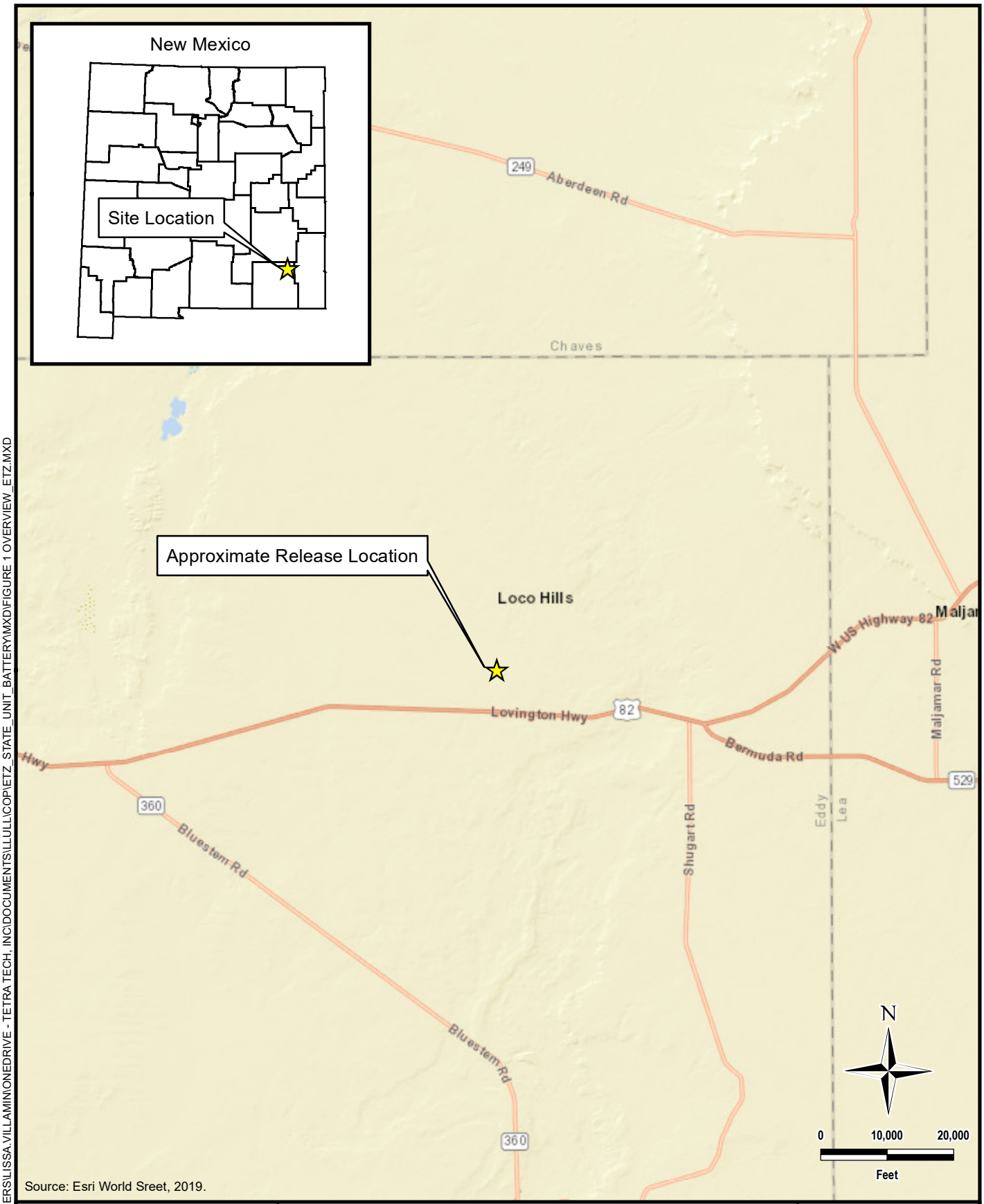
cc:
Mr. Ike Tavarez, RMR – ConocoPhillips
Mr. Charles Beauvais, BU – ConocoPhillips

LIST OF ATTACHMENTS

Figures:

Appendices:

FIGURES



Source: Esri World Sreet, 2019.

DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LLULL\COP\ETZ_STATE_UNIT_BATTERY\MXD\FIGURE 1 OVERVIEW_ETZ.MXD

TETRA TECH
www.tetratech.com
901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

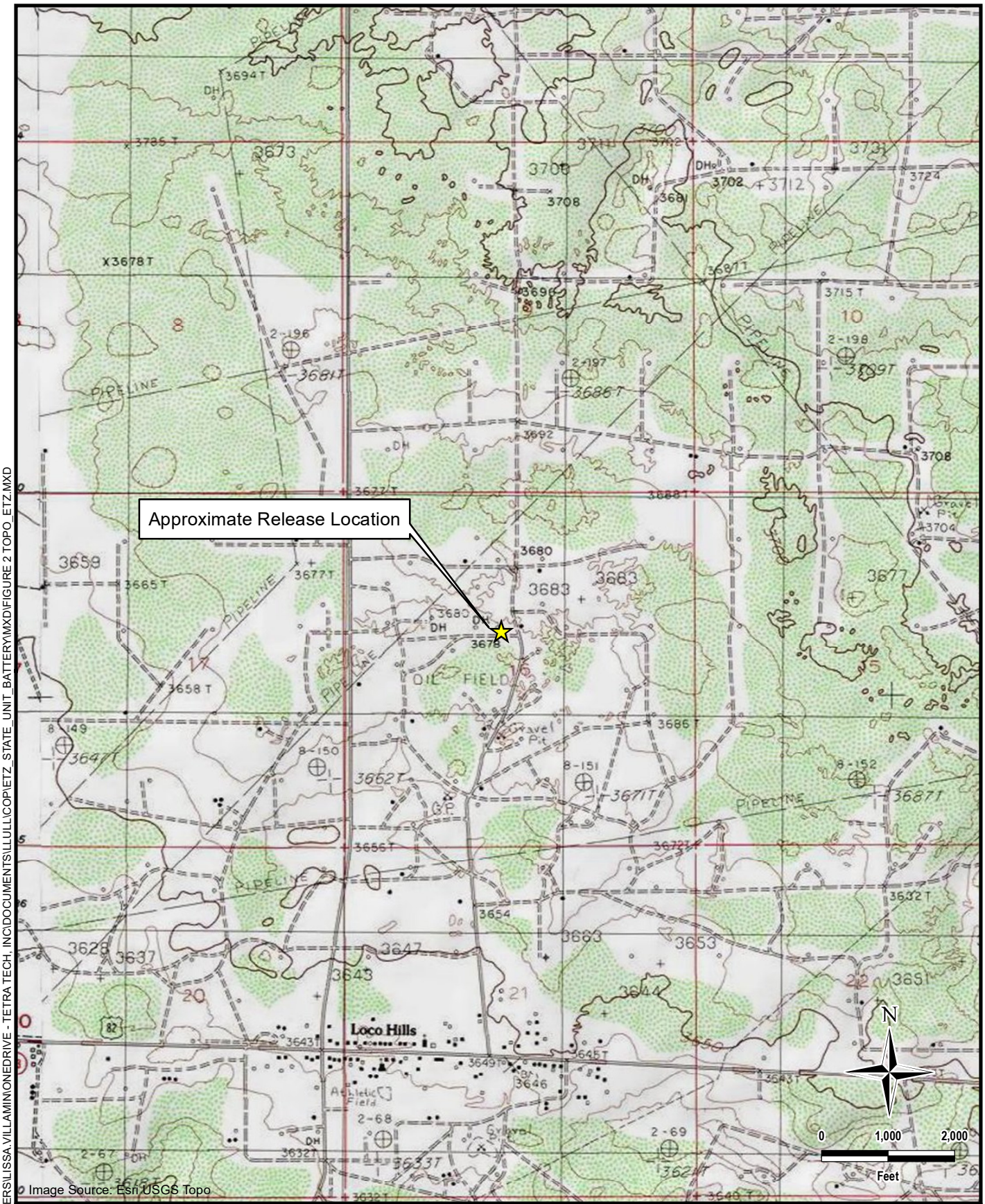
CONOCOPHILLIPS

NAB1821441378
(32.836158°, -103.977973°)
EDDY COUNTY, NEW MEXICO

ETZ STATE UNIT BATTERY VALVE RELEASE
OVERVIEW MAP

PROJECT NO.:	212C-MD-02849
DATE:	OCTOBER 26, 2022
DESIGNED BY:	LMV

Figure No.
1



DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LULL\COP\ETZ_STATE_UNIT_BATTERY\MXD\FIGURE 2 TOPO_ETZ.MXD

TETRA TECH
www.tetratech.com
901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

CONOCOPHILLIPS

NAB1821441378
(32.836158°, --103.977973°)
EDDY COUNTY, NEW MEXICO

ETZ STATE UNIT BATTERY VALVE RELEASE
TOPOGRAPHIC MAP

PROJECT NO.:	212C-MD-02849
DATE:	OCTOBER 26, 2022
DESIGNED BY:	LMV

Figure No.
2

DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LLULL\COP\ETZ_STATE_UNIT_BATTERY\MXD\FIGURE 3 RELEASE AND ASSESSMENT_ETZ.MXD

TETRA TECH
www.tetratech.com
901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

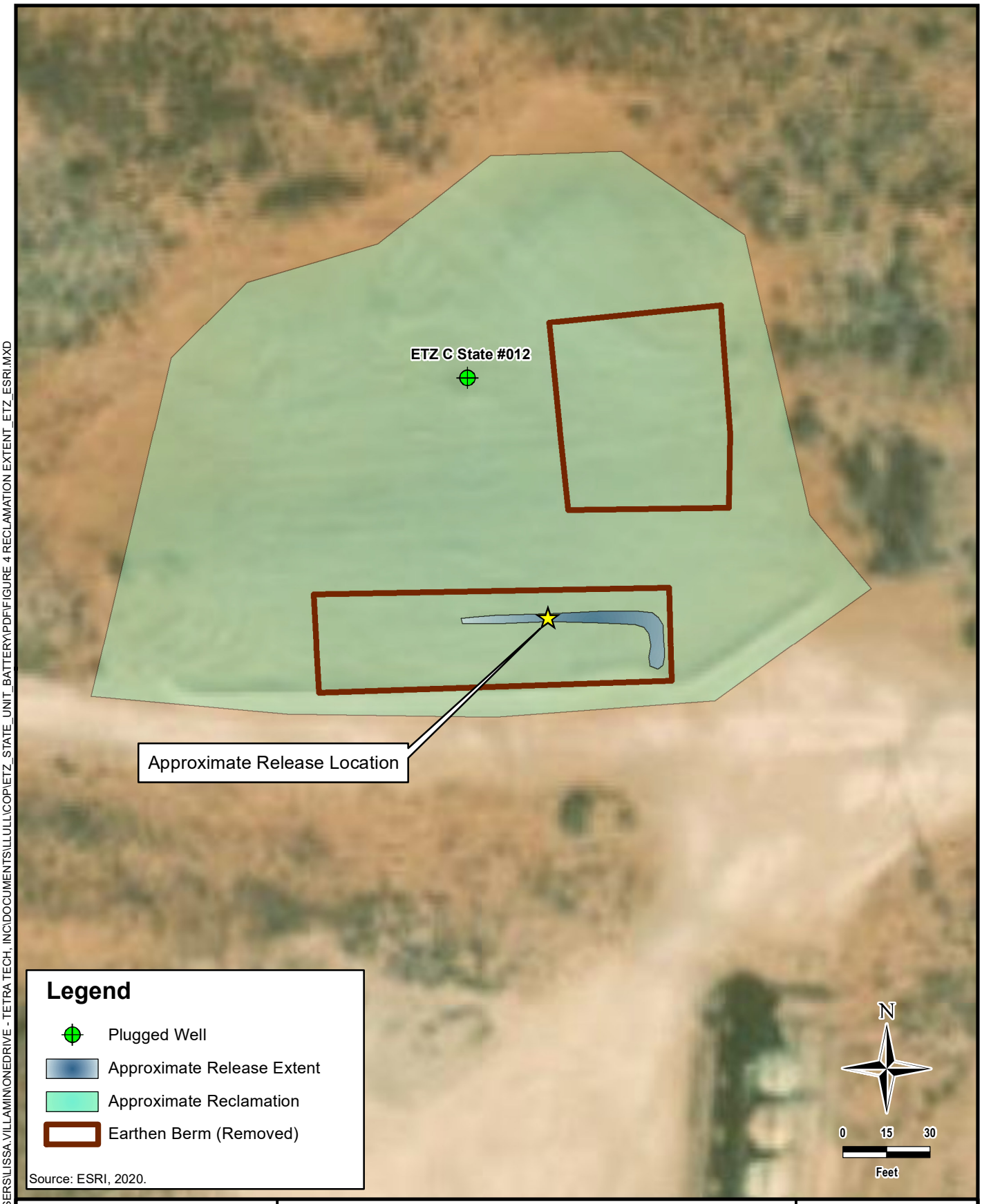
CONOCOPHILLIPS

NAB1821441378
(32.836158°, --103.977973°)
EDDY COUNTY, NEW MEXICO

ETZ STATE UNIT BATTERY VALVE RELEASE
APPROXIMATE RELEASE EXTENT AND SITE ASSESSMENT (COG)

PROJECT NO.:	212C-MD-02849
DATE:	OCTOBER 26, 2022
DESIGNED BY:	LMV

Figure No.
3



DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LLULL\COP\ETZ_STATE_UNIT_BATTERY\PDF\FIGURE 4 RECLAMATION EXTENT_ETZ_ESRI.MXD

TETRA TECH

www.tetratech.com

901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

CONOCOPHILLIPS

NAB1821441378
(32.836158°, --103.977973°)
EDDY COUNTY, NEW MEXICO

ETZ STATE UNIT BATTERY VALVE RELEASE
APPROXIMATE RECLAMATION EXTENT

PROJECT NO.:	212C-MD-02849
DATE:	OCTOBER 27, 2022
DESIGNED BY:	LMV

Figure No.
4

APPENDIX A
C-141 Forms

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.

fAB1821441239
nAB1821441378

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: **ETZ State Unit Battery**	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner: State	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	16	17S	30E					Eddy

Latitude 32.83615875 **Longitude** -103.97797353 NAD83

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 5 bbl.	Volume Recovered: 2 bbl.
Source of Release: Valve Failure	Date and Hour of Occurrence: July 24, 2018 2:00pm	Date and Hour of Discovery: July 24, 2018 2:00pm
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The ETZ State Unit Battery is in the process of being dismantled due to the wells being plugged. The oil tanks were disconnected and moved, which included disconnecting the check valve to the Holly pipeline. When Holly placed the Houma Battery on line to sell oil, the check valve leaked causing the release.

Describe Area Affected and Cleanup Action Taken.*

The release was on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant 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 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: DeAnn Grant	OIL CONSERVATION DIVISION
Printed Name: DeAnn Grant	Approved by Environmental Specialist: Maria Pruett
Title: HSE Administrative Assistant	Approval Date: 8/2/18 Expiration Date: N/A
E-mail Address: agrant@concho.com	Conditions of Approval: See attached Attached: 2RP-4887
Date: July 31, 2018 Phone: 432-253-4513	

* Attach Additional Sheets If Necessary

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 11/08/2022

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☐ Description of remediation activities

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

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 11/08/2022

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: _____

Printed Name: _____ Title: _____

APPENDIX B
Site Characterization Data

OCD Waterbodies Map

10/26/2022, 8:48:06 AM

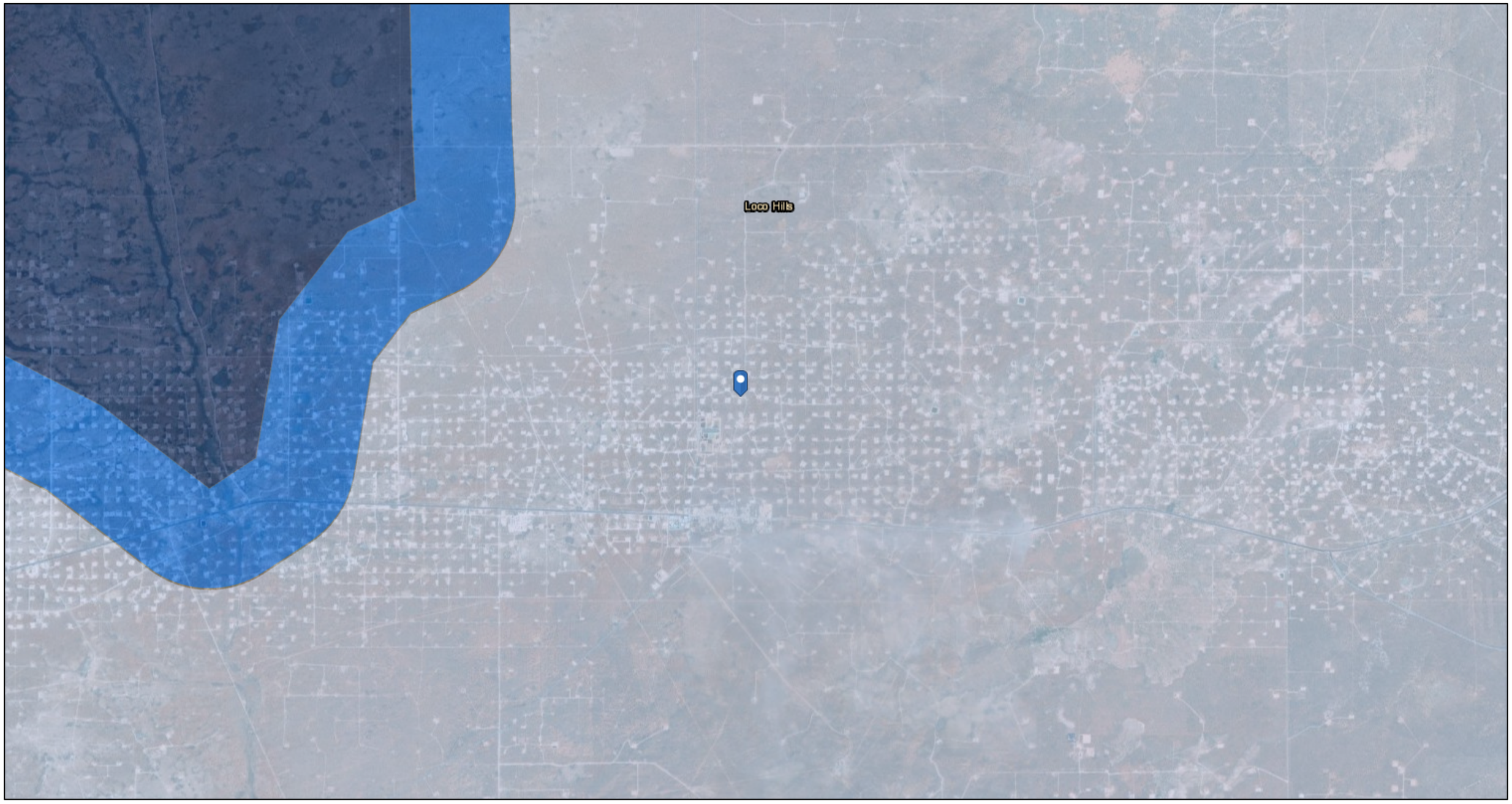
1:4,514

0 0.05 0.1 0.19 mi

0 0.07 0.15 0.3 km

Esri, HERE, Garmin, GeoTechnologies, Inc., Maxar, NM OSE

OCD Karst Potential Map



10/26/2022, 8:51:20 AM

Karst Occurrence Potential

- High
- Medium
- Low

1:72,224

0 0.75 1.5 3 mi

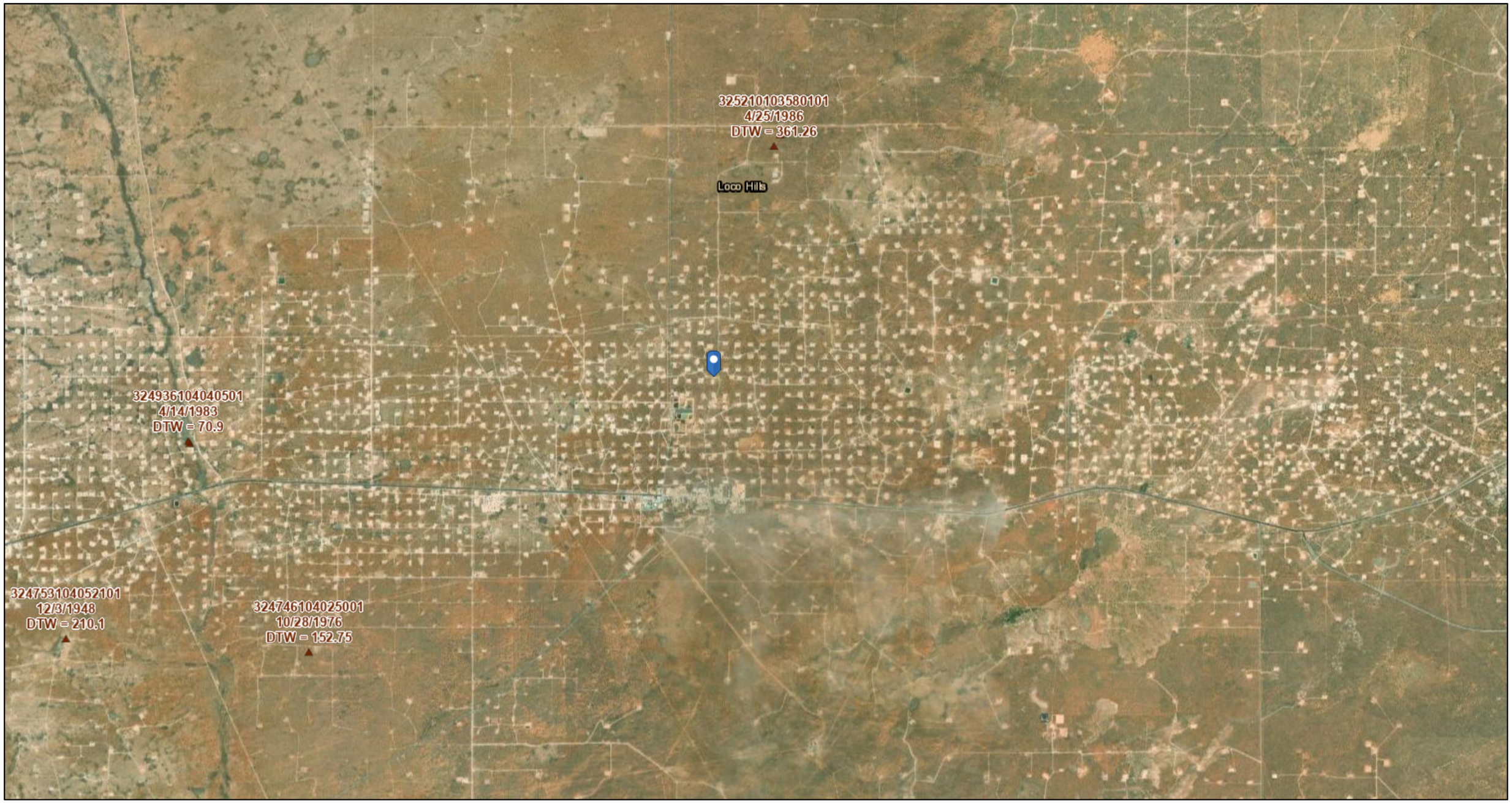
0 1 2 4 km

BLM, OCD, New Mexico Tech, Esri, HERE, Garmin, Earthstar Geographics

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

OCD USGS Groundwater



10/26/2022, 8:53:28 AM

▲ USGS Historical GW Wells

1:72,224

0 0.75 1.5 3 mi

0 1 2 4 km

Esri, HERE, Garmin, Earthstar Geographics, USGS

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
RA 11914 POD1	RA	ED	2	4	2	20	17S	30E	594801	3632002	1802	85	80	5

Average Depth to Water: **80 feet**

Minimum Depth: **80 feet**

Maximum Depth: **80 feet**

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 595663.36 **Northing (Y):** 3633584.79 **Radius:** 2000

APPENDIX C
Work Plan
(November 5, 2018)

CONCHO

November 5, 2018

Mike Bratcher and Maria Pruett
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

Ryan Mann
New Mexico State Land Office
1001 S. Atkinson
Roswell, NM 88230

Re: Work Plan
ETZ State Tank Battery (7/24/18)
RP#: 2RP-4887
GPS: 32.836158, -103.977973
Unit Letter F, Section 16, Township 17 South, Range 30 East
Eddy County, New Mexico

Ms. Pruett/ Mr. Ryan,

COG Operating, LLC (COG) is pleased to submit the following work plan in response to a release that occurred at the ETZ State Tank Battery located in Unit Letter F, Section 16, Township 17 South and Range 30 East in Eddy County, New Mexico.

BACKGROUND

The release was discovered on August 18, 2018 and a C-141 initial report was submitted and approved by the New Mexico Oil Conservation Division (NMOCD). The initial C-141 is shown in Appendix A. The ETZ State Unit Battery was in the process of being dismantled due to the wells being plugged. The oil tanks were disconnected and moved, which included disconnecting the check valve to the Holly pipeline. When Holly placed the Houma Battery on line to sell oil, the check valve leaked causing the release. Approximately five (5) barrels of oil were released and recovered two (2) barrels of oil. All of the fluids were contained inside the facility firewalls.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the New Mexico Office of the State Engineer (NMOSE), reported a water well located in Section 20 with groundwater depth of 80 feet below surface. The Chevron Trend Map show a depth to water >100 feet. The water well information is shown in Appendix B.

A risk based evaluation and site determinations were perform in accordance to the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production in New Mexico (effective August 14, 2018). According to the site characterization evaluation, no other receptors (water wells, playas, karst, water course, lake beds or ordinance boundaries) were located within each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data is summarized in Appendix B. The delineation and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None Encountered	50-100 feet

Delineation and Closure Criteria:

Remedial Action Levels (RALs)	
Chlorides	10,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

PROPOSED WORK PLAN

- The areas of AH-1 and AH-2 will be excavated to a depth of 2.0 below surface to remove the impacted soil above the RALs.
- Auger hole (AH-1) will be excavated to a depth of approximately 1.0’ below surface.
- All of the excavated material will be hauled to an NMOCD approved disposal facility.
- The excavation will be backfilled with clean backfilled material.

SAMPLING PLAN

Once the excavation is complete, soil confirmation samples will be collected from the excavated areas. To collect representative samples, composite samples (5-point composite) will be collected every 200 square feet for the final confirmation sampling for the constituents of concern. Discrete soil samples will be collected from the excavation if any “hot spots” are encountered during the excavation.

REMEDIATION TIMEFRAME AND ESTIMATED VOLUME

The remediation will be performed 90 days after the work plan has been approved. Approximately 60 cubic yards of impacted soil will be excavated from the impacted area.

SITE RECLAMATION AND RESTORATION

All of the impacted soil remained on the pad and no reclamation activities will be required at the site.

Should you have any questions or concerns on the proposed remediation activities, please do not hesitate to contact me.

Sincerely,
Concho Operating, LLC

Ike Tavarez, P. G.
Senior HSE Supervisor
itavarez@concho.com

CC:

Figures

Tables

Table 1

COG Operating LLC.

ETZ State Tank Battery

Eddy County, New Mexico

Sample ID	Sample Date	Soil Status		TPH (mg/kg)							Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
		In-Situ	Removed	GRO	DRO	MRO	*Total*	GRO	DRO	*Total*			
Average Depth to Groundwater (ft)	**50 -100'**												
NMOCD RRAL Limits (mg/kg)				-	-	-	**2,500**	-	-	**1,000**	**10**	**50**	**10,000**
AH-1 (0-1')	9/5/2018	X		1520	4140	<74.8	**5660**	1520	4140	**5,660**	1.96	**86.8**	<5.01
AH-1 (1-1.5')	9/5/2018	X		2460	3780	<74.7	**6240**	2460	3780	**6,240**	27.2	**436**	<4.97
AH-1 (2-2.5')	9/5/2018	X		73.2	149	42.4	265	73.2	149	222	0.0021	1.04	<4.99
AH-1 (3-3.5')	9/5/2018	X		-	-	-	-	-	-	-	-		<5.0
AH-1 (4-4.5')	9/5/2018	X											<5.0
AH-2 (0-1')	9/5/2018	X		1910	5240	<74.8	**7150**	1910	5240	**7,150**	2.57	**241**	10.7
AH-2 (1-1.5')	9/5/2018	X		1780	3240	<74.9	**5020**	1780	3240	**5,020**	1.95	**253**	<4.97
AH-2 (2-2.5')	9/5/2018	X		<15.0	157	16.9	174	<15.0	157	157	<0.001	<0.001	<5.01
AH-2 (3-3.5')	9/5/2018	X		-	-	-	-	-	-	-	-		<5.0
AH-2 (4-4.5')	9/5/2018	X		-	-	-	-	-	-	-	-		<5.0
AH-3 (0-1')	9/5/2018	X		2270	5700	<75.0	**7970**	2270	5700	**7,970**	0.222	**76.0**	<4.95
AH-3 (1-1.5')	9/5/2018	X		123	291	<14.9	414	123	291	414	<0.100	3.16	12.1
AH-3 (2-2.5')	9/5/2018	X		-	-	-	-	-	-	-	-	-	<4.96
AH-3 (3-3.5')	9/5/2018	X		-	-	-	-	-	-	-	-	-	<4.95
AH-3 (4-4.45')	9/5/2018	X		-	-	-	-	-	-	-	-	-	<4.96
North (0-1')	9/5/2018	X		<14.9	17.9	<14.9	17.9	<14.9	17.9	17.9	<0.00200	<0.00200	223
South (0-1')	9/5/2018	X		<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	1190
East (0-1')	9/5/2018	X		<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	152
West (0-1')	9/5/2018	X		<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	83.8

Proposed Excavation Depth

(-) Not Analyzed

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: **ETZ State Unit Battery**	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner: State	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	16	17S	30E					Eddy

Latitude 32.83615875 **Longitude** -103.97797353 NAD83

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 5 bbl.	Volume Recovered: 2 bbl.
Source of Release: Valve Failure	Date and Hour of Occurrence: July 24, 2018 2:00pm	Date and Hour of Discovery: July 24, 2018 2:00pm
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The ETZ State Unit Battery is in the process of being dismantled due to the wells being plugged. The oil tanks were disconnected and moved, which included disconnecting the check valve to the Holly pipeline. When Holly placed the Houma Battery on line to sell oil, the check valve leaked causing the release.

Describe Area Affected and Cleanup Action Taken.*

The release was on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant 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 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: DeAnn Grant	OIL CONSERVATION DIVISION
Printed Name: DeAnn Grant	Approved by Environmental Specialist:
Title: HSE Administrative Assistant	Approval Date: / Expiration Date:
E-mail Address: agrant@concho.com	Conditions of Approval: / Attached ☐
Date: July 31, 2018 Phone: 432-253-4513	

* Attach Additional Sheets If Necessary

Incident ID	
District RP	2RP 4887
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?	50-100 (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? 515	☐ 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	
District RP	2RP 4887
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: Ike Tavarez Title: Senior HSE Supervisor

Signature: _____ Date: 10/24/18

email: itavarez@concho.com Telephone: 432-683-7443

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP 4887
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature: _____ Date: 10/24/18

email: itavarez@concho.com Telephone: 432-683-7443

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	2RP 4887
Facility ID	
Application ID	

Closure

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

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

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

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

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

☐ Description of remediation activities

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

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

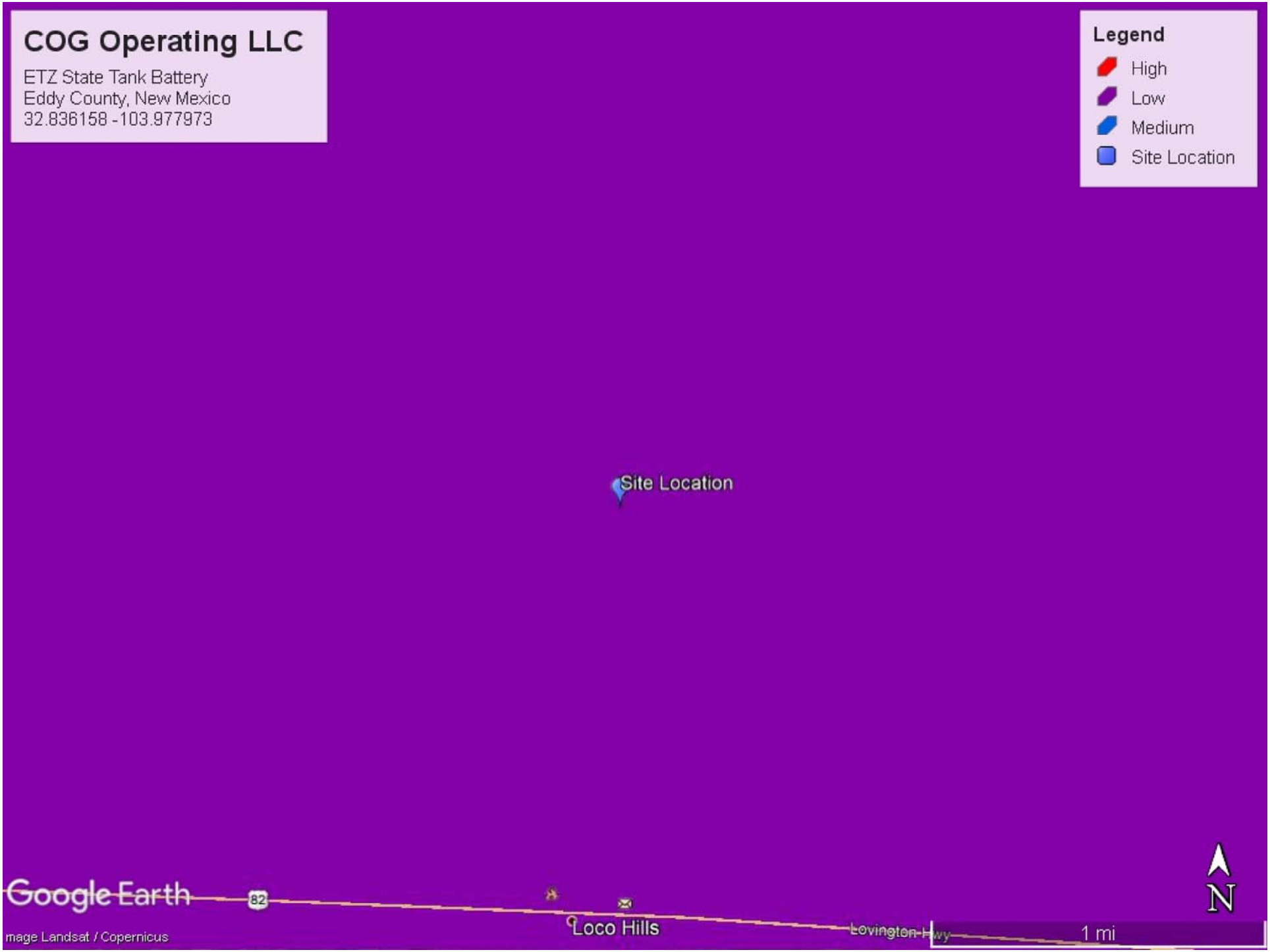
Received by: _____ Date: _____

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: _____

Printed Name: _____ Title: _____

Appendix B



New Mexico NFHL Data

November 7, 2018

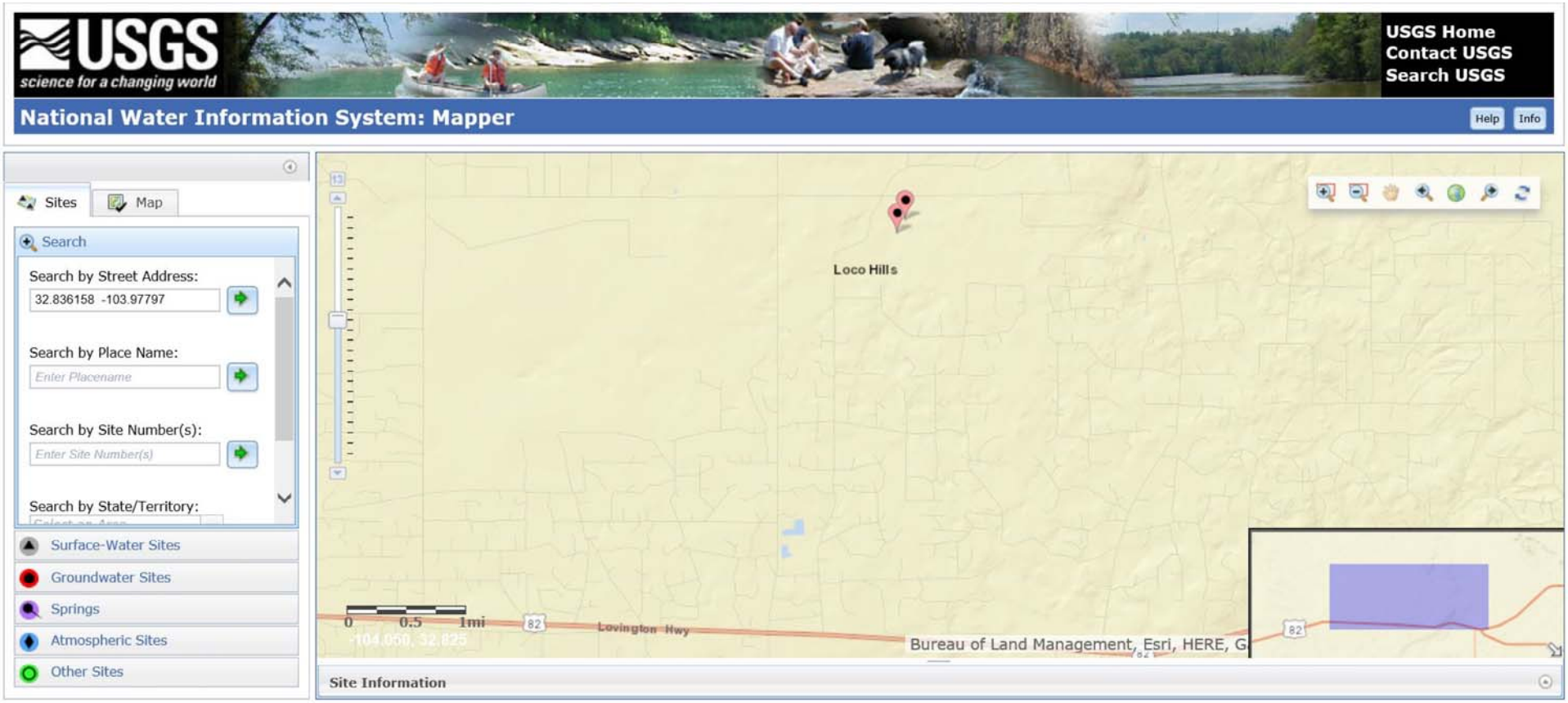
1:18,056

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

nmflood.org is made possible through a collaboration with NMDHSEM, EDAC, and FEMA
This is a non-regulatory product for informational use only. Please consult your local floodplain administrator for further information.



USGS science for a changing world

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
- **UPDATE, 11/2: The USGS continues to make progress on restoring all of its gages. As of 3 p.m. Friday, November 2, less than 3 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. The USGS will continue to work through the weekend to bring the streamgages back online. Read more**
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =
- 325216103575701

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

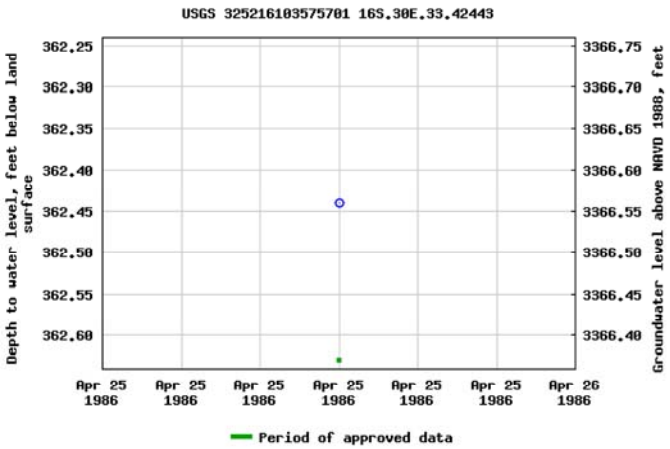
USGS 325216103575701 16S.30E.33.42443

Available data for this site: Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code --
Latitude 32°52'16", Longitude 103°57'57" NAD27
Land-surface elevation 3,729 feet above NAVD88
The depth of the well is 385 feet below land surface.
This well is completed in the Santa Rosa Sandstone (231SNRS) 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

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 Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 11914 POD1	RA	ED	2	4	2	20	17S	30E	594801	3632002	85	80	5

Average Depth to Water: **80 feet**

Minimum Depth: **80 feet**

Maximum Depth: **80 feet**

Record Count: 1

PLSS Search:

Section(s): 20 **Township:** 17S **Range:** 30E

Appendix C

Certificate of Analysis Summary 598150

COG Operating LLC, Artesia, NM

Project Name: ETZ State Tank Battery (7-24-18)

Project Id:

Contact: Ike Tavarez

Project Location: Eddy County, New Mexico

Date Received in Lab: Thu Sep-06-18 09:43 am

Report Date: 29-OCT-18

Project Manager: Jessica Kramer

Analysis Requested		Lab Id:	598150-001		598150-002		598150-003		598150-004		598150-005		598150-006	
		Field Id:	AH-1 (0-1')		AH-1 (1-1.5')		AH-1 (2-2.5')		AH-1 (3-3.5')		AH-1 (4-4.5')		AH-2 (0-1')	
		Depth:												
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Sampled:	Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00	
BTEX by EPA 8021B		Extracted:	Sep-09-18 10:00		Sep-10-18 16:00		Sep-12-18 15:00						Sep-10-18 16:00	
		Analyzed:	Sep-10-18 05:35		Sep-11-18 02:30		Sep-13-18 09:10						Sep-11-18 02:50	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL					mg/kg	RL
Benzene			1.96	0.198	27.2	2.01	0.00214	0.00200					2.57	0.498
Toluene			21.5	0.198	158	2.01	0.133	0.00200					59.2	0.498
Ethylbenzene			21.6	0.198	116	2.01	0.332	0.00200					76.3	0.498
m,p-Xylenes			25.4	0.397	98.4	4.02	0.376	0.00401					70.3	0.996
o-Xylene			16.3	0.198	36.6	2.01	0.197	0.00200					32.3	0.498
Total Xylenes			41.7	0.198	135	2.01	0.573	0.00200					103	0.498
Total BTEX			86.8	0.198	436	2.01	1.04	0.00200					241	0.498
Chloride by EPA 300		Extracted:	Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00	
		Analyzed:	Sep-06-18 19:08		Sep-06-18 19:13		Sep-06-18 19:19		Sep-06-18 19:24		Sep-06-18 19:29		Sep-06-18 19:50	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride			<5.01	5.01	<4.97	4.97	<4.99	4.99	<5.00	5.00	<5.00	5.00	10.7	4.97
TPH By SW8015 Mod		Extracted:	Sep-06-18 11:00		Sep-06-18 11:00		Sep-11-18 12:00						Sep-06-18 11:00	
		Analyzed:	Sep-06-18 23:32		Sep-06-18 23:52		Sep-11-18 21:10						Sep-07-18 00:12	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL					mg/kg	RL
Gasoline Range Hydrocarbons			1520	74.8	2460	74.7	73.2	15.0					1910	74.8
Diesel Range Organics			4140	74.8	3780	74.7	149	15.0					5240	74.8
Motor Oil Range Hydrocarbons (MRO)			<74.8	74.8	<74.7	74.7	42.4	15.0					<74.8	74.8
Total TPH			5660	74.8	6240	74.7	265	15.0					7150	74.8

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 598150

COG Operating LLC, Artesia, NM

Project Name: ETZ State Tank Battery (7-24-18)

Project Id:

Contact: Ike Tavarez

Project Location: Eddy County, New Mexico

Date Received in Lab: Thu Sep-06-18 09:43 am

Report Date: 29-OCT-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	598150-007		598150-008		598150-009		598150-010		598150-011		598150-012	
	Field Id:	AH-2 (1-1.5')		AH-2 (2-2.5')		AH-2 (3-3.5')		AH-2 (4-4.5')		AH-3 (0-1')		AH-3 (1-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00	
BTEX by EPA 8021B	*Extracted:*	Sep-10-18 16:00		Sep-12-18 15:00						Sep-09-18 10:00		Sep-07-18 17:00	
	Analyzed:	Sep-11-18 03:10		Sep-13-18 08:49						Sep-10-18 01:53		Sep-08-18 02:13	
	Units/RL:	mg/kg	RL	mg/kg	RL					mg/kg	RL	mg/kg	RL
Benzene		1.95	0.499	<0.00199	0.00199					0.222	0.199	<0.100	0.100
Toluene		56.6	0.499	<0.00199	0.00199					1.33	0.199	0.118	0.100
Ethylbenzene		80.5	0.499	<0.00199	0.00199					4.72	0.199	0.177	0.100
m,p-Xylenes		73.4	0.998	<0.00398	0.00398					38.0	0.398	1.82	0.201
o-Xylene		41.0	0.499	<0.00199	0.00199					31.7	0.199	1.04	0.100
Total Xylenes		114	0.499	<0.00199	0.00199					69.7	0.199	2.86	0.100
Total BTEX		253	0.499	<0.00199	0.00199					76.0	0.199	3.16	0.100
Chloride by EPA 300	*Extracted:*	Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 15:00	
	Analyzed:	Sep-06-18 19:56		Sep-06-18 20:12		Sep-06-18 20:17		Sep-06-18 20:22		Sep-06-18 20:27		Sep-06-18 20:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.95	4.95	<4.97	4.97	<5.01	5.01	<5.00	5.00	<4.95	4.95	12.1	4.96
TPH By SW8015 Mod	*Extracted:*	Sep-06-18 11:00		Sep-11-18 12:00						Sep-06-18 11:00		Sep-06-18 11:00	
	Analyzed:	Sep-07-18 00:32		Sep-11-18 16:30						Sep-07-18 00:51		Sep-07-18 01:11	
	Units/RL:	mg/kg	RL	mg/kg	RL					mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		1780	74.9	<15.0	15.0					2270	75.0	123	14.9
Diesel Range Organics		3240	74.9	157	15.0					5700	75.0	291	14.9
Motor Oil Range Hydrocarbons (MRO)		<74.9	74.9	16.9	15.0					<75.0	75.0	<14.9	14.9
Total TPH		5020	74.9	174	15.0					7970	75.0	414	14.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 598150

COG Operating LLC, Artesia, NM

Project Name: ETZ State Tank Battery (7-24-18)

Project Id:

Contact: Ike Tavarez

Project Location: Eddy County, New Mexico

Date Received in Lab: Thu Sep-06-18 09:43 am

Report Date: 29-OCT-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	598150-013		598150-014		598150-015		598150-016		598150-017		598150-018	
	Field Id:	AH-3 (2-2.5')		AH-3 (3-3.5')		AH-3 (4-4.45')		North (0-1')		South (0-1')		East (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00		Sep-05-18 00:00	
BTEX by EPA 8021B	*Extracted:*							Sep-07-18 17:00		Sep-09-18 10:00		Sep-07-18 17:00	
	Analyzed:							Sep-08-18 01:52		Sep-10-18 00:32		Sep-08-18 04:00	
	Units/RL:							mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene								<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199
Toluene								<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199
Ethylbenzene								<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199
m,p-Xylenes								<0.00401	0.00401	<0.00404	0.00404	<0.00398	0.00398
o-Xylene								<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199
Total Xylenes								<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199
Total BTEX								<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199
Chloride by EPA 300	*Extracted:*	Sep-06-18 15:00		Sep-06-18 15:00		Sep-06-18 17:00		Sep-06-18 17:00		Sep-06-18 17:00		Sep-06-18 17:00	
	Analyzed:	Sep-06-18 20:38		Sep-06-18 20:43		Sep-06-18 21:31		Sep-06-18 21:36		Sep-06-18 21:42		Sep-06-18 21:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.96	4.96	<4.95	4.95	<4.96	4.96	223	4.95	1190	24.8	152	4.95
TPH By SW8015 Mod	*Extracted:*							Sep-06-18 11:00		Sep-06-18 11:00		Sep-06-18 11:00	
	Analyzed:							Sep-07-18 01:31		Sep-07-18 01:51		Sep-07-18 02:11	
	Units/RL:							mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons								<14.9	14.9	<15.0	15.0	<15.0	15.0
Diesel Range Organics								17.9	14.9	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)								<14.9	14.9	<15.0	15.0	<15.0	15.0
Total TPH								17.9	14.9	<15.0	15.0	<15.0	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 598150

COG Operating LLC, Artesia, NM

Project Name: ETZ State Tank Battery (7-24-18)

Project Id:

Contact: Ike Tavarez

Project Location: Eddy County, New Mexico

Date Received in Lab: Thu Sep-06-18 09:43 am

Report Date: 29-OCT-18

Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	598150-019						
	Field Id:	West (0-1')						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Sep-05-18 00:00						
BTEX by EPA 8021B	***Extracted:***	Sep-07-18 17:00						
	Analyzed:	Sep-08-18 04:21						
	Units/RL:	mg/kg	RL					
Benzene		<0.00202	0.00202					
Toluene		<0.00202	0.00202					
Ethylbenzene		<0.00202	0.00202					
m,p-Xylenes		<0.00403	0.00403					
o-Xylene		<0.00202	0.00202					
Total Xylenes		<0.00202	0.00202					
Total BTEX		<0.00202	0.00202					
Chloride by EPA 300	***Extracted:***	Sep-06-18 17:00						
	Analyzed:	Sep-06-18 22:03						
	Units/RL:	mg/kg	RL					
Chloride		83.8	4.95					
TPH By SW8015 Mod	***Extracted:***	Sep-06-18 11:00						
	Analyzed:	Sep-07-18 02:31						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons		<15.0	15.0					
Diesel Range Organics		<15.0	15.0					
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0					
Total TPH		<15.0	15.0					

Kelsey Brooks
Project Manager

Analytical Report 598150

for

COG Operating LLC

Project Manager: Ike Tavarez

ETZ State Tank Battery (7-24-18)

29-OCT-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

29-OCT-18

Project Manager: **Ike Tavarez**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **598150**
ETZ State Tank Battery (7-24-18)
Project Address: Eddy County, New Mexico

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 598150. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 598150 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 (0-1')	S	09-05-18 00:00		598150-001
AH-1 (1-1.5')	S	09-05-18 00:00		598150-002
AH-1 (2-2.5')	S	09-05-18 00:00		598150-003
AH-1 (3-3.5')	S	09-05-18 00:00		598150-004
AH-1 (4-4.5')	S	09-05-18 00:00		598150-005
AH-2 (0-1')	S	09-05-18 00:00		598150-006
AH-2 (1-1.5')	S	09-05-18 00:00		598150-007
AH-2 (2-2.5')	S	09-05-18 00:00		598150-008
AH-2 (3-3.5')	S	09-05-18 00:00		598150-009
AH-2 (4-4.5')	S	09-05-18 00:00		598150-010
AH-3 (0-1')	S	09-05-18 00:00		598150-011
AH-3 (1-1.5')	S	09-05-18 00:00		598150-012
AH-3 (2-2.5')	S	09-05-18 00:00		598150-013
AH-3 (3-3.5')	S	09-05-18 00:00		598150-014
AH-3 (4-4.45')	S	09-05-18 00:00		598150-015
North (0-1')	S	09-05-18 00:00		598150-016
South (0-1')	S	09-05-18 00:00		598150-017
East (0-1')	S	09-05-18 00:00		598150-018
West (0-1')	S	09-05-18 00:00		598150-019

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: ETZ State Tank Battery (7-24-18)

Project ID:
Work Order Number(s): *598150*

Report Date: *29-OCT-18*
Date Received: *09/06/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3062552 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Dilution due to poor resolution of internal caused by matrix interference.

Batch: LBA-3062575 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 598150-001,598150-011.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3062716 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 598150-006,598150-002,598150-007.

Batch: LBA-3063031 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 598150-003.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-1 (0-1')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-001 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	09.06.18 19.08	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**1520**	74.8	mg/kg	09.06.18 23.32		5
Diesel Range Organics	C10C28DRO	**4140**	74.8	mg/kg	09.06.18 23.32		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<74.8	74.8	mg/kg	09.06.18 23.32	U	5
Total TPH	PHC635	**5660**	74.8	mg/kg	09.06.18 23.32		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	09.06.18 23.32	
o-Terphenyl	84-15-1	126	%	70-135	09.06.18 23.32	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-1 (0-1')**	Matrix:	Soil
Lab Sample Id:	598150-001	Date Collected:	09.05.18 00.00
Date Received:	09.06.18 09.43		
Analytical Method:	BTEX by EPA 8021B	Prep Method:	SW5030B
Tech:	ALJ	% Moisture:	
Analyst:	ALJ	Date Prep:	09.09.18 10.00
Basis:	Wet Weight		
Seq Number:	3062575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**1.96**	0.198	mg/kg	09.10.18 05.35		100
Toluene	108-88-3	**21.5**	0.198	mg/kg	09.10.18 05.35		100
Ethylbenzene	100-41-4	**21.6**	0.198	mg/kg	09.10.18 05.35		100
m,p-Xylenes	179601-23-1	**25.4**	0.397	mg/kg	09.10.18 05.35		100
o-Xylene	95-47-6	**16.3**	0.198	mg/kg	09.10.18 05.35		100
Total Xylenes	1330-20-7	**41.7**	0.198	mg/kg	09.10.18 05.35		100
Total BTEX		**86.8**	0.198	mg/kg	09.10.18 05.35		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	593	%	70-130	09.10.18 05.35	**
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.10.18 05.35	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-1 (1-1.5')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-002 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	09.06.18 19.13	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**2460**	74.7	mg/kg	09.06.18 23.52		5
Diesel Range Organics	C10C28DRO	**3780**	74.7	mg/kg	09.06.18 23.52		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<74.7	74.7	mg/kg	09.06.18 23.52	U	5
Total TPH	PHC635	**6240**	74.7	mg/kg	09.06.18 23.52		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.06.18 23.52	
o-Terphenyl	84-15-1	104	%	70-135	09.06.18 23.52	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-1 (1-1.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-002	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.10.18 16.00	Basis:	Wet Weight
Seq Number:	3062716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**27.2**	2.01	mg/kg	09.11.18 02.30		1000
Toluene	108-88-3	**158**	2.01	mg/kg	09.11.18 02.30		1000
Ethylbenzene	100-41-4	**116**	2.01	mg/kg	09.11.18 02.30		1000
m,p-Xylenes	179601-23-1	**98.4**	4.02	mg/kg	09.11.18 02.30		1000
o-Xylene	95-47-6	**36.6**	2.01	mg/kg	09.11.18 02.30		1000
Total Xylenes	1330-20-7	**135**	2.01	mg/kg	09.11.18 02.30		1000
Total BTEX		**436**	2.01	mg/kg	09.11.18 02.30		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	09.11.18 02.30	
4-Bromofluorobenzene	460-00-4	264	%	70-130	09.11.18 02.30	**

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-1 (2-2.5')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-003 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.06.18 19.19	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.11.18 12.00 Basis: Wet Weight

Seq Number: 3062894

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**73.2**	15.0	mg/kg	09.11.18 21.10		1
Diesel Range Organics	C10C28DRO	**149**	15.0	mg/kg	09.11.18 21.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**42.4**	15.0	mg/kg	09.11.18 21.10		1
Total TPH	PHC635	**265**	15.0	mg/kg	09.11.18 21.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.11.18 21.10	
o-Terphenyl	84-15-1	99	%	70-135	09.11.18 21.10	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-1 (2-2.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-003	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.12.18 15.00	Basis:	Wet Weight
Seq Number:	3063031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00214**	0.00200	mg/kg	09.13.18 09.10		1
Toluene	108-88-3	**0.133**	0.00200	mg/kg	09.13.18 09.10		1
Ethylbenzene	100-41-4	**0.332**	0.00200	mg/kg	09.13.18 09.10		1
m,p-Xylenes	179601-23-1	**0.376**	0.00401	mg/kg	09.13.18 09.10		1
o-Xylene	95-47-6	**0.197**	0.00200	mg/kg	09.13.18 09.10		1
Total Xylenes	1330-20-7	**0.573**	0.00200	mg/kg	09.13.18 09.10		1
Total BTEX		**1.04**	0.00200	mg/kg	09.13.18 09.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	09.13.18 09.10	
4-Bromofluorobenzene	460-00-4	153	%	70-130	09.13.18 09.10	**

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-1 (3-3.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-004	Date Collected:	09.05.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	09.06.18 15.00	Basis:	Wet Weight
Seq Number:	3062375				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.06.18 19.24	U	1

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-1 (4-4.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-005	Date Collected:	09.05.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	09.06.18 15.00	Basis:	Wet Weight
Seq Number:	3062375				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.06.18 19.29	U	1

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-2 (0-1')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-006 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.7**	4.97	mg/kg	09.06.18 19.50		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**1910**	74.8	mg/kg	09.07.18 00.12		5
Diesel Range Organics	C10C28DRO	**5240**	74.8	mg/kg	09.07.18 00.12		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<74.8	74.8	mg/kg	09.07.18 00.12	U	5
Total TPH	PHC635	**7150**	74.8	mg/kg	09.07.18 00.12		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	09.07.18 00.12	
o-Terphenyl	84-15-1	85	%	70-135	09.07.18 00.12	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-2 (0-1')**	Matrix:	Soil
Lab Sample Id:	598150-006	Date Collected:	09.05.18 00.00
Date Received:	09.06.18 09.43		
Analytical Method:	BTEX by EPA 8021B	Prep Method:	SW5030B
Tech:	ALJ	% Moisture:	
Analyst:	ALJ	Date Prep:	09.10.18 16.00
Basis:	Wet Weight		
Seq Number:	3062716		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**2.57**	0.498	mg/kg	09.11.18 02.50		250
Toluene	108-88-3	**59.2**	0.498	mg/kg	09.11.18 02.50		250
Ethylbenzene	100-41-4	**76.3**	0.498	mg/kg	09.11.18 02.50		250
m,p-Xylenes	179601-23-1	**70.3**	0.996	mg/kg	09.11.18 02.50		250
o-Xylene	95-47-6	**32.3**	0.498	mg/kg	09.11.18 02.50		250
Total Xylenes	1330-20-7	**103**	0.498	mg/kg	09.11.18 02.50		250
Total BTEX		**241**	0.498	mg/kg	09.11.18 02.50		250

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	657	%	70-130	09.11.18 02.50	**
1,4-Difluorobenzene	540-36-3	90	%	70-130	09.11.18 02.50	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-2 (1-1.5')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-007 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.06.18 19.56	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**1780**	74.9	mg/kg	09.07.18 00.32		5
Diesel Range Organics	C10C28DRO	**3240**	74.9	mg/kg	09.07.18 00.32		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<74.9	74.9	mg/kg	09.07.18 00.32	U	5
Total TPH	PHC635	**5020**	74.9	mg/kg	09.07.18 00.32		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	09.07.18 00.32	
o-Terphenyl	84-15-1	126	%	70-135	09.07.18 00.32	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-2 (1-1.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-007	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.10.18 16.00	Basis:	Wet Weight
Seq Number:	3062716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**1.95**	0.499	mg/kg	09.11.18 03.10		250
Toluene	108-88-3	**56.6**	0.499	mg/kg	09.11.18 03.10		250
Ethylbenzene	100-41-4	**80.5**	0.499	mg/kg	09.11.18 03.10		250
m,p-Xylenes	179601-23-1	**73.4**	0.998	mg/kg	09.11.18 03.10		250
o-Xylene	95-47-6	**41.0**	0.499	mg/kg	09.11.18 03.10		250
Total Xylenes	1330-20-7	**114**	0.499	mg/kg	09.11.18 03.10		250
Total BTEX		**253**	0.499	mg/kg	09.11.18 03.10		250

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	780	%	70-130	09.11.18 03.10	**
1,4-Difluorobenzene	540-36-3	125	%	70-130	09.11.18 03.10	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-2 (2-2.5')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-008 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	09.06.18 20.12	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.11.18 12.00 Basis: Wet Weight

Seq Number: 3062894

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.11.18 16.30	U	1
Diesel Range Organics	C10C28DRO	**157**	15.0	mg/kg	09.11.18 16.30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**16.9**	15.0	mg/kg	09.11.18 16.30		1
Total TPH	PHC635	**174**	15.0	mg/kg	09.11.18 16.30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.11.18 16.30	
o-Terphenyl	84-15-1	98	%	70-135	09.11.18 16.30	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-2 (2-2.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-008	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.12.18 15.00	Basis:	Wet Weight
Seq Number:	3063031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.13.18 08.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.13.18 08.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.13.18 08.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.13.18 08.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.13.18 08.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.13.18 08.49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.13.18 08.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.13.18 08.49	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.13.18 08.49	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-2 (3-3.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-009	Date Collected:	09.05.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	09.06.18 15.00	Basis:	Wet Weight
Seq Number:	3062375				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	09.06.18 20.17	U	1

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-2 (4-4.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-010	Date Collected:	09.05.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	09.06.18 15.00	Basis:	Wet Weight
Seq Number:	3062375				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.06.18 20.22	U	1

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-3 (0-1')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-011 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.06.18 20.27	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**2270**	75.0	mg/kg	09.07.18 00.51		5
Diesel Range Organics	C10C28DRO	**5700**	75.0	mg/kg	09.07.18 00.51		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<75.0	75.0	mg/kg	09.07.18 00.51	U	5
Total TPH	PHC635	**7970**	75.0	mg/kg	09.07.18 00.51		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	09.07.18 00.51	
o-Terphenyl	84-15-1	127	%	70-135	09.07.18 00.51	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-3 (0-1')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-011	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.09.18 10.00	Basis:	Wet Weight
Seq Number:	3062575				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.222**	0.199	mg/kg	09.10.18 01.53		100
Toluene	108-88-3	**1.33**	0.199	mg/kg	09.10.18 01.53		100
Ethylbenzene	100-41-4	**4.72**	0.199	mg/kg	09.10.18 01.53		100
m,p-Xylenes	179601-23-1	**38.0**	0.398	mg/kg	09.10.18 01.53		100
o-Xylene	95-47-6	**31.7**	0.199	mg/kg	09.10.18 01.53		100
Total Xylenes	1330-20-7	**69.7**	0.199	mg/kg	09.10.18 01.53		100
Total BTEX		**76.0**	0.199	mg/kg	09.10.18 01.53		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	517	%	70-130	09.10.18 01.53	**
1,4-Difluorobenzene	540-36-3	125	%	70-130	09.10.18 01.53	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **AH-3 (1-1.5')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-012 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 15.00 Basis: Wet Weight

Seq Number: 3062375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.1**	4.96	mg/kg	09.06.18 20.33		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	**123**	14.9	mg/kg	09.07.18 01.11		1
Diesel Range Organics	C10C28DRO	**291**	14.9	mg/kg	09.07.18 01.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.07.18 01.11	U	1
Total TPH	PHC635	**414**	14.9	mg/kg	09.07.18 01.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.07.18 01.11	
o-Terphenyl	84-15-1	94	%	70-135	09.07.18 01.11	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-3 (1-1.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-012	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.07.18 17.00	Basis:	Wet Weight
Seq Number:	3062552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	09.08.18 02.13	U	50
Toluene	108-88-3	**0.118**	0.100	mg/kg	09.08.18 02.13		50
Ethylbenzene	100-41-4	**0.177**	0.100	mg/kg	09.08.18 02.13		50
m,p-Xylenes	179601-23-1	**1.82**	0.201	mg/kg	09.08.18 02.13		50
o-Xylene	95-47-6	**1.04**	0.100	mg/kg	09.08.18 02.13		50
Total Xylenes	1330-20-7	**2.86**	0.100	mg/kg	09.08.18 02.13		50
Total BTEX		**3.16**	0.100	mg/kg	09.08.18 02.13		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.08.18 02.13	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.08.18 02.13	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-3 (2-2.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-013	Date Collected:	09.05.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	09.06.18 15.00	Basis:	Wet Weight
Seq Number:	3062375				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	09.06.18 20.38	U	1

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-3 (3-3.5')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-014	Date Collected:	09.05.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	09.06.18 15.00	Basis:	Wet Weight
Seq Number:	3062375				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.06.18 20.43	U	1

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**AH-3 (4-4.45')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-015	Date Collected:	09.05.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	09.06.18 17.00	Basis:	Wet Weight
Seq Number:	3062381				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	09.06.18 21.31	U	1

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COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **North (0-1')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-016 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 17.00 Basis: Wet Weight

Seq Number: 3062381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**223**	4.95	mg/kg	09.06.18 21.36		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	09.07.18 01.31	U	1
Diesel Range Organics	C10C28DRO	**17.9**	14.9	mg/kg	09.07.18 01.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.07.18 01.31	U	1
Total TPH	PHC635	**17.9**	14.9	mg/kg	09.07.18 01.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.07.18 01.31	
o-Terphenyl	84-15-1	87	%	70-135	09.07.18 01.31	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**North (0-1')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-016	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.07.18 17.00	Basis:	Wet Weight
Seq Number:	3062552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.08.18 01.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.08.18 01.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.08.18 01.52	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.08.18 01.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.08.18 01.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.08.18 01.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.08.18 01.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	09.08.18 01.52	
1,4-Difluorobenzene	540-36-3	118	%	70-130	09.08.18 01.52	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **South (0-1')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-017 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 17.00 Basis: Wet Weight

Seq Number: 3062381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1190**	24.8	mg/kg	09.06.18 21.42		5

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.07.18 01.51	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	09.07.18 01.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.07.18 01.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.07.18 01.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.07.18 01.51	
o-Terphenyl	84-15-1	90	%	70-135	09.07.18 01.51	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**South (0-1')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-017	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.09.18 10.00	Basis:	Wet Weight
Seq Number:	3062575				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.10.18 00.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.10.18 00.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.10.18 00.32	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.10.18 00.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.10.18 00.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.10.18 00.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.10.18 00.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.10.18 00.32	
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.10.18 00.32	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **East (0-1')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-018 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 17.00 Basis: Wet Weight

Seq Number: 3062381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**152**	4.95	mg/kg	09.06.18 21.47		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.07.18 02.11	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	09.07.18 02.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.07.18 02.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.07.18 02.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.07.18 02.11	
o-Terphenyl	84-15-1	89	%	70-135	09.07.18 02.11	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**East (0-1')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-018	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.07.18 17.00	Basis:	Wet Weight
Seq Number:	3062552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.08.18 04.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.08.18 04.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.08.18 04.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.08.18 04.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.08.18 04.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.08.18 04.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.08.18 04.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	121	%	70-130	09.08.18 04.00	
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.08.18 04.00	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id: **West (0-1')** Matrix: Soil Date Received:09.06.18 09.43

Lab Sample Id: 598150-019 Date Collected: 09.05.18 00.00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SCM % Moisture:

Analyst: SCM Date Prep: 09.06.18 17.00 Basis: Wet Weight

Seq Number: 3062381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**83.8**	4.95	mg/kg	09.06.18 22.03		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 09.06.18 11.00 Basis: Wet Weight

Seq Number: 3062455

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	09.07.18 02.31	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	09.07.18 02.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.07.18 02.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.07.18 02.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.07.18 02.31	
o-Terphenyl	84-15-1	87	%	70-135	09.07.18 02.31	

Certificate of Analytical Results 598150

COG Operating LLC, Artesia, NM

ETZ State Tank Battery (7-24-18)

Sample Id:	**West (0-1')**	Matrix:	Soil	Date Received:	09.06.18 09.43
Lab Sample Id:	598150-019	Date Collected:	09.05.18 00.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.07.18 17.00	Basis:	Wet Weight
Seq Number:	3062552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.08.18 04.21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.08.18 04.21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.08.18 04.21	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.08.18 04.21	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.08.18 04.21	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.08.18 04.21	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.08.18 04.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	70-130	09.08.18 04.21	
1,4-Difluorobenzene	540-36-3	116	%	70-130	09.08.18 04.21	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 598150

COG Operating LLC

ETZ State Tank Battery (7-24-18)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3062375 Matrix: Solid Date Prep: 09.06.18
MB Sample Id: 7661804-1-BLK LCS Sample Id: 7661804-1-BKS LCSD Sample Id: 7661804-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	265	106	262	105	90-110	1	20	mg/kg	09.06.18 18:10	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3062381 Matrix: Solid Date Prep: 09.06.18
MB Sample Id: 7661805-1-BLK LCS Sample Id: 7661805-1-BKS LCSD Sample Id: 7661805-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	268	107	273	109	90-110	2	20	mg/kg	09.06.18 21:04	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3062375 Matrix: Soil Date Prep: 09.06.18
Parent Sample Id: 598005-001 MS Sample Id: 598005-001 S MSD Sample Id: 598005-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	254	102	256	102	90-110	1	20	mg/kg	09.06.18 18:26	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3062375 Matrix: Soil Date Prep: 09.06.18
Parent Sample Id: 598005-002 MS Sample Id: 598005-002 S MSD Sample Id: 598005-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.855	249	242	97	246	99	90-110	2	20	mg/kg	09.06.18 19:40	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3062381 Matrix: Soil Date Prep: 09.06.18
Parent Sample Id: 598005-003 MS Sample Id: 598005-003 S MSD Sample Id: 598005-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.853	249	261	105	260	104	90-110	0	20	mg/kg	09.06.18 21:20	

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

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

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

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

QC Summary 598150

COG Operating LLC

ETZ State Tank Battery (7-24-18)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3062381 Matrix: Soil Date Prep: 09.06.18
Parent Sample Id: 598005-005 MS Sample Id: 598005-005 S MSD Sample Id: 598005-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.852	248	246	99	252	102	90-110	2	20	mg/kg	09.06.18 22:34	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3062455 Matrix: Solid Date Prep: 09.06.18
MB Sample Id: 7661844-1-BLK LCS Sample Id: 7661844-1-BKS LCSD Sample Id: 7661844-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<8.00	1000	913	91	887	89	70-135	3	20	mg/kg	09.06.18 12:59	
Diesel Range Organics	<8.13	1000	928	93	884	88	70-135	5	20	mg/kg	09.06.18 12:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		128		126		70-135	%	09.06.18 12:59
o-Terphenyl	96		110		99		70-135	%	09.06.18 12:59

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3062894 Matrix: Solid Date Prep: 09.11.18
MB Sample Id: 7662103-1-BLK LCS Sample Id: 7662103-1-BKS LCSD Sample Id: 7662103-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<8.00	1000	1040	104	1050	105	70-135	1	20	mg/kg	09.11.18 13:05	
Diesel Range Organics	<8.13	1000	1070	107	1140	114	70-135	6	20	mg/kg	09.11.18 13:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		123		126		70-135	%	09.11.18 13:05
o-Terphenyl	97		114		114		70-135	%	09.11.18 13:05

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3062455 Matrix: Soil Date Prep: 09.06.18
Parent Sample Id: 598151-001 MS Sample Id: 598151-001 S MSD Sample Id: 598151-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<7.99	998	815	82	828	83	70-135	2	20	mg/kg	09.06.18 13:59	
Diesel Range Organics	241	998	1080	84	1090	85	70-135	1	20	mg/kg	09.06.18 13:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		125		70-135	%	09.06.18 13:59
o-Terphenyl	95		95		70-135	%	09.06.18 13:59

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

QC Summary 598150

COG Operating LLC

ETZ State Tank Battery (7-24-18)

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3062894 — Matrix: Soil — Date Prep: 09.11.18
Parent Sample Id: 598400-001 — MS Sample Id: 598400-001 S — MSD Sample Id: 598400-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	9.10	1040	993	95	1010	96	70-135	2	20	mg/kg	09.11.18 14:01	
Diesel Range Organics	8.72	1040	1060	101	1080	103	70-135	2	20	mg/kg	09.11.18 14:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		113		70-135	%	09.11.18 14:01
o-Terphenyl	96		96		70-135	%	09.11.18 14:01

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3062552 — Matrix: Solid — Date Prep: 09.07.18
MB Sample Id: 7661886-1-BLK — LCS Sample Id: 7661886-1-BKS — LCSD Sample Id: 7661886-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.106	106	0.125	125	70-130	16	35	mg/kg	09.07.18 21:15	
Toluene	<0.00200	0.100	0.0881	88	0.0889	89	70-130	1	35	mg/kg	09.07.18 21:15	
Ethylbenzene	<0.00200	0.100	0.102	102	0.101	101	70-130	1	35	mg/kg	09.07.18 21:15	
m,p-Xylenes	<0.00102	0.200	0.201	101	0.198	99	70-130	2	35	mg/kg	09.07.18 21:15	
o-Xylene	<0.00200	0.100	0.0954	95	0.0953	95	70-130	0	35	mg/kg	09.07.18 21:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	122		99		91		70-130	%	09.07.18 21:15
4-Bromofluorobenzene	86		93		90		70-130	%	09.07.18 21:15

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3062575 — Matrix: Solid — Date Prep: 09.09.18
MB Sample Id: 7661928-1-BLK — LCS Sample Id: 7661928-1-BKS — LCSD Sample Id: 7661928-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.101	101	0.0903	90	70-130	11	35	mg/kg	09.10.18 11:04	
Toluene	<0.00200	0.0998	0.0984	99	0.0908	91	70-130	8	35	mg/kg	09.10.18 11:04	
Ethylbenzene	<0.00200	0.0998	0.102	102	0.0937	94	70-130	8	35	mg/kg	09.10.18 11:04	
m,p-Xylenes	<0.00399	0.200	0.203	102	0.187	93	70-130	8	35	mg/kg	09.10.18 11:04	
o-Xylene	<0.00200	0.0998	0.102	102	0.0924	92	70-130	10	35	mg/kg	09.10.18 11:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		94		88		70-130	%	09.10.18 11:04
4-Bromofluorobenzene	94		98		92		70-130	%	09.10.18 11:04

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

QC Summary 598150

COG Operating LLC

ETZ State Tank Battery (7-24-18)

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3062716 — Matrix: Solid — Date Prep: 09.10.18
MB Sample Id: 7662017-1-BLK — LCS Sample Id: 7662017-1-BKS — LCSD Sample Id: 7662017-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0947	95	0.0938	94	70-130	1	35	mg/kg	09.10.18 18:25	
Toluene	<0.00200	0.0998	0.0957	96	0.0978	98	70-130	2	35	mg/kg	09.10.18 18:25	
Ethylbenzene	<0.00200	0.0998	0.100	100	0.106	106	70-130	6	35	mg/kg	09.10.18 18:25	
m,p-Xylenes	<0.00399	0.200	0.198	99	0.212	105	70-130	7	35	mg/kg	09.10.18 18:25	
o-Xylene	<0.00200	0.0998	0.0953	95	0.103	103	70-130	8	35	mg/kg	09.10.18 18:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		91		93		70-130	%	09.10.18 18:25
4-Bromofluorobenzene	82		91		100		70-130	%	09.10.18 18:25

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3063031 — Matrix: Solid — Date Prep: 09.12.18
MB Sample Id: 7662193-1-BLK — LCS Sample Id: 7662193-1-BKS — LCSD Sample Id: 7662193-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0963	96	0.0952	95	70-130	1	35	mg/kg	09.12.18 20:08	
Toluene	<0.00200	0.100	0.0886	89	0.0873	87	70-130	1	35	mg/kg	09.12.18 20:08	
Ethylbenzene	<0.00200	0.100	0.0941	94	0.0947	95	70-130	1	35	mg/kg	09.12.18 20:08	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.189	94	70-130	1	35	mg/kg	09.12.18 20:08	
o-Xylene	<0.00200	0.100	0.0934	93	0.0940	94	70-130	1	35	mg/kg	09.12.18 20:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		106		102		70-130	%	09.12.18 20:08
4-Bromofluorobenzene	80		99		101		70-130	%	09.12.18 20:08

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3062552 — Matrix: Soil — Date Prep: 09.07.18
Parent Sample Id: 597742-001 — MS Sample Id: 597742-001 S — MSD Sample Id: 597742-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0809	81	0.0717	71	70-130	12	35	mg/kg	09.07.18 21:58	
Toluene	<0.000455	0.0998	0.0623	62	0.0488	48	70-130	24	35	mg/kg	09.07.18 21:58	X
Ethylbenzene	<0.00200	0.0998	0.0702	70	0.0479	47	70-130	38	35	mg/kg	09.07.18 21:58	XF
m,p-Xylenes	<0.00101	0.200	0.140	70	0.102	51	70-130	31	35	mg/kg	09.07.18 21:58	X
o-Xylene	<0.00200	0.0998	0.0693	69	0.0535	53	70-130	26	35	mg/kg	09.07.18 21:58	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		80		70-130	%	09.07.18 21:58
4-Bromofluorobenzene	76		75		70-130	%	09.07.18 21:58

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

QC Summary 598150

COG Operating LLC

ETZ State Tank Battery (7-24-18)

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3062575 — Matrix: Soil — Date Prep: 09.09.18
Parent Sample Id: 598366-001 — MS Sample Id: 598366-001 S — MSD Sample Id: 598366-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0698	70	0.0913	91	70-130	27	35	mg/kg	09.10.18 11:04	
Toluene	<0.00199	0.0996	0.0622	62	0.0886	89	70-130	35	35	mg/kg	09.10.18 11:04	X
Ethylbenzene	<0.00199	0.0996	0.0556	56	0.0896	90	70-130	47	35	mg/kg	09.10.18 11:04	XF
m,p-Xylenes	<0.00398	0.199	0.109	55	0.178	89	70-130	48	35	mg/kg	09.10.18 11:04	XF
o-Xylene	<0.00199	0.0996	0.0581	58	0.0875	88	70-130	40	35	mg/kg	09.10.18 11:04	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	09.10.18 11:04
4-Bromofluorobenzene	94		94		70-130	%	09.10.18 11:04

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3062716 — Matrix: Soil — Date Prep: 09.10.18
Parent Sample Id: 598482-001 — MS Sample Id: 598482-001 S — MSD Sample Id: 598482-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00257	0.129	0.106	82	0.104	81	70-130	2	35	mg/kg	09.10.18 19:05	
Toluene	<0.00257	0.129	0.101	78	0.0941	74	70-130	7	35	mg/kg	09.10.18 19:05	
Ethylbenzene	<0.00257	0.129	0.0961	74	0.0891	70	70-130	8	35	mg/kg	09.10.18 19:05	
m,p-Xylenes	<0.00514	0.257	0.188	73	0.174	68	70-130	8	35	mg/kg	09.10.18 19:05	X
o-Xylene	<0.00257	0.129	0.0924	72	0.0862	67	70-130	7	35	mg/kg	09.10.18 19:05	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		94		70-130	%	09.10.18 19:05
4-Bromofluorobenzene	93		97		70-130	%	09.10.18 19:05

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3063031 — Matrix: Soil — Date Prep: 09.12.18
Parent Sample Id: 598787-001 — MS Sample Id: 598787-001 S — MSD Sample Id: 598787-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0892	90	0.0815	82	70-130	9	35	mg/kg	09.12.18 20:51	
Toluene	<0.00199	0.0996	0.0769	77	0.0703	70	70-130	9	35	mg/kg	09.12.18 20:51	
Ethylbenzene	<0.00199	0.0996	0.0735	74	0.0699	70	70-130	5	35	mg/kg	09.12.18 20:51	
m,p-Xylenes	<0.00398	0.199	0.141	71	0.133	67	70-130	6	35	mg/kg	09.12.18 20:51	X
o-Xylene	<0.00199	0.0996	0.0726	73	0.0700	70	70-130	4	35	mg/kg	09.12.18 20:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		100		70-130	%	09.12.18 20:51
4-Bromofluorobenzene	106		86		70-130	%	09.12.18 20:51

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

Analysis Request of Chain of Custody Record

59850

CONCHO

One Concho
Center/600/Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: ETZ State Tank Battery (7-24-18)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:**
Invoice to: COG	
Receiving Laboratory: Xenco	**Sampler Signature:** Ike Tavarez

Comments:

Run Deeper samples if TPH exceeds 1000 mg/kg.

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B / BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	AH-1 (0-1')	9/5/2018			X				X		1		X		X												X							
	AH-1 (1-1.5')	9/5/2018			X				X		1		X		X												X							
	AH-1 (2-2.5')	9/5/2018			X				X		1																X							
	AH-1 (3-3.5')	9/5/2018			X				X		1																X							
	AH-1 (4-4.5')	9/5/2018			X				X		1																X							
	AH-2 (0-1')	9/5/2018			X				X		1		X		X												X							
	AH-2 (1-1.5')	9/5/2018			X				X		1		X		X												X							
	AH-2 (2-2.5')	9/5/2018			X				X		1																X							
	AH-2 (3-3.5')	9/5/2018			X				X		1																X							
	AH-2 (4-4.5)	9/5/2018			X				X		1																X							

Relinquished by:	Date: 9-6-18	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 9/6/18 Time: 0943

LAB USE ONLY

Sample Temperature

-2.1 | 0.0

RP

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Analysis Request of Chain of Custody Record

599150

CONCHO

One Concho Center/600/Illinois Avenue/Midland, Texas
Tel (432) 683-7443

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: ETZ State Tank Battery (7-24-18)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:**
Invoice to: COG	
Receiving Laboratory: Xenco	**Sampler Signature:** Ike Tavarez

Comments:

Run Deeper samples if TPH exceeds 1000 mg/kg.

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH-3 (0-1')	9/5/2018			X				X		1		X		X												X								
	AH-3 (1-1.5')	9/5/2018			X				X		1		X		X												X								
	AH-3 (2-2.5')	9/5/2018			X				X		1																X								
	AH-3 (3-3.5')	9/5/2018			X				X		1																X								
	AH-3 (4-4.5')	9/5/2018			X				X		1																X								
	North (0-1')	9/5/2018			X				X		1		X		X												X								
	South (0-1')	9/5/2018			X				X		1		X		X												X								
	East (0-1')	9/5/2018			X				X		1		X		X												X								
	West)-1')	9/5/2018			X				X		1		X		X												X								

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	9-6-18			9/6/18	0943
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

-2.1/6.0 RE

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 09/06/2018 09:43:00 AM

Work Order #: 598150

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-2.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 09/06/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 09/06/2018
Jessica Kramer

APPENDIX D
Regulatory Correspondence

From: Rebecca Haskell
To: Billings, Bradford, EMNRD
Cc: Mike Bratcher (Mike.Bratcher@state.nm.us); Mann, Ryan; Ike Tavarez; DeAnn Grant; Dakota Neel; Sheldon Hitchcock; Rebecca Haskell
Subject: (Resubmittal) COG Operating - ETZ State Tank Battery (7-24-18) (2RP- 4887) Work Plan
Date: Friday, January 4, 2019 9:42:47 AM
Attachments: image001.jpg
COG - ETZ State Tank Battery - Work Plan (7-24-18) 2RP 4887.pdf
External RE COG Operating - ETZ State Tank Battery (7-24-18) 2 RP 4887.msg

Mr. Billings,

Please find the attached Work Plan for the COG ETZ State Tank Battery (2RP-4887) Release which occurred on 7/24/18. The work plan was originally submitted to the NMOCD District 2 Office on November 7, 2018. COG is requesting that you review this work plan which has been approved by the State Land Office (please see the attached approval).

Thank You,

Becky Haskell
Senior HSE Coordinator
COG Operating LLC
600 W Illinois Avenue | Midland, TX 79701
Direct: 432-818-2372 | Main: 432.683.7443
Cell: 432-556-5130
rhaskell@concho.com

From: Ike Tavarez
Sent: Wednesday, November 07, 2018 12:24 PM
To: Pruett, Maria, EMNRD <Maria.Pruett@state.nm.us>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: mike.bratcher@state.nm.us; Rebecca Haskell <RHaskell@concho.com>; Dakota Neel <DNeel2@concho.com>; Sheldon Hitchcock <SLHitchcock@concho.com>; DeAnn Grant <agrant@concho.com>
Subject: COG Operating - ETZ State Tank Battery (7-24-18) 2 RP 4887

Maria and Ryan,

Here is the Work Plan for the COG-ETZ State Tank Battery located in Eddy County, New Mexico. Let me know if you have any questions or comments on the report, thanks

Ike Tavarez, PG
Senior HSE Supervisor
COG Operating LLC
600 W Illinois Avenue | Midland, TX 79701
Direct: 432-685-2573| Main: 432-683-7443
Cell: 432-701-8630
itavarez@concho.com

From: Mann, Ryan
To: "Ike Tavarez"; Pruett, Maria, EMNRD
Cc: Bratcher, Mike, EMNRD; Rebecca Haskell; Dakota Neel; Sheldon Hitchcock; DeAnn Grant
Subject: [EXT] RE: COG Operating - ETZ State Tank Battery (7-24-18) 2 RP 4887
Date: Monday, November 19, 2018 11:06:10 AM

NMSLO approves of the work plan as written with the following comments: confirmation samples and the floor and sidewall are necessary, no more than 50 ft apart. NMOCD may have additional comments.

Ryan Mann
Remediation Specialist
Field Operation Division
(575) 392-3697
(505) 699-1989
New Mexico State Land Office
2827 N. Dal Paso Suite 117
Hobbs, NM 88240

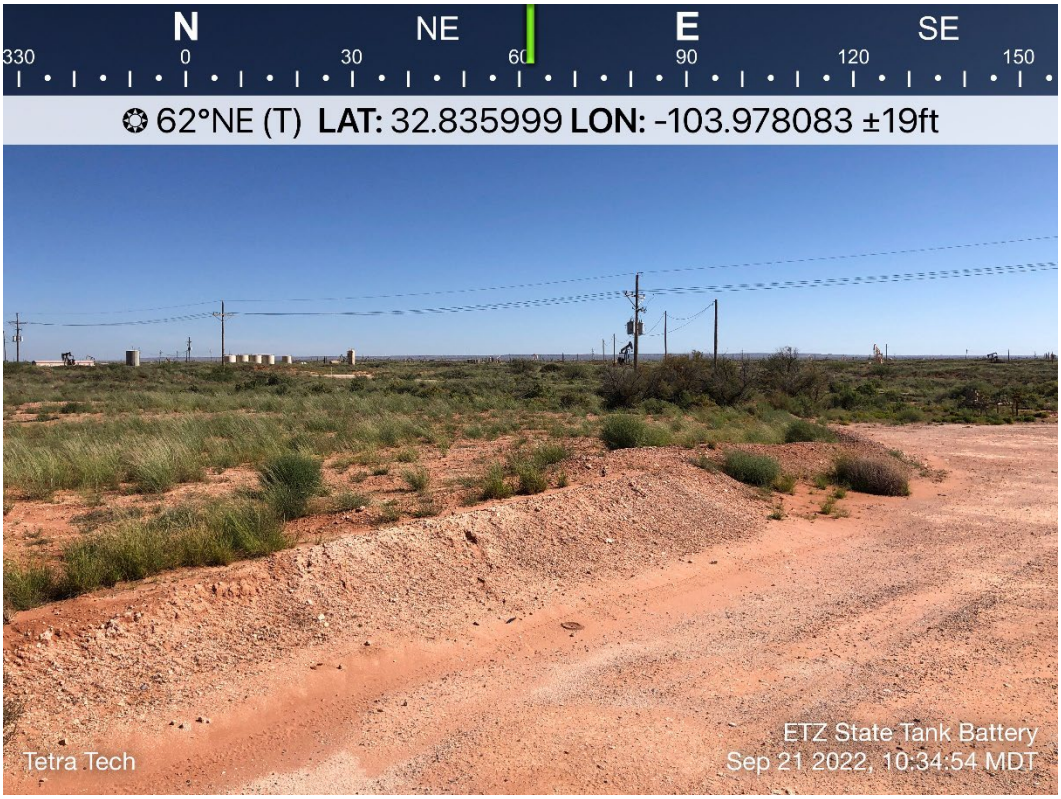
From: Ike Tavarez [mailto:itavarez@concho.com]
Sent: Wednesday, November 7, 2018 11:24 AM
To: Pruett, Maria, EMNRD <Maria.Pruett@state.nm.us>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: mike.bratcher@state.nm.us; Rebecca Haskell <RHaskell@concho.com>; Dakota Neel <DNeel2@concho.com>; Sheldon Hitchcock <SLHitchcock@concho.com>; DeAnn Grant <agrant@concho.com>
Subject: COG Operating - ETZ State Tank Battery (7-24-18) 2 RP 4887

Maria and Ryan,

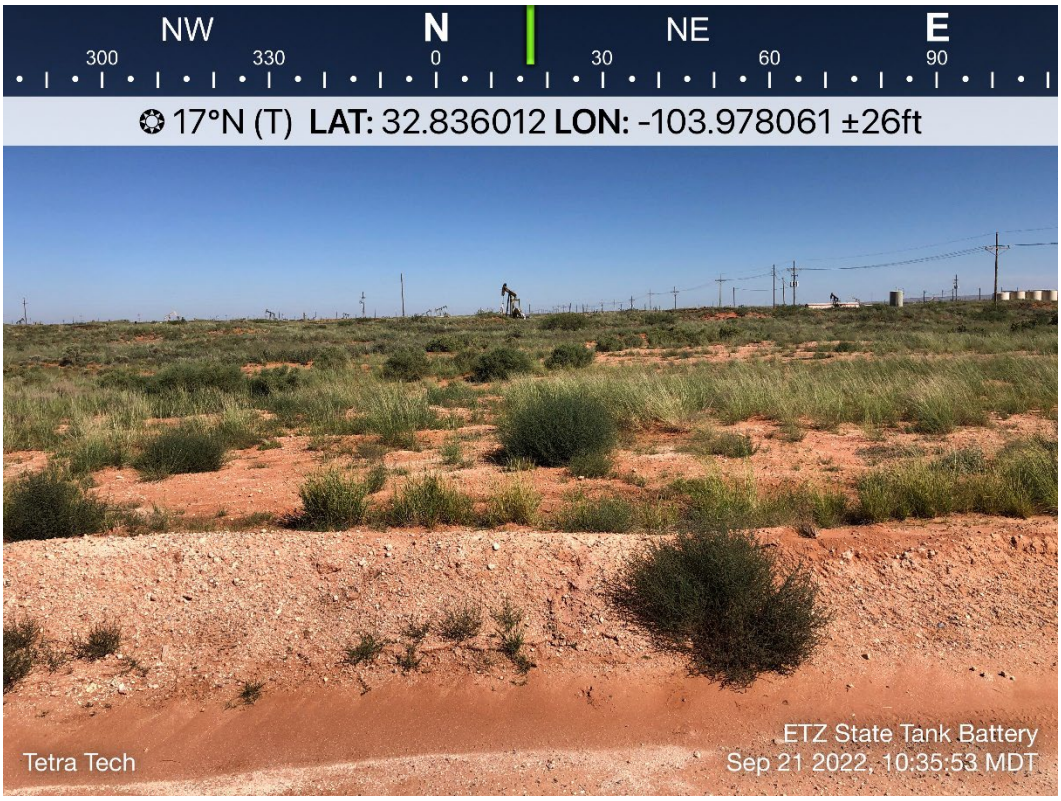
Here is the Work Plan for the COG-ETZ State Tank Battery located in Eddy County, New Mexico. Let me know if you have any questions or comments on the report, thanks

Ike Tavarez, PG
Senior HSE Supervisor
COG Operating LLC
600 W Illinois Avenue | Midland, TX 79701
Direct: 432-685-2573| Main: 432-683-7443
Cell: 432-701-8630
itavarez@concho.com

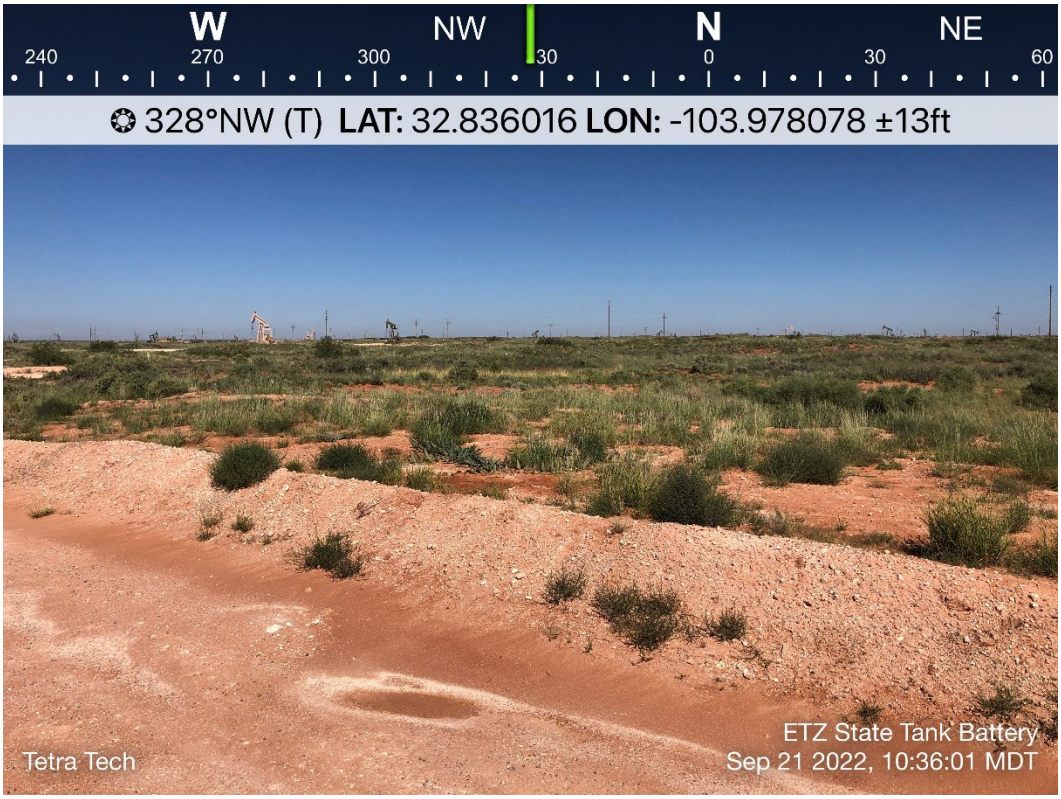
APPENDIX E
Photographic Documentation



TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View northeast from lease road of area where the battery has been reclaimed.	1
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022

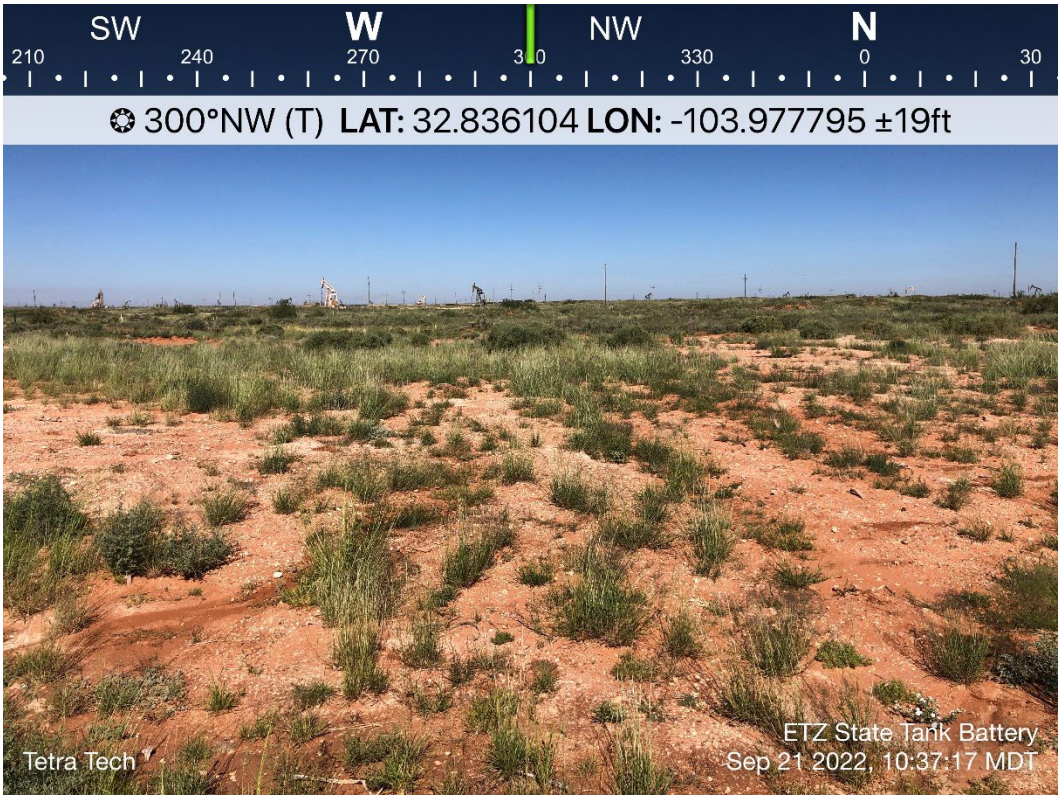


TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View north from lease road of area where the battery has been reclaimed.	2
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022

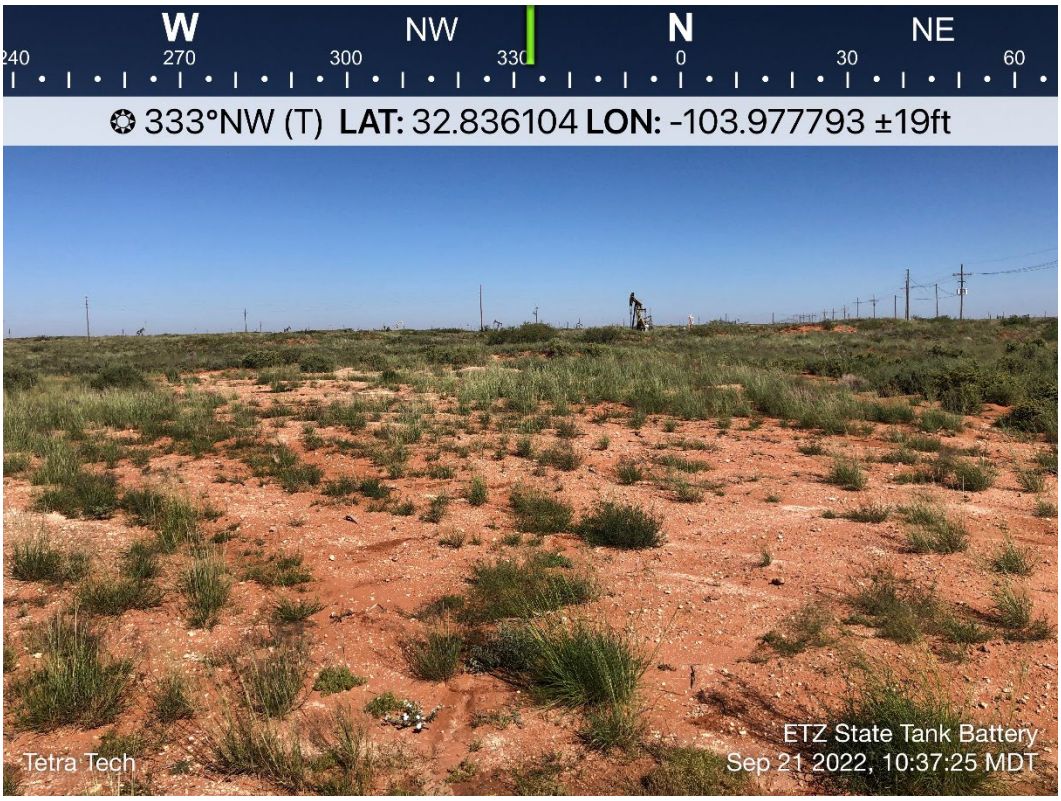


TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View northwest from lease road of area where the battery has been reclaimed.	3
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022

TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View west from atop the area that was previously the battery.	4
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022



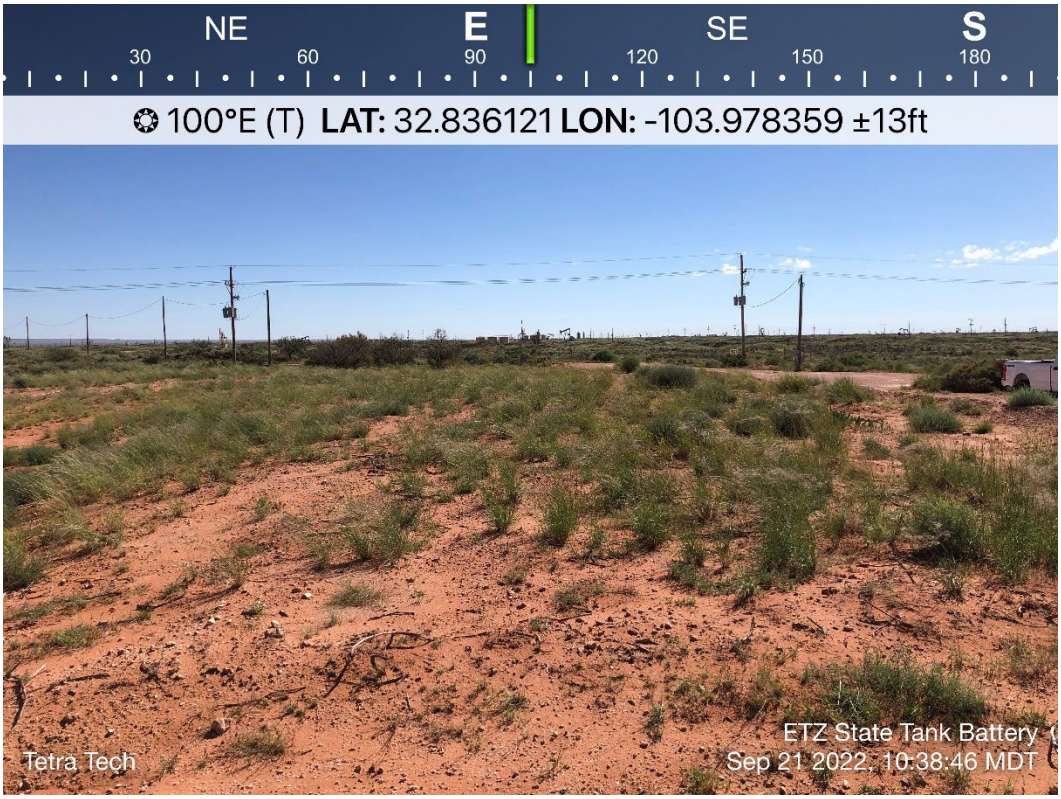
TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View northwest of the reclaimed battery and surrounding pad.	5
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022



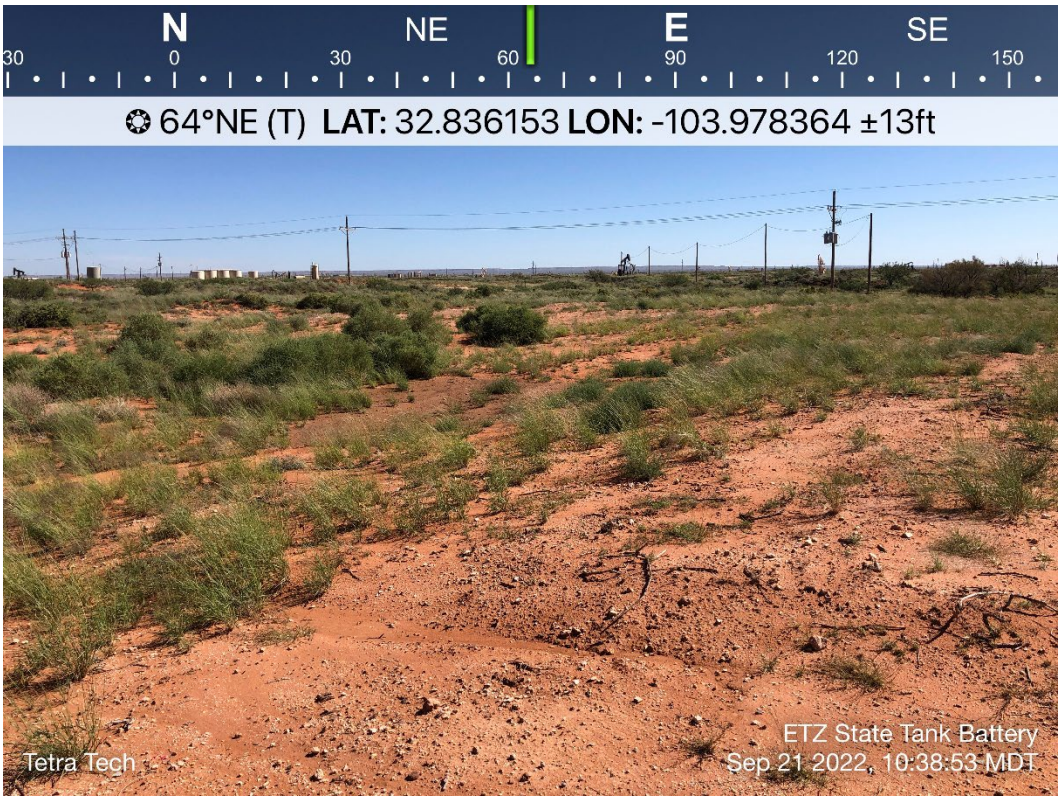
TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View northwest of the reclaimed battery and surrounding pad.	6
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022

TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View east from the lease road of the reclaimed battery and surrounding pad.	7
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022

TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View west from the lease road of the reclaimed battery and surrounding pad.	8
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View east of the reclaimed battery and surrounding pad.	9
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02849	DESCRIPTION	View east of the reclaimed battery and surrounding pad.	10
	SITE NAME	ConocoPhillips hCXO ETZ State Unit Battery Release	9/21/2022

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 157085

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 157085
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAB1821441378 ETZ STATE UNIT BATTERY, thank you. This closure is approved.	1/25/2023