



August 22, 2023

Robert Hamlet  
Oil Conservation Division, District 1  
1625 North French Drive  
Hobbs, New Mexico 8824

**Re: REVISED  
Work Plan Addendum  
ConocoPhillips  
Heritage Concho  
Way South State Com 1H Tank Battery  
Unit Letter A, Section 30, Township 26 South, Range 28 East  
Eddy County, New Mexico  
Incident ID# NRM2008650013**

Mr. Hamlet:

Tetra Tech, Inc. (Tetra Tech) was contracted by ConocoPhillips to evaluate a release that ensued from a site glass failure at a free water knockout (FWKO) at the tank battery. The release footprint is located in Public Land Survey System (PLSS) Unit Letter A, Section 30, Township 26 South, Range 28 East, in Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.018720°, -104.119516°, as shown on **Figures 1 and 2**.

## BACKGROUND

According to the State of New Mexico Oil Conservation Division (NMOCD) C-141 Initial Report (Appendix A), the release was discovered on December 25, 2019. The release was caused by a site glass failure on a free water knockout (FWKO). All of the fluids were contained inside the unlined facility firewall. Approximately four (4) barrels of crude oil and six (6) barrels of produced water were released. A vacuum truck was dispatched immediately to remove all freestanding fluids. COG recovered three (3) barrels of crude oil and 5 barrels of produced water. The New Mexico Oil Conservation Division (NMOCD) received the initial C-141 on January 9, 2020. The NMOCD Incident ID for this release is NRM2008650013.

## PREVIOUS DOCUMENT SUBMITTALS

An original Work Plan associated with the incident was submitted to NMOCD by COG via email and marked received on September 26, 2020. The WP was denied by NMOCD via email on March 8, 2021. An Addendum Work Plan was then submitted to NMOCD by COG via email. The Addendum Work Plan was rejected by NMOCD on April 18, 2023, for the following reasons:

- *The Remediation Plan Addendum is Denied. Please, make sure a C-141 page 5 "Remediation Plan" page is signed and filled out at time of submission.*
- *This release is within a 100-year floodplain and high karst area and will need to be remediated to the strictest closure criteria from Table 1 of the OCD Spill Rule. Samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. The temporary monitoring well installation will allow COG to verify that there is no groundwater impact. The boring should be drilled safely and*

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*purged. A groundwater sample should include general chemistry including major cations and anions.*

- Please keep the OCD up to date on the groundwater sample results. An additional meeting may be necessary in the future to discuss the results. The work will need to occur in 90 days after the work plan has been reviewed.*

## CURRENT DOCUMENT OBJECTIVES

This REVISED Work Plan Addendum is intended to document ConocoPhillips' compliance with individual requests made by NMOCD regarding this Site, including both Bradford Billings and Jocelyn Harimon, in various methods of correspondence. This document was drafted in response to their review of Addendum Work Plan (dated April 15, 2021), and, based on calls and the most recent rejection of said Addendum Work Plan to include a complete signed C-141 (including the page 5 Remediation Plan) as requested by NMOCD. The C-141 is included as **Appendix A**. Associated regulatory correspondence is found in **Appendix B**. Shallow groundwater is present beneath the Site, as demonstrated below. The activities proposed in this REVISED Work Plan Addendum require considerable coordination with several regulatory entities, including the Environmental Compliance Office (ECO) Surface Resources Division of the New Mexico State Land Office (NMSLO); the Oil, Gas and Minerals Division of NMSLO (for MW Easement Application, Right of Entry Permit, and soil borings); and the New Mexico Office of the State Engineer (for WD-07 and WD-08 permits).

## LAND OWNERSHIP

The Site is located on land managed by the New Mexico State Land Office (SLO). An archaeological survey within the surrounding pasture area was conducted by a licensed firm on April 17, 2023 in accordance with the Cultural Properties Protection (CPP) Rule. The report was submitted to the SLO, and the SLO cleared the Site for right of entry and soil borings following a review of the survey. Associated correspondence regarding the archaeological survey is found in **Appendix C**.

## SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, wetlands, incorporated municipal boundaries, or subsurface mines are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). However, there are two OSE stream bodies within 300 feet of the lateral extents of the release and the Site is located in a FEMA Zone A floodplain. The Site is also in an area of high karst potential.

Previous Site characterization information can be found in the initial Work Plan and Addendum Work Plan. The previous Work Plan and Addendum provided groundwater data. Groundwater is encountered at shallow depths in this area, less than 50 feet bgs. Boring BH-1 (2) summarized in the Addendum Work Plan (#1), indicated groundwater as encountered at a depth of 20 feet. The site characterization data is included in **Appendix D**.

## 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.

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Based on the site characterization (high karst and shallow groundwater) and in accordance with Table I of 19.15.29.12 NMAC, the current RRALs for the Site are as follows:

Constituent	RRAL
Chloride	600 mg/kg
TPH (GRO+DRO+ORO)	100 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

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 (GRO+DRO+ORO)	100 mg/kg

Recent correspondence and additional sampling events may necessitate discussion regarding the current action levels for this incident. Heavy rain fell over southeastern New Mexico during 2013 and 2014, especially in the Loving and Malaga areas. Stream flow occurs in the major drainage (Owl Draw) during times of heavy rain. Extreme variability in the rainfall created flash flooding which affected significant portions of the drainage areas surrounding the Site. Several adjacent batteries and lease pads were damaged by the flooding events, as evidenced in historical imagery.

As described below, previous background soil borings associated with this Site indicated chloride concentrations, both in shallow and deeper soils, which exceeded the remediation and reclamation requirements listed above. It is conceivable that impact from damaged facilities upstream may have contributed to these chloride concentrations. After the additional data collection proposed in the vicinity of the Site, the current site characterization will be evaluated. After review of the collected data, ConocoPhillips will coordinate with NMOCD to determine whether revised action levels are warranted at the Site and will discuss the means to establish and determine those levels in subsequent reporting.

## INITIAL SITE ASSESSMENT ACTIVITIES AND RESULTS

The release area footprint occurred around the heater treater, horizontal FWKO's and multiple steel surface lines. The reported impacted area measured approximately 25' x 60' inside the facility walls. COG initially assessed the impacts at the Site with a Geoprobe (direct push) drilling rig on April 7, 2020 (BH-1). Assessment activities and a description of the site are documented in the initial rejected COG Work Plan (dated September 23, 2020). The rejected Work Plan also proposed additional evaluation within the facility firewalls to determine access; background trenches to evaluate chloride; and a follow up Work Plan or Deferral.

Results from the April 2020 soil sampling event are summarized in **Table 1**. Analytical results associated with boring location BH-1 exceeded the proposed Site RRALs for chloride in soils. All other analytical results from the April 2020 sampling event were below Site RRALs for TPH and BTEX. A copy of the laboratory analytical report and chain-of-custody documentation are included in **Appendix E**. Vertical delineation was not achieved during the sampling event due to auger refusal at 7' bgs.

An Addendum Work Plan (dated April 15, 2021) was drafted by COG and submitted to the NMOCD. In the Addendum Work Plan, COG described how an additional access point inside the firewall was located east of the production equipment, and an air rotary drilling rig was used to further delineate impacts in the release footprint (Bore Hole-1) on December 14, 2020. The boring was terminated at 20' bgs, vertical delineation was not achieved, and the plan reported encountering shallow groundwater during drilling. The Work Plan addendum was also rejected by NMOCD. The rejected Work Plan Addendum also proposed background

trenches to evaluate chloride; permitting, installation, and sampling of monitoring well(s); and a follow up Work Plan or Abatement Plan.

Results from the December 2020 soil sampling event are summarized in **Table 2**. Analytical results associated with Bore Hole-1 exceeded the proposed Site RRALs for chloride in soils. However, soil samples were analyzed for chloride only. The boring locations are indicated on **Figure 3**. A copy of the laboratory analytical report and chain-of-custody documentation are included in **Appendix E**.

## PREVIOUS BACKGROUND SAMPLING AND RESULTS

**Table 3** provides background soil data that was obtained in previous investigations in the general vicinity. Incident nJMW1309539213 occurred in March 2013, and the footprint was just west of the facility firewall. The incident footprint was assessed and two trenches outside of the footprint were completed as a portion of the assessment work. Background soil results from (background trench) BGT-1 and BGT-2, installed on January 8, 2013, indicated chloride concentrations exceeding the current RRAL of 600 mg/kg in subsurface soils. Results from the 2013 background sampling event are summarized in **Table 3**. Analytical results in the subsurface range from 2,160 mg/kg to as high as 3,650 mg/kg at 4' bgs.

## PROPOSED ADDITIONAL SITE ASSESSMENT ACTIVITIES (SOIL)

Based on discussions with NMOCD and previous rejections, three background soil borings will be installed in the release vicinity to an approximate depth of 20' bgs. The proposed background soil borings are labeled BG-2, BG-3 and BG-4. BG-1 is not used here to avoid confusion with a boring BG-1 that was drilled at the nearby Way South Tin Horn location. Soil samples will be collected on approximate one-foot intervals. Samples will be submitted to an accredited laboratory for analysis of TPH (Method 8015 modified), BTEX (Method 8021B), and chloride (EPA Method 300 or SM4500Cl-B). The proposed boring locations are indicated on **Figure 4**. These borings have been negotiated and coordinated with the Oil, Gas and Minerals Division of NMSLO for Right of Entry Permit.

## PROPOSED ADDITIONAL SITE ASSESSMENT ACTIVITIES (GROUNDWATER)

As directed by NMOCD, ConocoPhillips plans to install from one to three monitoring wells on site, to determine groundwater quality. MW-1 will be installed near the initial release as shown in Figure 1. These monitoring wells are still in the permitting process with NMSLO and NMOSE.

### Monitoring Well Installation and Sampling:

- Drilling and installing up to 3 permanent Monitoring Wells in the approximate locations shown in Figure 4, to determine groundwater quality and estimate gradient. Drilling will be completed by a New Mexico licensed water well driller.
- If sampling from MW-1 indicates no impact to groundwater from the release, no additional monitoring wells will be drilled. If sampling results indicate potential impact and/or potentially elevated background levels of chlorides, two additional monitoring wells will be installed.
- The actual depth of each new well will be determined in the field by a competent geologist during well installation. It is anticipated that the wells will be set at less than 50' feet bgs.
- Soil samples will be logged continuously to the base of the boring. The field geologist will log the soil characteristics along with any other pertinent information. The soil observations and well construction details will be recorded and presented on appropriate logs.



- For open boreholes, the annular space should be approximately 2" to allow the uniform deposition of well materials around the screen and riser, and to allow the passage of tremie pipes and well materials without unduly disturbing the borehole wall.
- Thus, for a two-inch well, the borehole diameter must be minimum of 6 inches.
  - Monitoring wells will be constructed of 2-inch diameter, flush-joint threaded PVC pipe. The casing should extend from the top of the screen to at least one foot above ground surface.
  - The top of the casing must be fitted with a removable cap, and the exposed casing must be protected by a locking steel well shroud. The shroud must be large enough in diameter to allow easy access for removal of the cap.
  - The screened interval length and elevation will be determined in the field.
    - A filter pack must be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand.
    - The well should be surged or bailed to settle the filter pack and additional sand added, if necessary, before the bentonite seal is emplaced.
    - A bentonite seal must be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch in size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal must be 3 feet in thickness and hydrated with clean water. Adequate time should be allowed for expansion of the bentonite seal before installation of the annular space seal.
    - The annular space above the bentonite seal must be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer.
    - After completion, the well will be allowed to stabilize for a minimum of 12 hours before development is initiated.
  - After installation and development, the monitoring wells will be purged and sampled for TPH, BTEX and chloride on a quarterly basis for a period of 2 quarters.
  - Groundwater will be sampled initially (one time) for Chlorides, BTEX , TPH, VOC 8260 full list, Cation/Anion (includes pH and TDS), Dissolved Iron and Dissolved Manganese . These parameters were selected based on NMOCD requirements for groundwater monitoring.
- Collecting additional soil samples during the drilling of the monitoring wells. The planned soil sampling intervals (Feet bgs) are as follows for each boring:

0-1
3-4
5-6
7-8
9-10
14-15
19-20

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August 22, 2023

ConocoPhillips

## REMEDATION WORK PLAN

Based on the analytical results from the proposed additional assessment activities, ConocoPhillips will work with NMOCD to establish appropriate reclamation levels and RRALs. Based on these requirements, ConocoPhillips will prepare and submit to OCD an additional amendment to this REVISED Work Plan Addendum to complete remediation and reclamation of soils.

Groundwater sampling will be evaluated to determine the necessity of any further action on groundwater. If required, ConocoPhillips will work with NMOCD to develop an abatement plan for groundwater, accordingly. Please note, a signed Page 5 is included at the request of the NMOCD, however, as no official remediation plan has been finalized, the Remediation Plan Checklist on Page 5 is filled out but incomplete.

## CONCLUSION

ConocoPhillips proposes to begin the additional assessment activities at the Site within 90 days of NMOCD work plan approval or 90 days of receiving both the NMSLO easement grant and NMOSE Permit to drill, whichever occurs later.

Upon completion of the proposed work, a summary report detailing the assessment activities and results will be submitted to NMOCD and NMSLO. If you have any questions concerning the proposed activities for the Site, please call me at (713) 806-8871.

Sincerely,

**Tetra Tech, Inc.**



Steve Jester  
Project Manager



Christian M. Llull, P.G.  
Program Manager

cc:  
Mr. Ike Tavarez, RMR – ConocoPhillips  
Mr. Mike Bratcher, NMOCD  
ECO, NMSLO

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ConocoPhillips

## LIST OF ATTACHMENTS

### Figures:

- Figure 1 – Site Location and Overview Map
- Figure 2 – Topographic Map
- Figure 3 – Release Extent and COG 2020 Site Assessment
- Figure 4 – Proposed TT 2023 Site Assessment

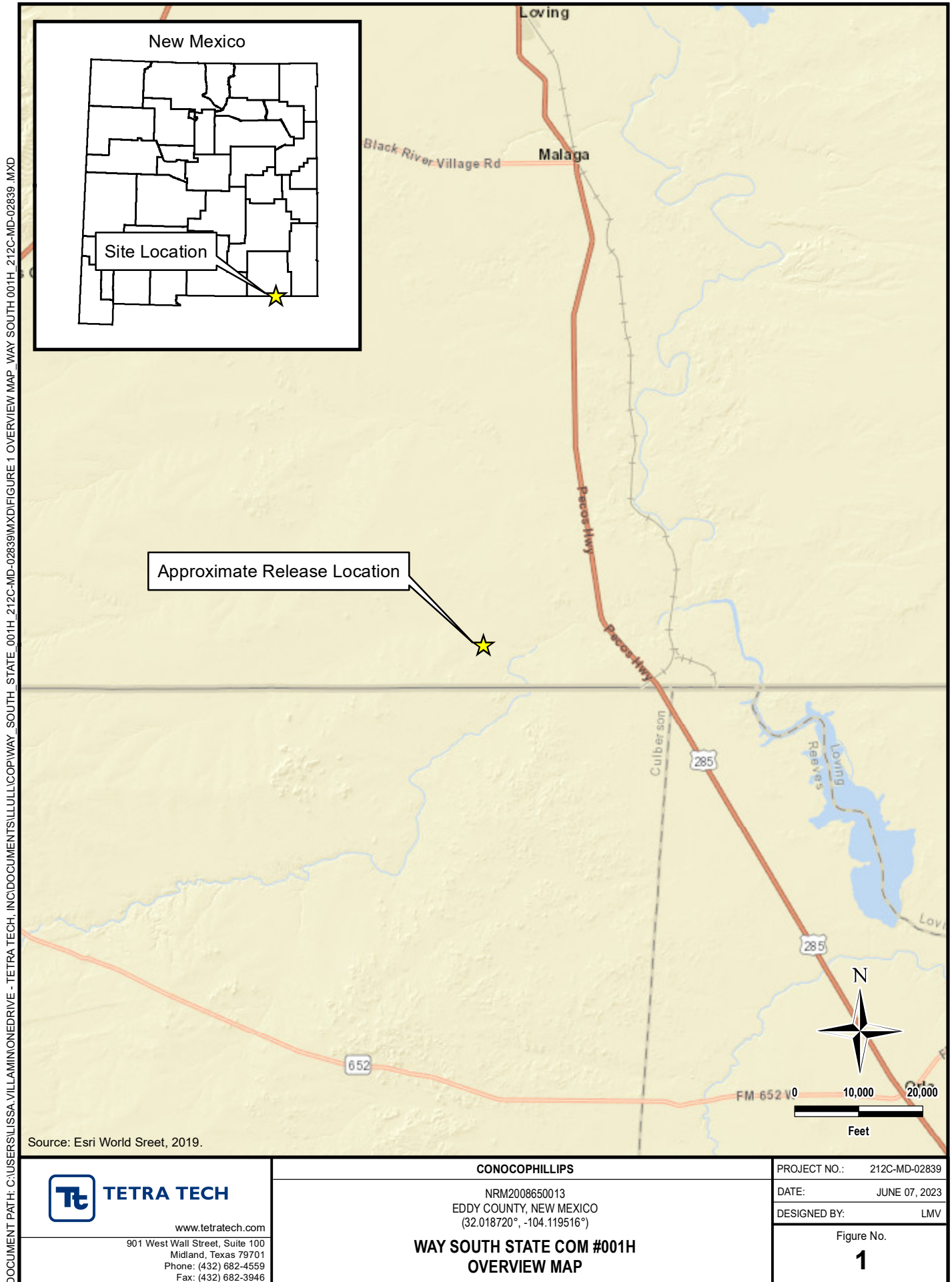
### Tables:

- Table 1 – Summary of Analytical Results – Initial Soil Assessment
- Table 2 – Summary of Analytical Results – Additional Soil Assessment
- Table 3 – Summary of Analytical Results – Background Assessment

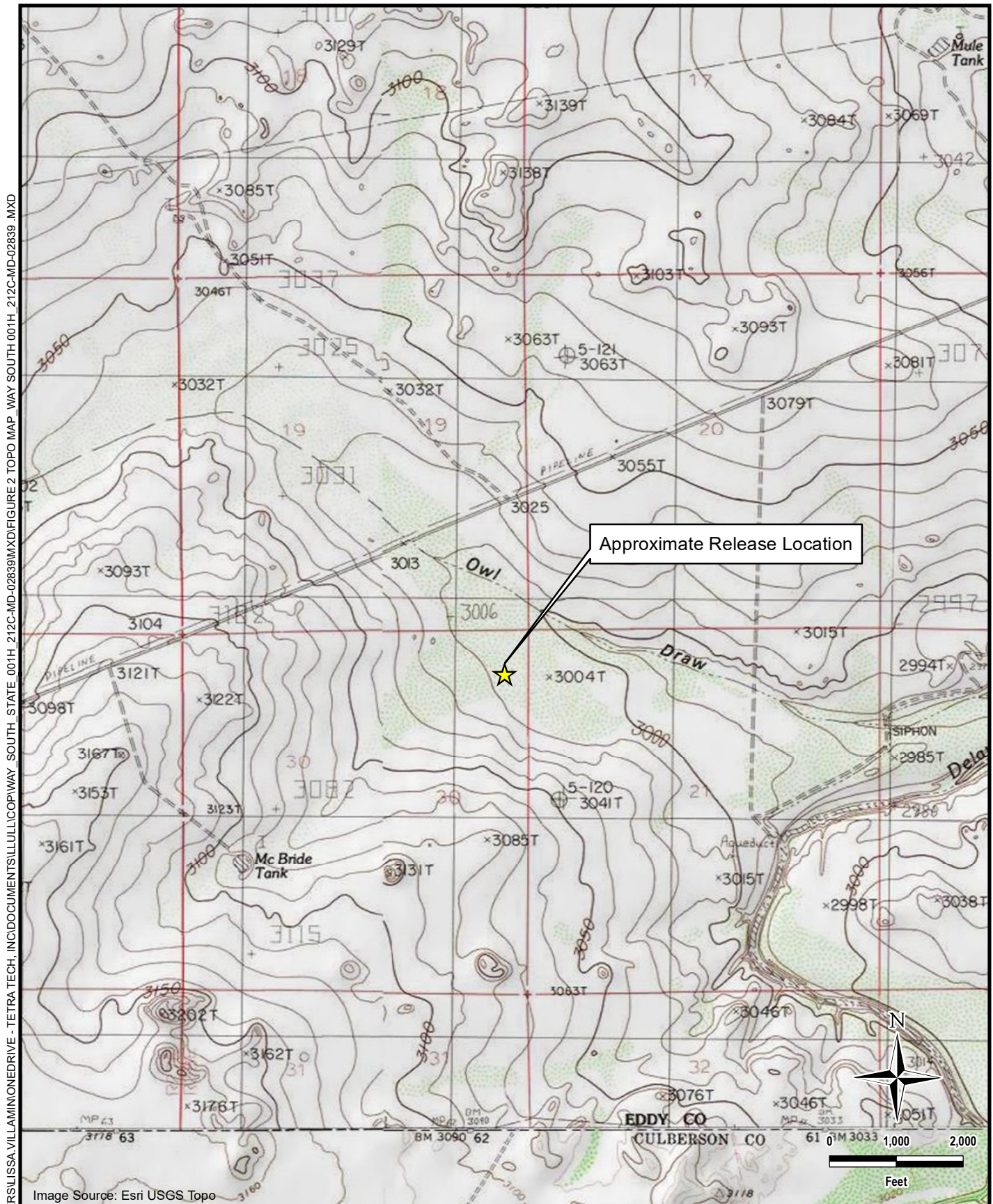
### Appendices:

- Appendix A – C-141 Forms
- Appendix B – Regulatory Correspondence and NMSLO Soil Boring Permit
- Appendix C – Cultural Survey
- Appendix D – Site Characterization Data
- Appendix E – Laboratory Analytical Data
- Appendix F – Photographic Documentation
- Appendix G – Seed Mix

## **FIGURES**







**TETRA TECH**

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CONOCOPHILLIPS

NRM2008650013  
EDDY COUNTY, NEW MEXICO  
(32.018720°, -104.119516°)

**WAY SOUTH STATE COM #001H  
TOPOGRAPHIC MAP**

PROJECT NO.: 212C-MD-02839

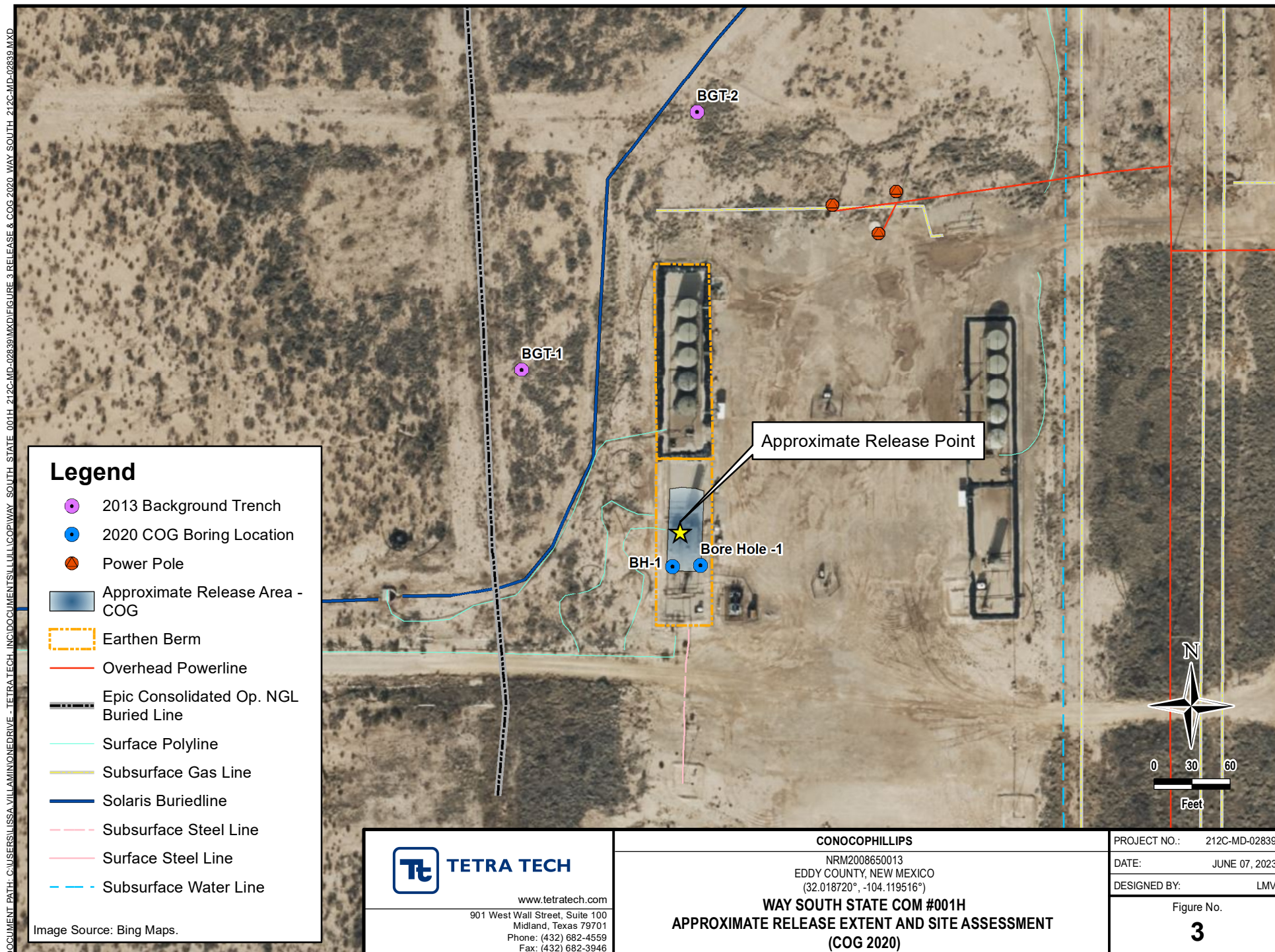
DATE: JUNE 07, 2023

DESIGNED BY: LMV

Figure No.

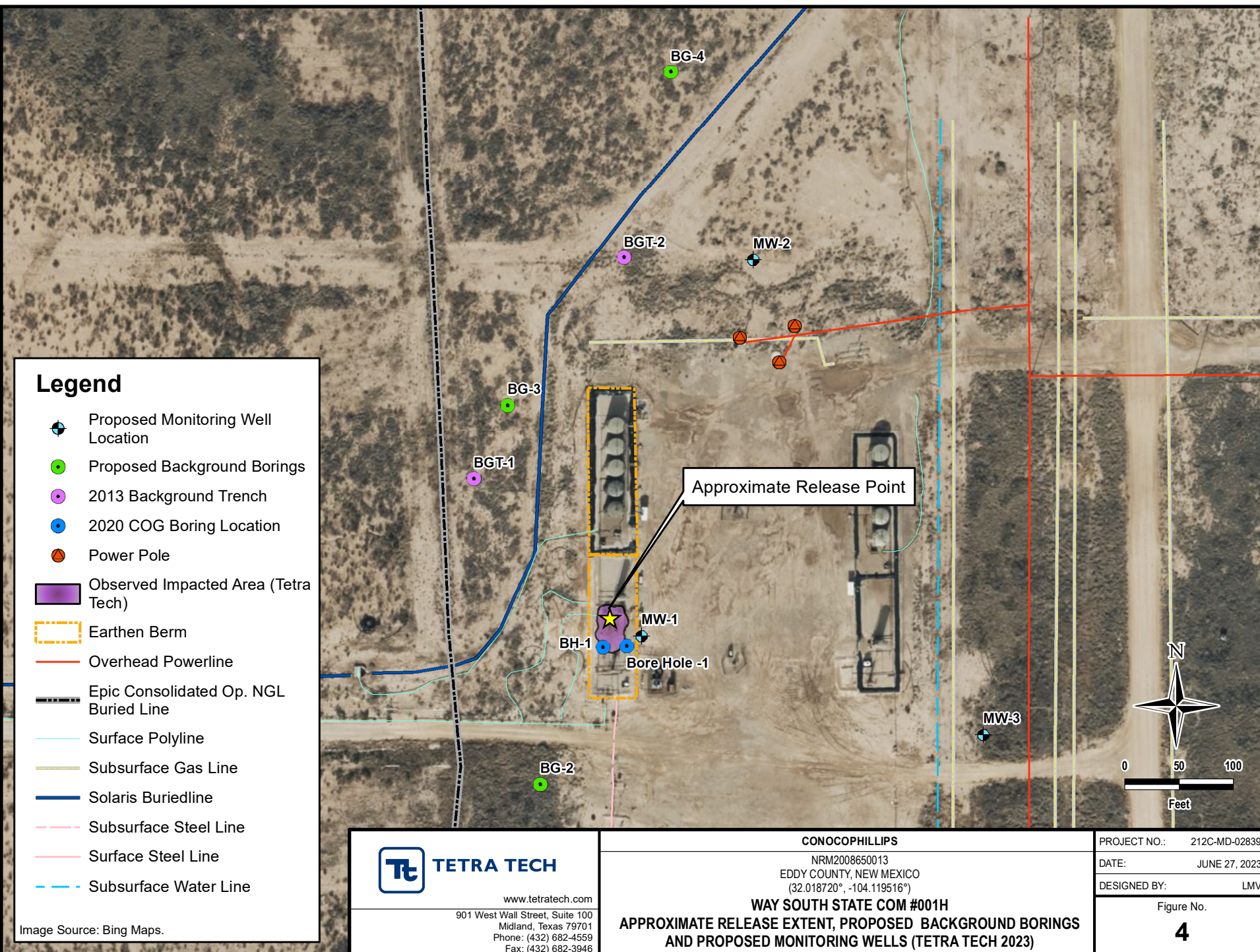
**2**







DOCUMENT PATH: C:\USERS\JESSA.VILLAMONEDRIVE - TETRA TECH, INC\DOCUMENTS\212C-MD-02839\MXD\FIGURE 4 RELEASE &amp; PROPOSED IT 2023 WAY SOUTH 212C-MD-02839.MXD



## **TABLES**

TABLE 1  
SUMMARY OF ANALYTICAL RESULTS  
2020 COG SOIL ASSESSMENT- nAB1821441824  
CONOCOPHILLIPS  
WAY SOUTH STATE COM #001 RELEASE  
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>												TPH <sup>3</sup>									
					Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylene		Total Xylenes		Total BTEX		GRO		DRO		MRO		Total TPH	
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q		
BH-1*	4/7/2020	1	6,960		<0.00201	U	<0.00201	U	<0.00201	U	<0.00402	U	<0.00201	U	<0.00201	U	<0.00201	U	<50.0	U	80.6		<50.0	U	80.6	
		2	1,810		<0.00198	U	<0.00198	U	<0.00198	U	<0.00397	U	<0.00198	U	<0.00198	U	<0.00198	U	<49.8	U	<49.8	U	<49.8	U	<49.8	U
		3	4,500		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		4	1,130		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		5	1,470		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		6	2,890		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		7	1,840		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

## NOTES:

ft. Feet  
bgs Below ground surface  
mg/kg Milligrams per kilogram  
TPH Total Petroleum Hydrocarbons  
GRO Gasoline range organics  
DRO Diesel range organics  
MRO Motor Oil range organics  
NS Sample not analyzed for parameter  
1 EPA Method 300.0  
2 EPA Method 8021B  
3 Method SW8015 Mod

***Bold and italicized values indicate exceedance of proposed RRLs and Reclamation Requirements.***

**QUALIFIERS:** U Analyte was not detected.

\* - Installed with a Geoprobe Unit

TABLE 2  
SUMMARY OF ANALYTICAL RESULTS  
2020 COG SOIL ASSESSMENT- nAB1821441824  
CONOCOPHILLIPS  
WAY SOUTH STATE COM #001 RELEASE  
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>												TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylene		Total Xylenes		Total BTEX		GRO		DRO		MRO	
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q
Bore Hole - 1	12/14/2020	0-1	859		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		3-4	887		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		5-6	1,240		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		7-8	1,450		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		9-10	2,250		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		14-15	3,880		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		19-20	1,490		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

## NOTES:

ft. Feet

bgs Below ground surface

mg/kg Milligrams per kilogram

TPH Total Petroleum Hydrocarbons

GRO Gasoline range organics

DRO Diesel range organics

MRO Motor Oil range organics

NS Sample not analyzed for parameter

1 EPA Method 300.0

2 EPA Method 8021B

3 Method SW8015 Mod

*Bold and italicized values indicate exceedance of proposed RRALs and Reclamation Requirements.*

TABLE 3  
SUMMARY OF ANALYTICAL RESULTS  
2013 BACKGROUND SOIL ASSESSMENT- nJMW1309539213  
CONOCOPHILLIPS  
WAY SOUTH STATE COM #001 RELEASE  
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH (GRO+DRO+EXT DRO)	
															C <sub>6</sub> - C <sub>10</sub>		> C <sub>10</sub> - C <sub>28</sub>		> C <sub>28</sub> - C <sub>36</sub>			
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg			
Background Trench - 1	1/8/2013	0-1	194	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		2	995	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		4	2,160	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		6	2,170	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		8	1,080	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		10	991	Qs	NA		NA		NA		NA		NA		NA		NA		-			
Background Trench - 2	1/8/2013	0-1	<20.0	Qs, U	NA		NA		NA		NA		NA		NA		NA		-			
		2	1,810	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		4	3,650	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		6	1,650	Qs	NA		NA		NA		NA		NA		NA		NA		-			
		8	1,340		NA		NA		NA		NA		NA		NA		NA		-			
		10	1,330		NA		NA		NA		NA		NA		NA		NA		-			

## NOTES:

ft. Feet

bgs Below ground surface

mg/kg Milligrams per kilogram

TPH Total Petroleum Hydrocarbons

GRO Gasoline range organics

DRO Diesel range organics

1 Method SM4500C1-B

2 Method 8021B

3 Method 8015M

NA Sample not analyzed for parameter

## QUALIFIERS:

U

***Bold and italicized values indicate exceedance of proposed RRALs and Reclamation Requirements.***

The analyte is not detected above the SDL

Qs Spike recovery outside of laboratory limits.




## **APPENDIX A C-141 Forms**

Incident ID	NRM2008650013
District RP	
Facility ID	
Application ID	

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

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name _____	Title: _____
Signature: <u></u>	Date: _____
email: _____	Telephone: _____
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>3/26/2020</u>

NRM2008650013

## \*\*\*\*\* LIQUID SPILLS - VOLUME CALCULATIONS \*\*\*\*\*

Location of spill: COG -Way South State Com 1H TB

Date of Spill: 25-Dec-2019

If the leak/spill is associated with production equipment, i.e. - wellhead, stuffing box,  
flowline, tank battery, production vessel, transfer pump, or storage tank place an "X" here: ☒

## Input Data:

If spill volumes from measurement, i.e. metering, tank volumes, etc. are known enter the volumes here: OIL: 0.0 BBL WATER: 0.0 BBL

If "known" spill volumes are given, input data for the following "Area Calculations" is optional. The above will override the calculated volumes.

## Total Area Calculations

## Standing Liquid Calculations

Total Surface Area	width	length	wet soil depth	oil (%)	Standing Liquid Area	width	length	liquid depth	oil (%)
Rectangle Area #1	55 ft	25 ft	X 0.70 in	50%	Rectangle Area #1	0 ft	X 0 ft	X 0.00 in	0%
Rectangle Area #2	0 ft	X 0 ft	X 0.00 in	0%	Rectangle Area #2	0 ft	X 0 ft	X 0 in	0%
Rectangle Area #3	0 ft	X 0 ft	X 0.0 in	0%	Rectangle Area #3	0 ft	X 0 ft	X 0 in	0%
Rectangle Area #4	0 ft	X 0 ft	X 0.0 in	0%	Rectangle Area #4	0 ft	X 0 ft	X 0 in	0%
Rectangle Area #5	0 ft	X 0 ft	X 0.0 in	0%	Rectangle Area #5	0 ft	X 0 ft	X 0 in	0%
Rectangle Area #6	0 ft	X 0 ft	X 0 in	0%	Rectangle Area #6	0 ft	X 0 ft	X 0 in	0%
Rectangle Area #7	0 ft	X 0 ft	X 0 in	0%	Rectangle Area #7	0 ft	X 0 ft	X 0 in	0%
Rectangle Area #8	0 ft	X 0 ft	X 0 in	0%	Rectangle Area #8	0 ft	X 0 ft	X 0 in	0%

0.1

## production system leak - DAILY PRODUCTION DATA REQUIRED

Average Daily Production: Oil 0 BBL Water 0 BBL 0 Gas (MCFD)

Total Hydrocarbon Content in gas: 0% (percentage)

Did leak occur before the separator?: ☒ YES ☒ N/A (place an "X")

H2S Content in Produced Gas: 0 PPM

H2S Content in Tank Vapors: 0 PPM

Amount of Free Liquid Recovered: 0 BBL okay

Percentage of Oil in Free Liquid Recovered: 0% (percentage)

Liquid holding factor \*: 0.14 gal per gal

Use the following when the spill wets the grains of the soil.

Use the following when the liquid completely fills the pore space of the soil:

\* Sand = 0.08 gallon (gal.) liquid per gal. volume of soil.

Occurs when the spill soaked soil is contained by barriers, natural (or not).

\* Gravelly (caliche) loam = 0.14 gal. liquid per gal. volume of soil.

\* Clay loam = 0.20 gal. liquid per gal. volume of soil.

\* Sandy clay loam soil = 0.14 gal liquid per gal. volume of soil.

\* Gravelly (caliche) loam = 0.25 gal. liquid per gal. volume of soil.

\* Clay loam = 0.16 gal. liquid per gal. volume of soil.

\* Sandy loam = 0.5 gal. liquid per gal. volume of soil.

Total Solid/Liquid Volume: 1,375 sq. ft.

40 cu. ft.

40 cu. ft.

Total Free Liquid Volume:

sq. ft.

cu. ft.

cu. ft.

## Estimated Volumes Spilled

	H2O	OIL
Liquid in Soil:	1.0 BBL	1.0 BBL
Free Liquid:	0.0 BBL	0.0 BBL
Totals:	1.0 BBL	1.0 BBL

Total Liquid Spill Liquid: 1.0 BBL 1.00 BBL

## Recovered Volumes

Estimated oil recovered: BBL check - okay  
Estimated water recovered: BBL check - okay

## Estimated Production Volumes Lost

	H2O	OIL
Estimated Production Spilled:	0.0 BBL	0.0 BBL

## Estimated Surface Damage

Surface Area: 1,375 sq. ft.  
Surface Area: .0316 acre

## Estimated Weights, and Volumes

Saturated Soil = 8,983 lbs 80 cu. ft. 3 cu. yds.  
Total Liquid = 2 BBL 84 gallon 699 lbs

## Air Emission from flowline leaks:

Volume of oil spill: - BBL  
Separator gas calculated: - MCF  
Separator gas released: - MCF  
Gas released from oil: - lb  
H2S released: - lb  
Total HC gas released: - lb  
Total HC gas released: - MCF

## Air Emission of Reporting Requirements:

	New Mexico	Texas
HC gas release reportable?	NO	NO
H2S release reportable?	NO	NO

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?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input type="checkbox"/> 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

Page 4

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: \_\_\_\_\_ Date: \_\_\_\_\_

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

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

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

Incident ID	NRM2008650013
District RP	
Facility ID	
Application ID	

Release Notification

4WSW9-200109-C-1410

Responsible Party

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

Location of Release Source

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

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

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

Nature and Volume of Release

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

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

Cause of Release



Incident ID	
District RP	
Facility ID	
Application ID	

## 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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**Received by: Shelly Wells Date: 8/23/2023☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **APPENDIX B**

# **Regulatory Correspondence and NMSLO Soil Boring Permit**

**From:** [Jester, Steve](#)  
**To:** [Billings, Bradford, EMNRD](#); [Harmon, Jocelyn, EMNRD](#)  
**Cc:** [Ike.Tavarez@conocophillips.com](mailto:Ike.Tavarez@conocophillips.com); [Jester, Steve](#)  
**Subject:** [EXTERNAL] FW: Regarding application Id. 244344 Incident # NRM2008650013 WAY SOUTH STATE COM #001H  
**Date:** Wednesday, December 21, 2022 3:04:29 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[image006.png](#)  
[image007.png](#)  
[Background.Chloride.2013-2020.Soil.Assessment.WAY.SOUTH.STATE.COM.#001H.xlsx](#)  
**Importance:** High

**CAUTION:** This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

**Brad and Jocelyn,**

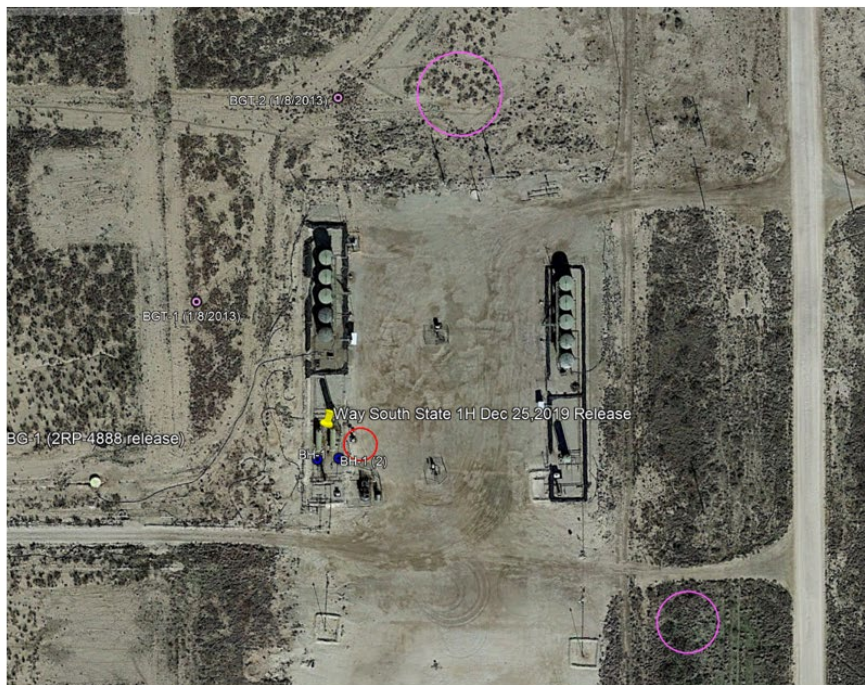
Per our Teams meeting earlier this afternoon, the figure below shows the planned location (red Circle) for an on-site temporary MW to take GW samples. We will install it as close as is safely practicable near BH-1(2).

Based on the results obtained from this temp MW, additional wells may be installed at the pink circle locations to obtain background GW data and GW potentiometric elevations.

Also attached are the soil data obtained from samples at BH-1 and BH-1(2), as well as background chloride soil concentrations from previous investigations in this immediate area. The background soil locations are also labeled on the figure below.

With your concurrence, we will move forward to obtain an NMOSE permit and then install this MW.

Let Ike and me know if you have any questions,  
Steve



**Proposed MW Locations:**

Red Circle – proposed temp MW near BH-1 (2)

Pink Circles – Future MW if needed

**Steve Jester** | Principal Consultant  
 Cell 713-806-8871  
[Steve.Jester@tetratech.com](mailto:Steve.Jester@tetratech.com)

**TETRA TECH** | Complex World, Clear Solutions™  
 1500 City West, #1000 | Houston, TX 77042  
<http://www.tetratech.com/en/oil-and-gas>

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Please consider the environment before printing. [Read more](#)



**From:** Harimon, Jocelyn, EMNRD <[Jocelyn.Harimon@emnrd.nm.gov](mailto:Jocelyn.Harimon@emnrd.nm.gov)>

**Sent:** Friday, December 16, 2022 12:10 PM

**To:** Esparza, Brittany <[Brittany.Esparza@conocophillips.com](mailto:Brittany.Esparza@conocophillips.com)>

**Cc:** Billings, Bradford, EMNRD <[Bradford.Billings@emnrd.nm.gov](mailto:Bradford.Billings@emnrd.nm.gov)>

**Subject:** [EXTERNAL]Regarding application Id. 244344 Incident # NRM2008650013 WAY SOUTH STATE COM #001H

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern,

Regarding application Id. 244344 Incident # NRM2008650013 WAY SOUTH STATE COM #001H.

After reviewing the Addendum to Work Plan for the COG Way South State 001H (NRM2008650013) the OCD respectfully requests a meeting to discuss the specific placement of the upgradient and downgradient monitor wells as well as any possible requests for variance or deferral for this release. Bradford Billings and I have availability next Wednesday 12/21/2022 to meet and discuss.

Jocelyn Harimon

**Jocelyn Harimon** • Environmental Specialist  
Environmental Bureau  
EMNRD - Oil Conservation Division  
1220 South St. Francis Drive | Santa Fe, NM 87505  
(505)469-2821 | [Jocelyn.Harimon@emnrd.nm.gov](mailto:Jocelyn.Harimon@emnrd.nm.gov)  
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



**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 169446

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 169446
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	12/21/2022

OCD Permitting

Home    Searches    Incidents    Incident Details

NRM2008650013 WAY SOUTH STATE COM #001H @ 30-015-37234

General Incident Information

Site Name:

WAY SOUTH STATE COM #001H

Well:

[\[30-015-37234\]](#) WAY SOUTH STATE COM #001H

Facility:

Operator:

[\[229137\]](#) COG OPERATING LLC

Status:

Closure Not Approved

Type:

Release Other

District:

Artesia

Severity:

Minor

Surface Owner:

State

County:

Eddy (15)

Incident Location:

A-30-26S-28E    0 FNL    0 FEL

Lat/Long:

32.01911,-104.11941 NAD83

Directions:

Notes

Source of Referral:

Industry Rep

Action / Escalation:

Referred to Environmental Inspector

Resulted In Fire:

☐

Will or Has Reached Watercourse:

☐

Endangered Public Health:

☐

Property Or Environmental Damage:

☐

Fresh Water Contamination:

☐

Contact Details

Contact Name:

Jennifer Knowlton

Contact Title:

Event Dates

Date of Discovery:

12/25/2019

Extension Date:

03/16/2021

Initial C-141 Received:

01/09/2020

Characterization Report Received:

04/19/2021

Remediation Plan Received:

09/26/2020

Closure Report Received:

OCD Notified of Release:

Cancelled Date:

Characterization Report Approved:

Remediation Plan Approved:

Remediation Due:

04/16/2021

Closure Report Approved:

Compositional Analysis of Vented and/or Flared Natural Gas

No Compositional Analysis Found

Incidents Materials

Cause	Source	Material	Volume				Units
			Unk.	Released	Recovered	Lost	
Equipment Failure	Other (Specify)	Crude Oil	<input type="checkbox"/>	4	3	1	BBL

- Quic
- [Gene](#)
  - [Mater](#)
  - [Event](#)
  - [Order](#)

- Assc
- [Incide](#)
  - [Well f](#)

- New
- [New I](#)
  - [New I](#)
  - [New I](#)
  - [New I](#)
  - [New I](#)
  - [New I](#)
  - [New I](#)



Incident Events

Date	Detail
04/18/2023	The Remediation Plan Addendum is Denied. Please, make sure a C-141 page 5 "Remediation Plan" page is signed and filled out at time of submission. This release is within a 100-year floodplain and high karst area and will need to be remediated to the strictest closure criteria from Table 1 of the OCD Spill Rule. Samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. The temporary monitoring well installation will allow COG to verify that there is no groundwater impact. The boring should be drilled safely and purged. A groundwater sample should include general chemistry including major cations and anions. Please keep the OCD up to date on the groundwater sample results. An additional meeting may be necessary in the future to discuss the results. The work will need to occur in 90 days after the work plan has been reviewed.
04/18/2023	The (04/18/2023, C-141) application [24434] was rejected by OCD. The operator was emailed with details of this event.
04/18/2023	An application [24434] was submitted to OCD for review. It was submitted, indicating that it was an: [C-141] Application for administrative approval of a release notification and corrective action The operator was emailed confirmation of this event.
12/21/2022	The (12/21/2022, IM-BNF) application [169446] was accepted by OCD. The operator was emailed with details of this event.
12/21/2022	The (12/21/2022, IM-BNF) application [169446] was assigned to this incident.
04/19/2021	The (04/18/2023, C-141) application [24434] was assigned to this incident.
03/16/2021	ConocoPhillips request for an extension to June 15th, 2021 is denied. Almost 15 months have passed since the release occurred and numerous extensions have already been granted. ConocoPhillips will have 30 days to submit a remediation/closure plan to the payment portal.
03/08/2021	The (03/08/2021, C-141) application [10373] was rejected by OCD. The operator was emailed with details of this event.
03/08/2021	An application [10373] was submitted to OCD for review. It was submitted, indicating that it was an: [C-141] Application for administrative approval of a release notification and corrective action The operator was emailed confirmation of this event.
12/25/2020	C-141 received on 01092020 for release on 12/25/2020. The cause of the release was reported as "The release was caused by a site glass failure. The release was on the pad. A vacuum truck was dispatched to remove all freestanding fluids. Concho will evaluate the site to determine if we may commence remediation immediately or 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."
09/28/2020	The (03/08/2021, C-141) application [10373] was assigned to this incident.
06/26/2020	Your request for an extension to September 25th, 2020 is approved. Based on the assessment data and access issues, additional evaluation will be needed prior to implementing remediation. COG is requesting a three-month extension until September 25, 2020 to complete evaluation, prepare, finalize and submit a Work Plan or Closure Report.
03/26/2020	The (03/26/2020, C-141) application [3285] was accepted by OCD. The operator was emailed with details of this event.
03/26/2020	The (03/26/2020, C-141) application [3285] was assigned to this incident.
03/26/2020	An application [3285] was submitted to OCD for review. It was submitted, indicating that it was an: [C-141] Application for administrative approval of a release notification and corrective action The operator was emailed confirmation of this event.

Orders

No Orders Found



Stephanie Garcia Richard  
COMMISSIONER

*State of New Mexico*  
*Commissioner of Public Lands*

310 OLD SANTA FE TRAIL  
P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S  
OFFICE

Phone (505) 827-5760

Fax (505) 827-5766

www.nmstatelands.org

May 1, 2023

ConocoPhillips (Tetra Tech as Contractor)

Attn: Ike Tavaréz

600 W Illinois Ave.

Midland, TX 79701

RE: Rule 12 Water Exploration / Soil Boring Permit # **WE-0818**

We are in receipt of your application and fees (\$ 100.00 per Application) requesting a TEMPORARY BORING PERMIT for Water exploration. The effective date of this authorization is for a period of not to exceed 1 year, commencing on **May 1, 2023** and ending on **April 30, 2024**. This Authorization (Right of Entry) letter is for the sole purpose of **3 soil borings to depth of 25' bgs and 6 soil borings to 1' bgs** in the following locations:

Township	Range	Section	Subdivision	County	Coordinates
26S	28E	30	NE4NE4	Eddy	32.018720, -104.119516
					32.019358, -104.118459
					32.018332, -104.119744
					32.019316, -104.119839
					32.020156, -104.119364
					32.018655, -104.120179

**CONDITIONS OF USE**

- The issuance of this Exploration Authorization does not guarantee a Water Easement will be issued for this property being explored, nor does it indicate a preference for a future water easement issuance to the holder of the authorization by the Commissioner of Public Lands.
- No refund of Permit application fees will occur after Permit approval letter is mailed.
- Authorized party shall notify the State Land Office District Resource Manager by telephone at least one business day prior to commencing any exploration activities.
- No blading or widening of any two-track dirt roads that provides access to the Property is permitted under this Authorization, except as necessary for the ingress and egress of required vehicles.
- No mining or removal of material for purposes other than testing is allowed under this Authorization. No sale of any material extracted from the Property is allowed under this Authorization.
- Authorized party shall observe all federal, state and local laws and regulations applicable to the Property.
- Authorized party shall take all reasonable precautions to prevent and suppress forest, brush and grass fires and prevent pollution of waters on or in the vicinity of the Property.
- Authorized party shall not block or disrupt roads or trails commonly in use.
- This Authorization is subject to any and all easements and rights-of-way previously granted and now in force and affect.

- J. Authorized party shall be responsible for repair and restitution for damage to any property improvements as a result of activities related to this exploration.
- K. **Authorized party shall conduct exploration activities only if a state-permitted archaeologist as per the Cultural Properties Act, §18-6-5(O) is present on the permitted site if an archaeological survey has not been conducted clearing the work beforehand.** Authorized party shall abide by the decisions of the permitted Archaeologist regarding prevention of damage to cultural property sites. **An archaeological report is to be submitted to State Land Office Cultural Resources Specialist within fifteen (15) days of the expiration date of this Authorization.** (An archeologist is not required to be present as long as there are no surface disturbing activities being performed).

#### SURFACE RECLAMATION AND RESTORATION

- A. All test holes must be plugged as soon as testing is completed.
- B. Drilling, excavation and other surface disturbing activities shall be restricted to areas deemed to have no archaeological significance.
- C. Access to the Property shall be over existing roads. Reclamation of all roads shall conform to the requirements of State Land Office Rule 20. No upgrading of the existing roads shall be done, except as necessary for the ingress and egress of required vehicles.
- D. All topsoil from the areas to be disturbed shall be stockpiled for use in reclamation.
- E. Upon completion of the use and operations permitted by this Authorization, all disturbed sites shall be re-contoured to approximate the original contours.
- F. All material removed by excavation shall be replaced into the test holes, with the exception of an adequate sample, on or before the expiration date of this Authorization.
- G. The natural environmental conditions that exist contemporaneously with this grant shall be preserved and protected. All applicable environmental laws and regulations shall be complied with and such reclamation or corrective actions as may be necessary to conduct EXPLORATORY WELL BORING consistent with safe and sound environmental management principles and practices shall be taken in order to protect the Property from any pollution, erosion or other environmental degradation and to avoid diminishing the value of the Property for any future use.

#### INDEMNITY

Authorized party shall save, hold harmless, indemnify and defend the State of New Mexico, the Commissioner and Commissioner's employees, agents and contractors, in both their official and individual capacities, from any and all liability, claims, losses, damages, or expenses of any character or nature whatsoever, including but not limited to attorney's fees, court costs, loss of land value or use, third party claims, penalties, or removal, remedial or restoration costs arising out of, or alleged to arise out of:

- A. The operations or presence on the Property, or on adjacent or proximate state trust lands, including those used to access the Property for the purposes of this Authorization, of Authorized party or authorized party's employees, agents, contractors or invitees;
- B. The activities of third parties on the Property, or on adjacent or proximate state trust lands, including those used to access the Property or other adjacent or proximate state trust lands, whether with or without Authorized party's knowledge or consent;
- C. Any Hazardous Materials located in, under, upon or otherwise affecting the Property or adjacent or proximate state trust lands, regardless of their point of origin or date of contamination.

If you have any questions or concerns please contact Faith Crosby, Water Bureau Manager at (505) 827-5849 or David Gallegos, Water Resource Analyst at (505) 476-0378.

Respectfully,

*Stephanie Garcia Richard /SS*

Stephanie Garcia Richard  
Commissioner of Public Lands

SS/dg

xc: Azucena Ramirez, NMOSE District II; [Azucena.Ramirez@ose.nm.gov](mailto:Azucena.Ramirez@ose.nm.gov)  
Steve Jester, Tetra Tech, [STEVE.JESTER@tetratech.com](mailto:STEVE.JESTER@tetratech.com)  
Kelli Fox, NMSLO DRM Director

Date

*5/1/23*

## **APPENDIX C**

### **Cultural Survey Documentation**

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

Registration

Lead Agency: New Mexico State Land Office

Performing Agency: SWCA Environmental Consultants

Activity ID: 80223

Performing Agency Report No: 23-245

Report Recipient (Your Client): Tetra Tech

- Activity Types:
- ☐ Research Design
  - ☒ Archaeological Survey/Inventory
  - ☐ Architectural Survey/Inventory
  - ☐ Test Excavation
  - ☐ Monitoring
  - ☐ Collections/Non-Field Study
  - ☐ Compliance Decision
  - ☐ Literature Review Overview
  - ☐ Excavation
  - ☐ Ethnographic Study
  - ☐ Resource/Property Visit
  - ☐ Historic Structures Report
  - ☐ Other:

Total Survey Acreage: 18.15

Total Tribal Acreage: 0.00

Total Resources Visited: 0



NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

Associate/Register Resources

Prefix	Number	Field Site/Other Number	In GIS	Resource Type	Collections Made?	Revisit
			✓		<input type="checkbox"/>	

## NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

## Report Details

Lead Agency

Lead Agency: New Mexico State Land Office

Lead Agency Report No.

Report Number: \_\_\_\_\_

Title of Report

Title of Report: A Cultural Resources Survey of the Way South State Com Monitor Well Project in Eddy County, New Mexico

Authors: Paisley DeFreese

Type of Report

Publication Type: Report, Monograph, or Book Negative

Description of Undertaking (what does the project entail?)

**Description:** Tetra Tech contracted SWCA Environmental Consultants (SWCA) to conduct an intensive cultural resources pedestrian survey in support of the Way South State Com Monitor Well project in Eddy County, New Mexico. The proposed project consists of constructing and maintaining a new well and pad and is approximately 23.26 kilometers (14.45 miles) south of Malaga, New Mexico on lands managed by the New Mexico State Land Office (SLO). The SLO will serve as the lead agency.

Tetra Tech is proposing to build a monitor well. The proposed area of potential effects (APE) is a 10-acre (4.04 hectare) block. The project is completely on SLO land. Tetra Tech sent a site monitor to survey with SWCA as part of their standard safety protocol.

Dates of Investigation

From: 04/17/2023 To: 04/17/2023

Report Date

Report Date: 04/26/2023

Performing Agency/Consultant

Name: SWCA Environmental Consultants

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

Principal Investigator:	Christine Kendrick
Field Supervisor:	Thea Stehlik-Barry
Field Personnel Names:	N/A
Historian/Other:	N/A

Report Details

Performing Agency Report Number

Report Number: 23-245

Client/Customer (project proponent)

Name:	Tetra Tech
Contact:	Steve Jester
Address:	1500 City West, #1000 Houston, TX 77042
Phone:	(713) 806-8871

Client/Customer Project Number

Project Number: 80223

## NMCRIS Investigation Abstract Form (NIAF)

**NMCRIS Activity No. 1 5 2 7 5 6**

### Ownership & Location

Land Ownership Status (Must be indicated on Project Map)

**Land Ownership:**

Land Owner/Manager	Protocol	Acres Surveyed	Acres in APE
NM SLO		18.15	10

**Total Survey Acreage:** 18.15

**Total Tribal Acreage:** 0.00

### Record Search(es)

**Date of HPD/ARMS File Review:** 30-March-2023

**Date of Other Agency File Review:** 30-March-2023

### Survey Data

**Source Graphics:** NAD 83

☒ USGS 7.5' (1:24,000) topo map

☐ Other Topo Map Scale:

☒ GPS Unit

☐ Aerial Photos

☐ Other Source Graphic(s):

**The following tables (b,c,& e) are calculated by the NMCRIS Map Service**

#### USGS 7.5' Topographic Map(s)

Map Name	USGS Quad Code
Red Bluff	32104-A1

#### County(ies)

County	FIPS
Eddy	

#### Legal Description

Unplatted	Township (N/S)	Range (E/W)	Section
	T26S	R29E	29
	T26S	R29E	30

#### Projected Legal Description

**Nearest City or Town:** Malaga

## NMCRIS Investigation Abstract Form (NIAF)

**NMCRIS Activity No. 1 5 2 7 5 6**

**GIS**

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## NMCRIS Investigation Abstract Form (NIAF)

**NMCRIS Activity No. 1 5 2 7 5 6**

### Methodology

#### Survey Field Methods

**Intensity:** 100% coverage

**Configuration:** ☒ Block Survey Units ☐ Linear Survey Units (l x y)

#### Other Survey Units

**Scope:** Non-Selective

**Coverage Method:** ☒ Systematic Pedestrian Coverage **Other Method:** \_\_\_\_\_

**Survey Interval (m):** 15 **Crew Size:** 1

**Fieldwork Dates: From:** 04/17/2023 **To:** 04/17/2023

**Survey Person Hours:** 1.25 **Recording Person Hours:** 0

**Additional Narrative:** Colton Bickerstaff, a Tetra Tech monitor, surveyed with SWCA.

#### Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.)

#### Environmental Setting:

The project area falls within the Chihuahuan Basins and Playas (24a) ecoregion. This ecoregion includes alluvial fans, internally drained basins, and river valleys mostly below 4,500 feet in elevation (Griffith et al. 2006). The elevation of the project area is 1,061.6 m (3,483 feet) above mean sea level. This ecoregion is composed of desert grasses and shrub land in erosional settings. This project is within the shrub land setting. Typical vegetation includes creosote bush, tarbush, yuccas, sandsage, viscid acacia, tasajillo, lechuguilla, mesquite, and ceniza. (Griffith et al. 2006). Wildlife in the area includes mule deer, prairie dog, gopher, fox, coyote, skunk, black-tailed jackrabbit, desert cottontail, scaled quail, burrowing owl, mourning dove, wrens, various hawks, bull snake, prairie rattlesnake, plain hognose snake, western hooknose snake and numerous lizards (Biota Information System of New Mexico 2023; Brown 1994). Important animal species prehistorically include deer, jackrabbit, and cottontail.

Geology underlying the project area comprises Holocene to middle Pleistocene eolian deposits ([Qe] [U.S. Geological Survey 2023]). Two soils are present within the project area: Gypsum land-Cottonwood complex, 0 to 3 percent slopes (0.28 percent survey area) are well drained, with a low runoff class; Cottonwood-Reeves loams, overflow, 0 to 3 percent slopes (99.72 percent of survey area) and are well drained, with a moderate runoff class (Natural Resources Conservation Service 2023).

Weather data for the survey area was compiled using the Carlsbad Caverns, New Mexico (291480), climate station data (period of record February 1, 1930, to June 6, 2016). Rainfall in the survey area can occur year-round but is most abundant from May through October. During that time period, rainfall totals 30.1 cm (11.9 inches), with an average of 5.0 cm (1.98 inches) per month for those months; September has the heaviest average precipitation. Snowfall is heaviest during December at 5.6 cm (2.2 inches) and can fall between October and March. Temperatures are coldest in December and January at 0.8

## NMCRIS Investigation Abstract Form (NIAF)

### NMCRIS Activity No. 1 5 2 7 5 6

degree Celsius (33.6 degrees Fahrenheit) and warmest in June at 32.8 degrees Celsius (91.1 degrees Fahrenheit) (Western Regional Climate Center 2023).

Biota Information System of New Mexico

2023 Database Query for Eddy County. Available at: <http://www.bison-m.org/>. Accessed April 2023.

Griffith, G. E., J. M. Omernik, M. M. McGraw, G. Z. Jacobi, C. M. Canavan, T. S. Schrader, D. Mercer, R. Hill, and B. C. Moran

2006 Ecoregions of New Mexico. Color poster with map, descriptive text, summary tables, and photographs. Map scale 1:1,100,000. U.S. Geological Survey, Reston, Virginia.

Natural Resources Conservation Service

2023 Web Soil Survey of Eddy County, New Mexico. Available at: <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed April 2023.

Western Regional Climate Center

2023 Climate Summary for Carlsbad Caverns Climate Station (291480). Available at: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?nm1480>. Accessed April 2023

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## NMCRIS Investigation Abstract Form (NIAF)

**NMCRIS Activity No. 1 5 2 7 5 6**

### Methodology

#### Percent Ground Visibility

**Ground Visibility:** 76-99 %**Condition of Survey Area:** Area was heavily disturbed with a well pad, access roads, flowlines, cleared pad areas, fence lines, and cattle traffic.

#### Attachments (check all appropriate boxes)

- ✓ USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)
- ✓ Copy of NMCRIS Map Check (required)
- ☐ LA Site Forms – new sites (with sketch map & topographic map) if applicable
- ☐ LA Site Forms (update) – previously recorded & unrelocated sites (first 2 pages minimum)
- ☐ List and Description of Isolates, if applicable
- ☐ List and Description of Collections, if applicable

#### Other Attachments

- ✓ Photographs and Log
- ☐ Other attachments **Describe:** \_\_\_\_\_

## NMCRIS Investigation Abstract Form (NIAF)

**NMCRIS Activity No. 1 5 2 7 5 6**

### Cultural Resource Findings

#### Investigation Results

Archaeological Sites Discovered and Registered: 0

Archaeological Sites Discovered and NOT Registered: 0

Previously Recorded Archaeological Sites Revisited (site update form required): 0

Previously Recorded Archaeological Sites Not Relocated (site update form required): 0

Total Archaeological Sites (visited & recorded): 0

Total Isolates Recorded: 0

✓ Non-Selective Isolate Recording

HCPI Properties Discovered and Registered: 0

HCPI Properties Discovered And NOT Registered: 0

Previously Recorded HCPI Properties Revisited: 0

Previously Recorded HCPI Properties NOT Relocated: 0

Total HCPI Properties (visited & recorded, including acequias): 0

If No Cultural Resources Found, Discuss Why: 0

#### Management Summary

SWCA surveyed a 30.48-m (100-feet) buffer on all sides of the proposed project polygons for a total survey area of 18.15 acres (7.33 hectares). No archaeological sites or historic cultural properties (buildings, structures, or objects) or isolated occurrences were observed. This is likely due to the small survey area in addition to the previous surveys around the project also finding no cultural materials.

**Summary:** SLO cultural resources preservation efforts requires that an archaeological survey be conducted to current standards for the APE pursuant to and in compliance with New Mexico Administrative Code (NMAC) 4.10.15 to ensure that cultural properties are not inadvertently excavated, harmed, or destroyed by any person. SWCA recommends that the proposed project will have no effect on any cultural resources listed or eligible for listing in the New Mexico State Register of Cultural Properties or the National Register of Historic Places. However, if buried cultural deposits are discovered during project construction, work should cease immediately, and the New Mexico SLO and State Historic Preservation Officer should be contacted

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

Attachments

Documents:

Attachment Type	Description	Name	File Type	Size	Upload Date	Upload By
Report/Manuscript	NMCRIS_152756 NIAF	NMCRIS_152756	PDF Document	6,879 KB	21-April-2023	Paisley DeFreese



## NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

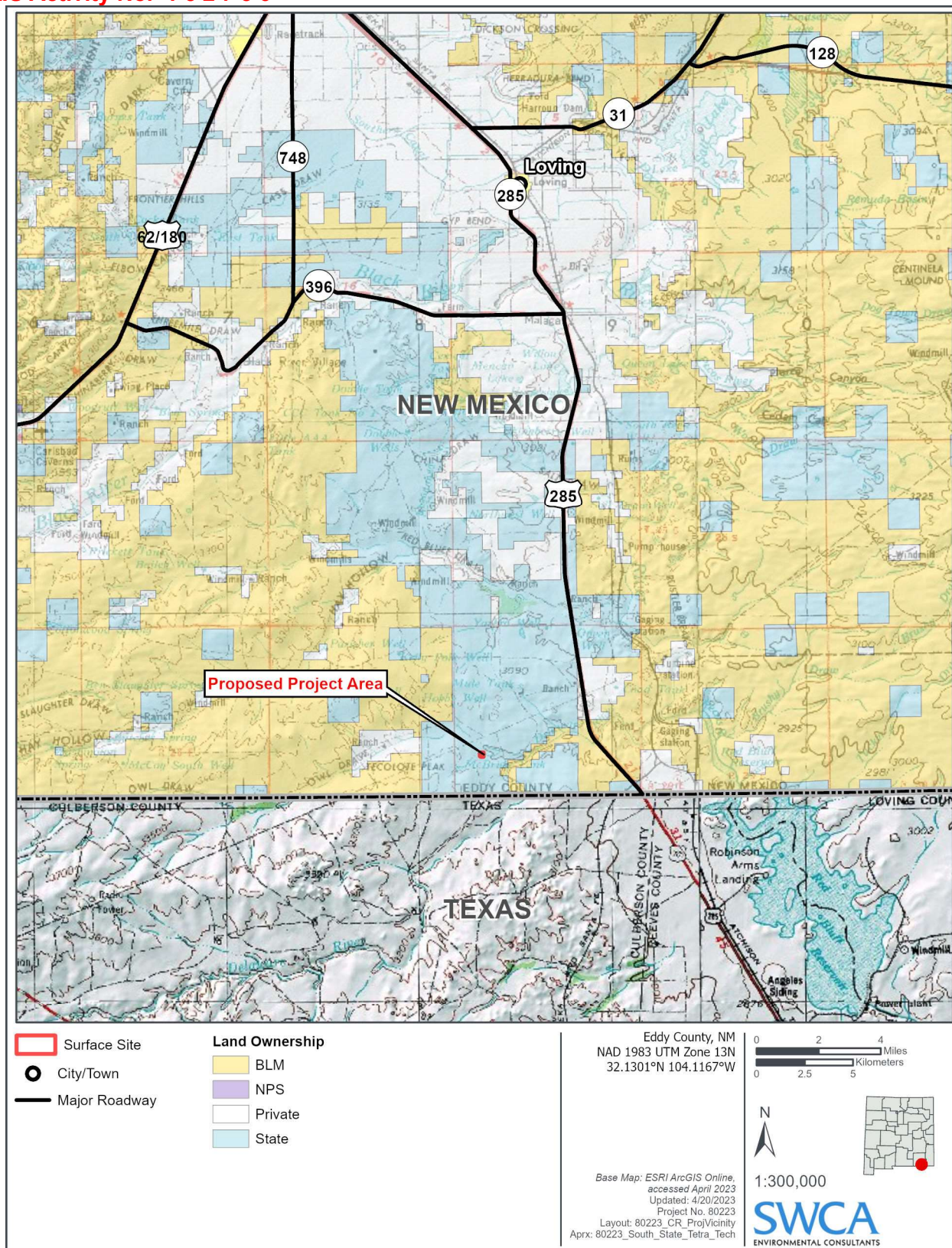


Figure 1. Project vicinity map.



# NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

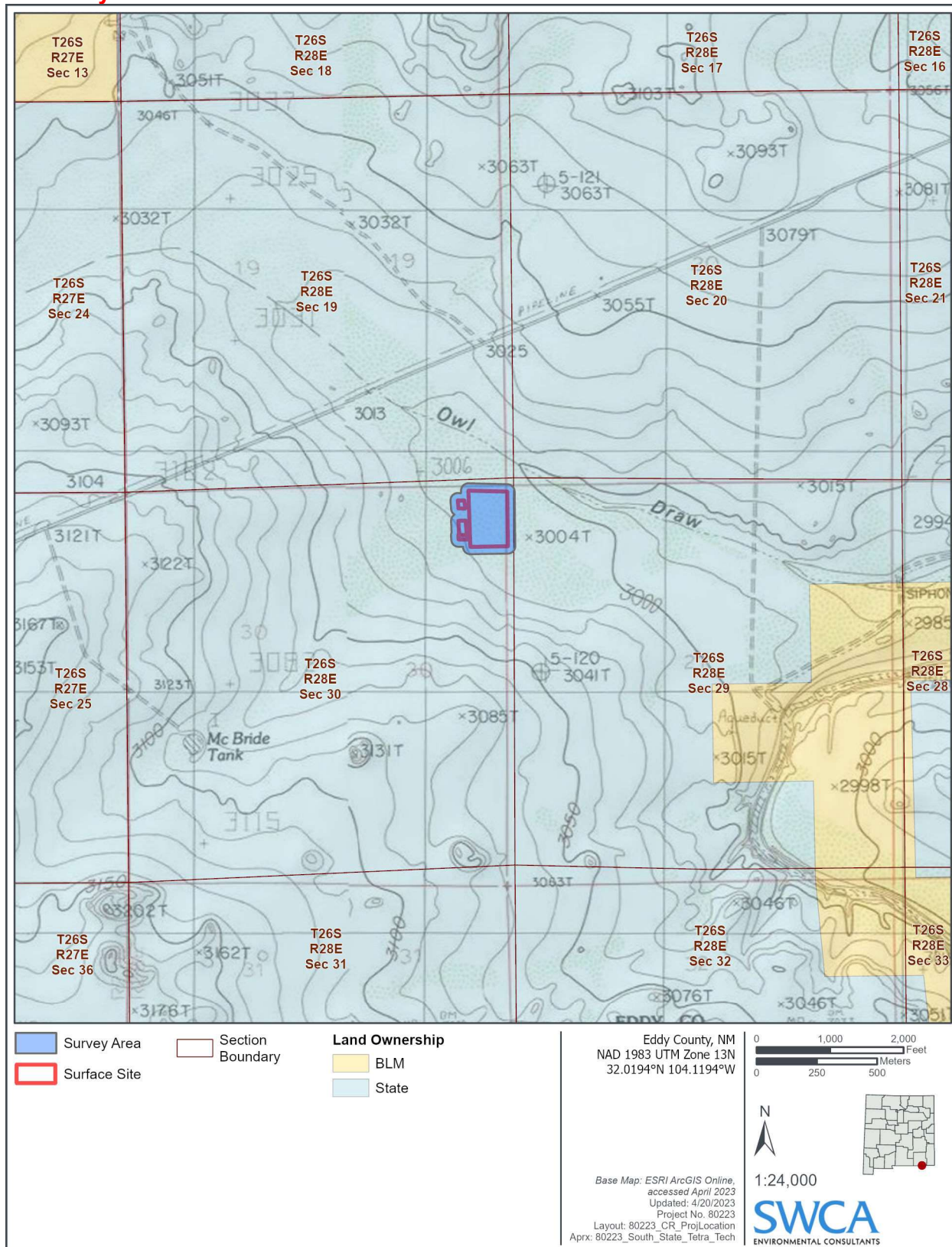


Figure 2. Project location map.

## NMCRIS Investigation Abstract Form (NIAF)

**NMCRIS Activity No. 1 5 2 7 5 6**



**Figure 3. Project overview, facing northeast (Frame -9754).**



**Figure 4. Project overview, facing southwest (Frame -9456).**



## NMCRIS Investigation Abstract Form (NIAF)

**NMCRIS Activity No. 1 5 2 7 5 6**



**Figure 5. Project overview, facing southeast (Frame -5308).**



**Figure 6. Project overview, facing north (Frame -2509).**

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 2 7 5 6

Table 1. Previously Known Cultural Resources within 500 m (0.31 mile) of the Project Area

\*Redacted

Table 2. Previously Completed Cultural Resource Surveys within 500 m (0.31 mile) of the Project Area

\*Redacted

Figure 7. ARMS screenshot with the survey area in blue and sites in yellow.

\*Redacted



## **APPENDIX D**

### **Site Characterization**

# National Flood Hazard Layer FIRMette



104°7'29"W 32°1'24"N



## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/19/2022 at 1:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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



# 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-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">C 04466 POD1</a>	CUB	ED		3	3	2	29	26S	28E	584327	3542357	1282	96	33	63

Average Depth to Water: **33 feet**

Minimum Depth: **33 feet**

Maximum Depth: **33 feet**

Record Count: 1

### UTMNAD83 Radius Search (in meters):

**Easting (X):** 583161.57

**Northing (Y):** 3542891.64

**Radius:** 1500

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/22/22 3:33 PM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER



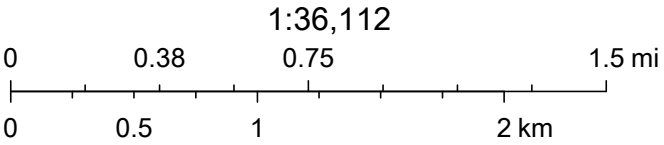
# OCD Karst Potential Map



9/22/2022, 4:40:36 PM

Karst Occurrence Potential

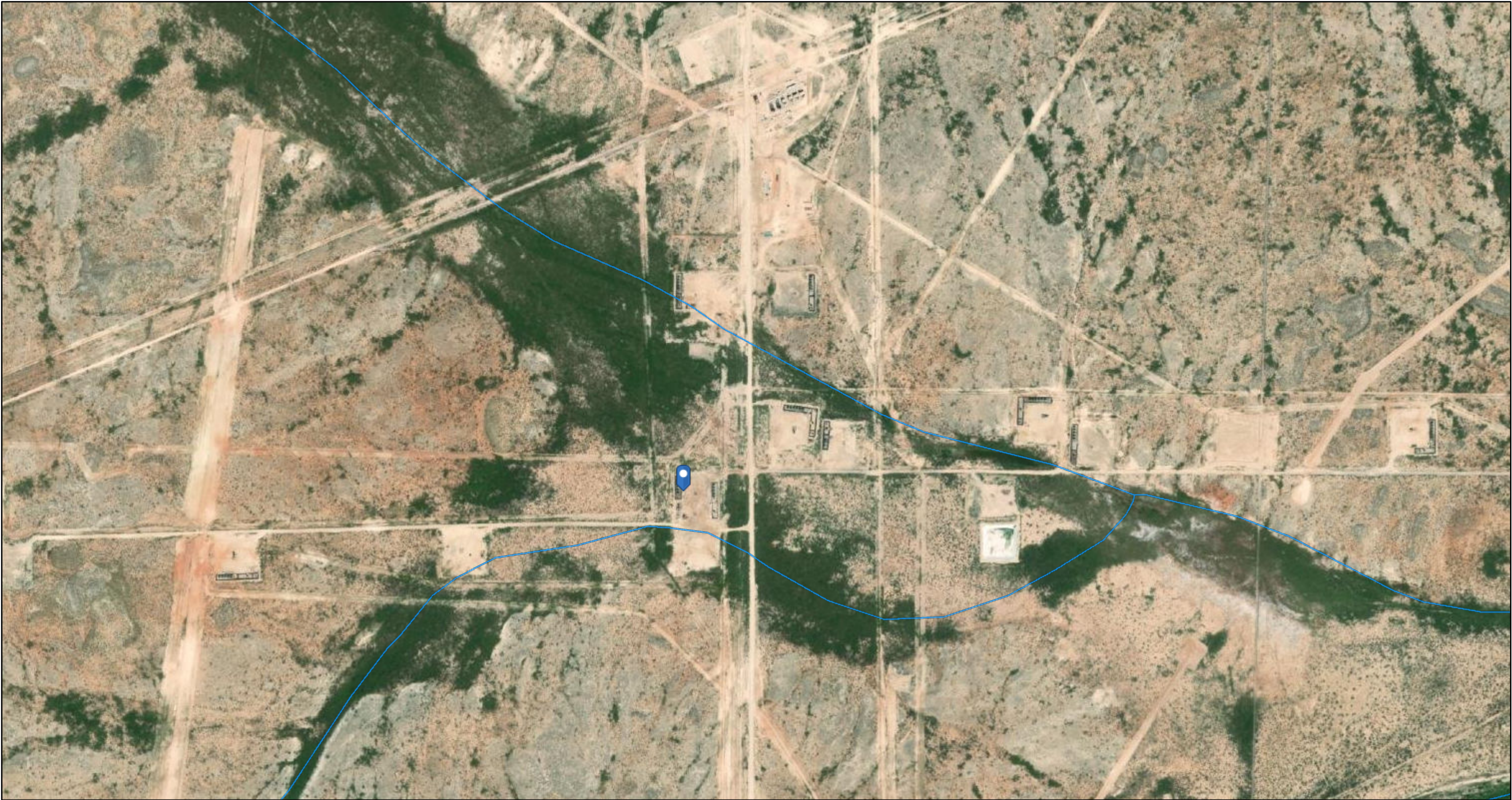
- High
- Medium



BLM, OCD, New Mexico Tech, Esri, HERE, Garmin, Maxar

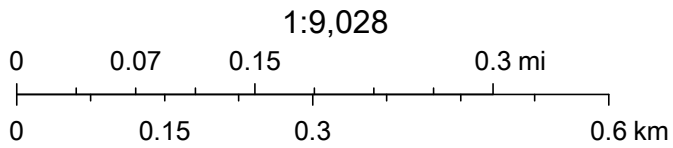


# OCD Waterbodies Map



9/22/2022, 4:43:12 PM

— OSE Streams



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



## **APPENDIX E**

### **Laboratory Analytical Data**

Report Date: January 11, 2013

Work Order: 13011002

Page Number: 1 of 3

## Summary Report

Ike Tavarez  
Tetra Tech  
1910 N. Big Spring Street  
Midland, TX 79705

Report Date: January 11, 2013

Work Order: 13011002



Project Location: Eddy Co., NM  
Project Name: COG/Way South State Com. #1H TB  
Project Number: 114-6401534

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
318048	Background Trench 1 0-1'	soil	2013-01-08	00:00	2013-01-09
318049	Background Trench 1 2'	soil	2013-01-08	00:00	2013-01-09
318050	Background Trench 1 4'	soil	2013-01-08	00:00	2013-01-09
318051	Background Trench 1 6'	soil	2013-01-08	00:00	2013-01-09
318052	Background Trench 1 8'	soil	2013-01-08	00:00	2013-01-09
318053	Background Trench 1 10'	soil	2013-01-08	00:00	2013-01-09
318054	Background Trench 2 0-1'	soil	2013-01-08	00:00	2013-01-09
318055	Background Trench 2 2'	soil	2013-01-08	00:00	2013-01-09
318056	Background Trench 2 4'	soil	2013-01-08	00:00	2013-01-09
318057	Background Trench 2 6'	soil	2013-01-08	00:00	2013-01-09
318058	Background Trench 2 8'	soil	2013-01-08	00:00	2013-01-09
318059	Background Trench 2 10'	soil	2013-01-08	00:00	2013-01-09

### Sample: 318048 - Background Trench 1 0-1'

Param	Flag	Result	Units	RL
Chloride	Q*	194	mg/Kg	4

### Sample: 318049 - Background Trench 1 2'

Param	Flag	Result	Units	RL
Chloride	Q*	995	mg/Kg	4

Report Date: January 11, 2013

Work Order: 13011002

Page Number: 2 of 3

**Sample: 318050 - Background Trench 1 4'**

Param	Flag	Result	Units	RL
Chloride	Qs	2160	mg/Kg	4

**Sample: 318051 - Background Trench 1 6'**

Param	Flag	Result	Units	RL
Chloride	Qs	2170	mg/Kg	4

**Sample: 318052 - Background Trench 1 8'**

Param	Flag	Result	Units	RL
Chloride	Qs	1080	mg/Kg	4

**Sample: 318053 - Background Trench 1 10'**

Param	Flag	Result	Units	RL
Chloride	Qs	991	mg/Kg	4

**Sample: 318054 - Background Trench 2 0-1'**

Param	Flag	Result	Units	RL
Chloride	Qs	<20.0	mg/Kg	4

**Sample: 318055 - Background Trench 2 2'**

Param	Flag	Result	Units	RL
Chloride	Qs	1810	mg/Kg	4

**Sample: 318056 - Background Trench 2 4'**

Param	Flag	Result	Units	RL
Chloride	Qs	3650	mg/Kg	4

**Sample: 318057 - Background Trench 2 6'**

Param	Flag	Result	Units	RL
Chloride	Qs	1650	mg/Kg	4

Report Date: January 11, 2013

Work Order: 13011002

Page Number: 3 of 3

**Sample: 318058 - Background Trench 2 8'**

Param	Flag	Result	Units	RL
Chloride		1340	mg/Kg	4

**Sample: 318059 - Background Trench 2 10'**

Param	Flag	Result	Units	RL
Chloride		1330	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1298 806-794-1296 FAX 806-794-1298  
 200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944  
 5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313  
 (BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750  
 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Ike Tavarez  
 Tetra Tech  
 1910 N. Big Spring Street  
 Midland, TX, 79705

Report Date: January 11, 2013

Work Order: 13011002



Project Location: Eddy Co., NM  
 Project Name: COG/Way South State Com. #1H TB  
 Project Number: 114-6401534

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
318048	Background Trench 1 0-1'	soil	2013-01-08	00:00	2013-01-09
318049	Background Trench 1 2'	soil	2013-01-08	00:00	2013-01-09
318050	Background Trench 1 4'	soil	2013-01-08	00:00	2013-01-09
318051	Background Trench 1 6'	soil	2013-01-08	00:00	2013-01-09
318052	Background Trench 1 8'	soil	2013-01-08	00:00	2013-01-09
318053	Background Trench 1 10'	soil	2013-01-08	00:00	2013-01-09
318054	Background Trench 2 0-1'	soil	2013-01-08	00:00	2013-01-09
318055	Background Trench 2 2'	soil	2013-01-08	00:00	2013-01-09
318056	Background Trench 2 4'	soil	2013-01-08	00:00	2013-01-09
318057	Background Trench 2 6'	soil	2013-01-08	00:00	2013-01-09
318058	Background Trench 2 8'	soil	2013-01-08	00:00	2013-01-09
318059	Background Trench 2 10'	soil	2013-01-08	00:00	2013-01-09

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 14 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive style with a large, stylized 'M' and 'A'.

---

Dr. Blair Leftwich, Director  
Dr. Michael Abel, Project Manager

# Report Contents

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Sample 318052 (Background Trench 1 8')	6
Sample 318053 (Background Trench 1 10')	6
Sample 318054 (Background Trench 2 0-1')	6
Sample 318055 (Background Trench 2 2')	7
Sample 318056 (Background Trench 2 4')	7
Sample 318057 (Background Trench 2 6')	7
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QC Batch 98013 - Method Blank (1)	9
QC Batch 98017 - Method Blank (1)	9
<b>Laboratory Control Spikes</b>	<b>10</b>
QC Batch 98013 - LCS (1)	10
QC Batch 98017 - LCS (1)	10
QC Batch 98013 - MS (1)	10
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<b>Calibration Standards</b>	<b>12</b>
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## Case Narrative

Samples for project COG/Way South State Com. #1H TB were received by TraceAnalysis, Inc. on 2013-01-09 and assigned to work order 13011002. Samples for work order 13011002 were received intact at a temperature of 17.7 C. Samples were received without ice.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	83039	2013-01-11 at 13:06	98013	2013-01-11 at 13:09
Chloride (Titration)	SM 4500-Cl B	83041	2013-01-11 at 13:47	98017	2013-01-11 at 13:50

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13011002 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: January 11, 2013  
114-6401534

Work Order: 13011002  
COG/Way South State Com. #1H TB

Page Number: 5 of 14  
Eddy Co., NM

## Analytical Report

### Sample: 318048 - Background Trench 1 0-1'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98013	Date Analyzed:	2013-01-11
Prep Batch:	83039	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*		194	mg/Kg	5	4.00

### Sample: 318049 - Background Trench 1 2'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98013	Date Analyzed:	2013-01-11
Prep Batch:	83039	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*		995	mg/Kg	5	4.00

### Sample: 318050 - Background Trench 1 4'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98013	Date Analyzed:	2013-01-11
Prep Batch:	83039	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*		2160	mg/Kg	5	4.00

Report Date: January 11, 2013  
114-6401534

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COG/Way South State Com. #1H TB

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Eddy Co., NM

**Sample: 318051 - Background Trench 1 6'**

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98013	Date Analyzed:	2013-01-11
Prep Batch:	83039	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		2170	mg/Kg	5	4.00

**Sample: 318052 - Background Trench 1 8'**

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98013	Date Analyzed:	2013-01-11
Prep Batch:	83039	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		1080	mg/Kg	5	4.00

**Sample: 318053 - Background Trench 1 10'**

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98013	Date Analyzed:	2013-01-11
Prep Batch:	83039	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		991	mg/Kg	5	4.00

**Sample: 318054 - Background Trench 2 0-1'**

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98013	Date Analyzed:	2013-01-11
Prep Batch:	83039	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH



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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs,U		<20.0	mg/Kg	5	4.00

**Sample: 318055 - Background Trench 2 2'**

Laboratory: Midland  
 Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
 QC Batch: 98013      Date Analyzed: 2013-01-11      Analyzed By: AH  
 Prep Batch: 83039      Sample Preparation: 2013-01-11      Prepared By: AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		1810	mg/Kg	5	4.00

**Sample: 318056 - Background Trench 2 4'**

Laboratory: Midland  
 Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
 QC Batch: 98013      Date Analyzed: 2013-01-11      Analyzed By: AH  
 Prep Batch: 83039      Sample Preparation: 2013-01-11      Prepared By: AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		3650	mg/Kg	5	4.00

**Sample: 318057 - Background Trench 2 6'**

Laboratory: Midland  
 Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
 QC Batch: 98013      Date Analyzed: 2013-01-11      Analyzed By: AH  
 Prep Batch: 83039      Sample Preparation: 2013-01-11      Prepared By: AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		1650	mg/Kg	5	4.00

Report Date: January 11, 2013  
114-6401534

Work Order: 13011002  
COG/Way South State Com. #1H TB

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Eddy Co., NM

**Sample: 318058 - Background Trench 2 8'**

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98017	Date Analyzed:	2013-01-11
Prep Batch:	83041	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1340	mg/Kg	5	4.00

**Sample: 318059 - Background Trench 2 10'**

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	98017	Date Analyzed:	2013-01-11
Prep Batch:	83041	Sample Preparation:	2013-01-11
		Prep Method:	N/A
		Analyzed By:	AH
		Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1330	mg/Kg	5	4.00

Report Date: January 11, 2013  
114-6401534

Work Order: 13011002  
COG/Way South State Com. #1H TB

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## Method Blanks

Method Blank (1)      QC Batch: 98013

QC Batch: 98013  
Prep Batch: 83039

Date Analyzed: 2013-01-11  
QC Preparation: 2013-01-11

Analyzed By: AH  
Prepared By: AH

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1)      QC Batch: 98017

QC Batch: 98017  
Prep Batch: 83041

Date Analyzed: 2013-01-11  
QC Preparation: 2013-01-11

Analyzed By: AH  
Prepared By: AH

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Report Date: January 11, 2013  
114-6401534

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## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 98013  
Prep Batch: 83039

Date Analyzed: 2013-01-11  
QC Preparation: 2013-01-11

Analyzed By: AH  
Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2430	mg/Kg	1	2500	<3.85	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2660	mg/Kg	1	2500	<3.85	106	85 - 115	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Laboratory Control Spike (LCS-1)

QC Batch: 98017  
Prep Batch: 83041

Date Analyzed: 2013-01-11  
QC Preparation: 2013-01-11

Analyzed By: AH  
Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2880	mg/Kg	1	2500	<3.85	115	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2570	mg/Kg	1	2500	<3.85	103	85 - 115	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Matrix Spike (MS-1) Spiked Sample: 318057

QC Batch: 98013  
Prep Batch: 83039

Date Analyzed: 2013-01-11  
QC Preparation: 2013-01-11

Analyzed By: AH  
Prepared By: AH

Report Date: January 11, 2013  
114-6401534

Work Order: 13011002  
COG/Way South State Com. #1H TB

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Eddy Co., NM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q*	Q*	4680	mg/Kg	5	2500	1650	121	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4400	mg/Kg	5	2500	1650	110	78.9 - 121	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 318065

QC Batch: 98017  
Prep Batch: 83041

Date Analyzed: 2013-01-11  
QC Preparation: 2013-01-11

Analyzed By: AH  
Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2640	mg/Kg	5	2500	133	100	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2690	mg/Kg	5	2500	133	102	78.9 - 121	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.



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114-6401534

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## Calibration Standards

### Standard (ICV-1)

QC Batch: 98013

Date Analyzed: 2013-01-11

Analyzed By: AH

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2013-01-11

### Standard (CCV-2)

QC Batch: 98013

Date Analyzed: 2013-01-11

Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2013-01-11

### Standard (ICV-1)

QC Batch: 98017

Date Analyzed: 2013-01-11

Analyzed By: AH

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-01-11

### Standard (CCV-1)

QC Batch: 98017

Date Analyzed: 2013-01-11

Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-01-11

Report Date: January 11, 2013  
114-6401534

Work Order: 13011002  
COG/Way South State Com. #1H TB

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Eddy Co., NM

## Appendix

### Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

### Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

### Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

### Attachments

Report Date: January 11, 2013  
114-6401534

Work Order: 13011002  
COG/Way South State Com. #1H TB

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Eddy Co., NM

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The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.

20010513011002

## Analysis Request of Chain of Custody Record



# TETRA TECH

**1910 N. Big Spring St.**

**Midland, Texas 79705**

(432) 682-4559 • Fax (432) 682-3946

PAGE: /

ANALYSIS REQUEST

Circle or Specify Method No.)

PAGE: 1 OF: 2

OF: 6

[illegible]

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

200105

## Analysis Request of Chain of Custody Record



# TETRA TECH

**1910 N. Big Spring St.  
Midland, Texas 79705  
(432) 682-4559 • Fax (432) 682-**

(432) 682-4559 • Fax (432) 682-3946

[illegible]

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.



# Certificate of Analysis Summary 658416

## COG Operating LLC, Artesia, NM

Project Name: Way South State Corn #001H (12/25/19)

Project Id:

Contact: Ike Tavaréz

Project Location: Eddy County, NM

Date Received in Lab: Thu 04.09.2020 10:50

Report Date: 04.10.2020 16:15

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658416-001	658416-002	658416-003	658416-004	658416-005	658416-006
	Field Id:	BH-1 1'	BH-1 2'	BH-1 3'	BH-1 4'	BH-1 5'	BH-1 6'
	Depth:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Matrix:						
	Sampled:	04.07.2020 00:00	04.07.2020 00:00	04.07.2020 00:00	04.07.2020 00:00	04.07.2020 00:00	04.07.2020 00:00
BTEX by EPA 8021B	Extracted:	04.09.2020 14:45	04.09.2020 14:45				
	Analyzed:	04.10.2020 05:56	04.10.2020 06:16				
	Units/RL:	mg/kg RL	mg/kg RL				
		<0.00201 0.00201	<0.00198 0.00198				
		<0.00201 0.00201	<0.00198 0.00198				
Chloride by EPA 300	Extracted:	04.09.2020 13:45	04.09.2020 13:45	04.09.2020 13:45	04.09.2020 13:45	04.09.2020 13:45	04.09.2020 13:45
	Analyzed:	04.09.2020 16:48	04.09.2020 16:55	04.09.2020 17:02	04.09.2020 17:09	04.09.2020 17:16	04.09.2020 17:43
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		6960 50.0	1810 100	4500 100	1130 50.4	1470 49.8	2890 99.8
TPH By SW8015 Mod	Extracted:	04.09.2020 14:00	04.09.2020 14:00				
	Analyzed:	04.09.2020 19:08	04.09.2020 19:26				
	Units/RL:	mg/kg RL	mg/kg RL				
		<50.0 50.0	<49.8 49.8				
		80.6 50.0	<49.8 49.8				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.8 49.8				
		80.6 50.0	<49.8 49.8				
Total TPH							

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer  
Project Manager





Certificate of Analysis Summary 658416  
COG Operating LLC, Artesia, NM

Project Name: Way South State Corn #001H (12/25/19)

Project Id:

Contact: Ike Tavaréz

Project Location: Eddy County, NM

Date Received in Lab: Thu 04.09.2020 10:50

Report Date: 04.10.2020 16:15

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658416-007				
	<i>Field Id:</i>	BH-1 7( Refusal)				
	<i>Depth:</i>					
	<i>Matrix:</i>	SOIL				
	<i>Sampled:</i>	04.07.2020 00:00				
Chloride by EPA 300	<i>Extracted:</i>	04.09.2020 13:45				
	<i>Analyzed:</i>	04.09.2020 17:50				
	<i>Units/RL:</i>	mg/kg RL				
Chloride		1840 100				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer  
Project Manager



# Analytical Report 658416

for

**COG Operating LLC**

**Project Manager: Ike Tavaréz**

**Way South State Corn #001H (12/25/19)**

**04.10.2020**

Collected By: Client



**1211 W. Florida Ave  
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)  
Xenco-Carlsbad (LELAP): Louisiana (05092)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.10.2020

Project Manager: **Ike Tavaréz**

**COG Operating LLC**

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **658416**

**Way South State Corn #001H (12/25/19)**

Project Address: Eddy County, NM

**Ike Tavaréz:**

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) 658416. 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. 658416 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

**Jessica Kramer**

Project Manager

*A Small Business and Minority Company*

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

**Sample Cross Reference 658416****COG Operating LLC, Artesia, NM**

Way South State Corn #001H (12/25/19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 1'	S	04.07.2020 00:00		658416-001
BH-1 2'	S	04.07.2020 00:00		658416-002
BH-1 3'	S	04.07.2020 00:00		658416-003
BH-1 4'	S	04.07.2020 00:00		658416-004
BH-1 5'	S	04.07.2020 00:00		658416-005
BH-1 6'	S	04.07.2020 00:00		658416-006
BH-1 7'( Refusal)	S	04.07.2020 00:00		658416-007



## CASE NARRATIVE

**Client Name:** COG Operating LLC

**Project Name:** Way South State Corn #001H (12/25/19)

Project ID:

Work Order Number(s): 658416

Report Date: 04.10.2020

Date Received: 04.09.2020

---

### Sample receipt non conformances and comments:

---

### Sample receipt non conformances and comments per sample:

None

### Analytical non conformances and comments:

Batch: LBA-3122631 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



# Certificate of Analytical Results 658416

## COG Operating LLC, Artesia, NM

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 1'**  
Lab Sample Id: 658416-001

Matrix: Soil  
Date Collected: 04.07.2020 00:00

Date Received: 04.09.2020 10:50

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.2020 13:45

Basis: Wet Weight

Seq Number: 3122605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>6960</b>	50.0	mg/kg	04.09.2020 16:48		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 04.09.2020 14:00

Basis: Wet Weight

Seq Number: 3122627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	04.09.2020 19:08	U	1
<b>Diesel Range Organics</b>	C10C28DRO	<b>80.6</b>	50.0	mg/kg	04.09.2020 19:08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.09.2020 19:08	U	1
<b>Total TPH</b>	PHC635	<b>80.6</b>	50.0	mg/kg	04.09.2020 19:08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-130	04.09.2020 19:08	
o-Terphenyl	84-15-1	83	%	70-130	04.09.2020 19:08	





# Certificate of Analytical Results 658416

## COG Operating LLC, Artesia, NM

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 1'**  
Lab Sample Id: 658416-001

Matrix: Soil  
Date Collected: 04.07.2020 00:00

Date Received: 04.09.2020 10:50

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 04.09.2020 14:45

Basis: Wet Weight

Seq Number: 3122631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.10.2020 05:56	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.10.2020 05:56	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.10.2020 05:56	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.10.2020 05:56	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.10.2020 05:56	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.10.2020 05:56	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.10.2020 05:56	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	130	%	70-130	04.10.2020 05:56		
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.10.2020 05:56		



# Certificate of Analytical Results 658416

## COG Operating LLC, Artesia, NM

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 2'**  
Lab Sample Id: 658416-002

Matrix: Soil  
Date Collected: 04.07.2020 00:00

Date Received: 04.09.2020 10:50

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.2020 13:45

Basis: Wet Weight

Seq Number: 3122605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1810	100	mg/kg	04.09.2020 16:55		20

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 04.09.2020 14:00

Basis: Wet Weight

Seq Number: 3122627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8	mg/kg	04.09.2020 19:26	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8	mg/kg	04.09.2020 19:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.09.2020 19:26	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.09.2020 19:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-130	04.09.2020 19:26	
o-Terphenyl	84-15-1	80	%	70-130	04.09.2020 19:26	



# Certificate of Analytical Results 658416

## COG Operating LLC, Artesia, NM

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 2'**  
Lab Sample Id: 658416-002

Matrix: Soil  
Date Collected: 04.07.2020 00:00

Date Received: 04.09.2020 10:50

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 04.09.2020 14:45

Basis: Wet Weight

Seq Number: 3122631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.10.2020 06:16	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.10.2020 06:16	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.10.2020 06:16	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.10.2020 06:16	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.10.2020 06:16	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.10.2020 06:16	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.10.2020 06:16	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	116	%	70-130	04.10.2020 06:16		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 06:16		

**Certificate of Analytical Results 658416****COG Operating LLC, Artesia, NM**

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 3'**

Matrix: Soil

Date Received: 04.09.2020 10:50

Lab Sample Id: 658416-003

Date Collected: 04.07.2020 00:00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.2020 13:45

Basis: Wet Weight

Seq Number: 3122605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4500	100	mg/kg	04.09.2020 17:02		20

**Certificate of Analytical Results 658416****COG Operating LLC, Artesia, NM**

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 4'**  
Lab Sample Id: 658416-004

Matrix: Soil  
Date Collected: 04.07.2020 00:00

Date Received: 04.09.2020 10:50

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.2020 13:45

Basis: Wet Weight

Seq Number: 3122605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1130	50.4	mg/kg	04.09.2020 17:09		10

**Certificate of Analytical Results 658416****COG Operating LLC, Artesia, NM**

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 5'**

Matrix: Soil

Date Received: 04.09.2020 10:50

Lab Sample Id: 658416-005

Date Collected: 04.07.2020 00:00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.2020 13:45

Basis: Wet Weight

Seq Number: 3122605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1470	49.8	mg/kg	04.09.2020 17:16		10



**Certificate of Analytical Results 658416****COG Operating LLC, Artesia, NM**

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 6'**  
Lab Sample Id: 658416-006

Matrix: Soil  
Date Collected: 04.07.2020 00:00

Date Received: 04.09.2020 10:50

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.2020 13:45

Basis: Wet Weight

Seq Number: 3122605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>2890</b>	99.8	mg/kg	04.09.2020 17:43		20

**Certificate of Analytical Results 658416****COG Operating LLC, Artesia, NM**

Way South State Corn #001H (12/25/19)

Sample Id: **BH-1 7'( Refusal)**

Matrix: Soil

Date Received: 04.09.2020 10:50

Lab Sample Id: 658416-007

Date Collected: 04.07.2020 00:00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.2020 13:45

Basis: Wet Weight

Seq Number: 3122605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1840	100	mg/kg	04.09.2020 17:50		20



## 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.      **ND** Not Detected.

**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



**COG Operating LLC**  
Way South State Corn #001H (12/25/19)

**Analytical Method: Chloride by EPA 300**

Seq Number: 3122605

MB Sample Id: 7700921-1-BLK

Matrix: Solid

LCS Sample Id: 7700921-1-BKS

Prep Method: E300P

Date Prep: 04.09.2020

LCSD Sample Id: 7700921-1-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	257	103	257	103	90-110	0	20	mg/kg	04.09.2020 15:33	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3122605

Parent Sample Id: 658411-001

Matrix: Soil

MS Sample Id: 658411-001 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658411-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	81.1	1260	1390	104	1390	104	90-110	0	20	mg/kg	04.09.2020 15:54	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3122605

Parent Sample Id: 658417-001

Matrix: Soil

MS Sample Id: 658417-001 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658417-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1550	1240	2870	106	2840	104	90-110	1	20	mg/kg	04.09.2020 17:30	

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3122627

MB Sample Id: 7700962-1-BLK

Matrix: Solid

LCS Sample Id: 7700962-1-BKS

Prep Method: SW8015P

Date Prep: 04.09.2020

LCSD Sample Id: 7700962-1-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	<50.0	1000	884	88	900	90	70-130	2	20	mg/kg	04.09.2020 17:21	
Diesel Range Organics	<50.0	1000	968	97	984	98	70-130	2	20	mg/kg	04.09.2020 17:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	76		95		95		70-130	%	04.09.2020 17:21
o-Terphenyl	81		87		92		70-130	%	04.09.2020 17:21

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3122627

Matrix: Solid

MB Sample Id: 7700962-1-BLK

Prep Method: SW8015P

Date Prep: 04.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.09.2020 17:02	

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



**COG Operating LLC**  
Way South State Corn #001H (12/25/19)

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3122627

Parent Sample Id: 658411-001

Matrix: Soil

MS Sample Id: 658411-001 S

Prep Method: SW8015P

Date Prep: 04.09.2020

MSD Sample Id: 658411-001 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	<49.9	997	831	83	817	82	70-130	2	20	mg/kg	04.09.2020 18:15	
Diesel Range Organics	<49.9	997	885	89	880	88	70-130	1	20	mg/kg	04.09.2020 18:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		91		70-130	%	04.09.2020 18:15
o-Terphenyl	91		85		70-130	%	04.09.2020 18:15

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3122631

MB Sample Id: 7701025-1-BLK

Matrix: Solid

LCS Sample Id: 7701025-1-BKS

Prep Method: SW5030B

Date Prep: 04.09.2020

LCSD Sample Id: 7701025-1-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	0.0823	82	0.0842	84	70-130	2	35	mg/kg	04.10.2020 01:52	
Toluene	<0.00200	0.100	0.102	102	0.103	103	70-130	1	35	mg/kg	04.10.2020 01:52	
Ethylbenzene	<0.00200	0.100	0.108	108	0.109	109	70-130	1	35	mg/kg	04.10.2020 01:52	
m,p-Xylenes	<0.00400	0.200	0.227	114	0.227	114	70-130	0	35	mg/kg	04.10.2020 01:52	
o-Xylene	<0.00200	0.100	0.116	116	0.116	116	70-130	0	35	mg/kg	04.10.2020 01:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		98		97		70-130	%	04.10.2020 01:52
4-Bromofluorobenzene	115		123		122		70-130	%	04.10.2020 01:52

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3122631

Parent Sample Id: 658411-001

Matrix: Soil

MS Sample Id: 658411-001 S

Prep Method: SW5030B

Date Prep: 04.09.2020

MSD Sample Id: 658411-001 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	0.100	0.0754	75	0.0700	70	70-130	7	35	mg/kg	04.10.2020 02:33	
Toluene	<0.00200	0.100	0.0890	89	0.0799	80	70-130	11	35	mg/kg	04.10.2020 02:33	
Ethylbenzene	<0.00200	0.100	0.0915	92	0.0801	80	70-130	13	35	mg/kg	04.10.2020 02:33	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.165	83	70-130	14	35	mg/kg	04.10.2020 02:33	
o-Xylene	<0.00200	0.100	0.0945	95	0.0826	83	70-130	13	35	mg/kg	04.10.2020 02:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		70-130	%	04.10.2020 02:33
4-Bromofluorobenzene	120		115		70-130	%	04.10.2020 02:33

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



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

10504114

Client Name:		COG		Site Manager:		Ike Tavaraz itavaraz@concho.com Robert Grubbs Jr rgrubbs@concho.com					
Project Name:		Way South State Com #001H (12/25/19)		Project #:							
Project Location: (county, state)		Eddy County, NM		Project #:							
Invoice to:		COG		Sampler Signature:		Robert Grubbs Jr					
Receiving Laboratory:		Xenco		Sampler Signature:		Robert Grubbs Jr					
Comments:											
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)				
		YEAR: 2020	DATE					TIME			
	BH-1 1'		4/7/2020			X	1				
	BH-1 2'		4/7/2020			X	1				
	BH-1 3'		4/7/2020			X	1				
	BH-1 4'		4/7/2020			X	1				
	BH-1 5'		4/7/2020			X	1				
	BH-1 6'		4/7/2020			X	1				
	BH-1 7' (Refusal)		4/7/2020			X	1				
Relinquished by:		Date:		Time:		Received by:		Date:		Time:	
Relinquished by:		Date:		Time:		Received by:		Date:		Time:	
Relinquished by:		Date:		Time:		Received by:		Date:		Time:	

LAB USE ONLY		REMARKS:	
X	RUSH: Same Day 24 hr 48 hr 72 hr		
	Rush Charges Authorized		
	Special Report Limits or TRRP Report		

LAB USE ONLY		REMARKS:	
1.7114	Sample Temperature		

(Circle) HAND DELIVERED FEDEX UPS Tracking #:	
---	--

ANALYSIS REQUEST (Circle or Specify Method No.)	
BTX 8021B	
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	
EC Electrical Conductivity	
Hold	

ORIGINAL COPY



# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 04.09.2020 10.50.00 AM

Work Order #: 658416

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

Temperature Measuring device used : R9

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

*Brianna Teel*

Brianna Teel

Date: 04.09.2020

Checklist reviewed by:

*Jessica Kramer*

Jessica Kramer

Date: 04.09.2020

## Certificate of Analysis Summary 681131

COG Operating LLC, Artesia, NM

Project Name: Way South State Com #001H (12/25/19)

Project Id:

Date Received in Lab: Tue 12.15.2020 14:25

Contact: Ike Tavaréz

Report Date: 12.16.2020 14:39

Project Location: Eddy County, New Mexico

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	681131-001	681131-002	681131-003	681131-004	681131-005	681131-006
	<i>Field Id:</i>	Bore Hole-1 0'-1'	Bore Hole-1 3'-4'	Bore Hole-1 5'-6'	Bore Hole-1 7'-8'	Bore Hole-1 9'-10'	Bore Hole-1 14'-15'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.14.2020 00:00	12.14.2020 00:00	12.14.2020 00:00	12.14.2020 00:00	12.14.2020 00:00	12.14.2020 00:00
Chloride by EPA 300	<i>Extracted:</i>	12.15.2020 17:05	12.15.2020 17:05	12.15.2020 17:05	12.15.2020 17:05	12.15.2020 17:05	12.15.2020 17:05
	<i>Analyzed:</i>	12.15.2020 23:20	12.15.2020 23:25	12.15.2020 23:30	12.15.2020 23:35	12.15.2020 23:41	12.15.2020 23:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		859 24.8	887 50.2	1240 24.9	1450 50.0	2250 50.0	3880 100

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



## Certificate of Analysis Summary 681131

COG Operating LLC, Artesia, NM

Project Name: Way South State Com #001H (12/25/19)

Project Id:

Date Received in Lab: Tue 12.15.2020 14:25

Contact: Ike Tavaréz

Report Date: 12.16.2020 14:39

Project Location: Eddy County, New Mexico

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	681131-007					
	Field Id:	Bore Hole-1 19'-20'					
	Depth:						
	Matrix:	SOIL					
	Sampled:	12.14.2020 00:00					
Chloride by EPA 300	Extracted:	12.15.2020 17:05					
	Analyzed:	12.15.2020 23:51					
	Units/RL:	mg/kg RL					
Chloride		1490 50.4					

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



# Analytical Report 681131

for

**COG Operating LLC**

**Project Manager: Ike Tavaréz**

**Way South State Com #001H (12/25/19)**

**12.16.2020**

Collected By: Client



**1211 W. Florida Ave  
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)  
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)  
Xenco-Carlsbad (LELAP): Louisiana (05092)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)  
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.16.2020

Project Manager: **Ike Tavaréz**

**COG Operating LLC**

2407 Pecos Avenue

Artesia, NM 88210

Reference: Eurofins Xenco, LLC Report No(s): **681131**

**Way South State Com #001H (12/25/19)**

Project Address: Eddy County, New Mexico

**Ike Tavaréz:**

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 Eurofins Xenco, LLC Report Number(s) 681131. 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 Eurofins Xenco, LLC. 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. 681131 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

---

**Jessica Kramer**

Project Manager

*A Small Business and Minority Company*

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



**Sample Cross Reference 681131****COG Operating LLC, Artesia, NM**

Way South State Com #001H (12/25/19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Bore Hole-1 0-1'	S	12.14.2020 00:00		681131-001
Bore Hole-1 3'-4'	S	12.14.2020 00:00		681131-002
Bore Hole-1 5'-6'	S	12.14.2020 00:00		681131-003
Bore Hole-1 7'-8'	S	12.14.2020 00:00		681131-004
Bore Hole-1 9'-10'	S	12.14.2020 00:00		681131-005
Bore Hole-1 14'-15'	S	12.14.2020 00:00		681131-006
Bore Hole-1 19'-20'	S	12.14.2020 00:00		681131-007



## CASE NARRATIVE

**Client Name:** *COG Operating LLC*

**Project Name:** *Way South State Com #001H (12/25/19)*

Project ID:

Work Order Number(s): *681131*

Report Date: *12.16.2020*

Date Received: *12.15.2020*

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**Sample receipt non conformances and comments:**

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**Sample receipt non conformances and comments per sample:**

None



Certificate of Analytical Results 681131

COG Operating LLC, Artesia, NM  
Way South State Com #001H (12/25/19)

Sample Id: **Bore Hole-1 0-1'** Matrix: Soil Date Received:12.15.2020 14:25  
Lab Sample Id: 681131-001 Date Collected: 12.14.2020 00:00  
  
Analytical Method: Chloride by EPA 300 Prep Method: E300P  
Tech: CHE  
Analyst: CHE Date Prep: 12.15.2020 17:05 % Moisture:  
Seq Number: 3145041 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	859	24.8	mg/kg	12.15.2020 23:20		5



Certificate of Analytical Results 681131

COG Operating LLC, Artesia, NM  
Way South State Com #001H (12/25/19)

Sample Id: **Bore Hole-1 3'-4'** Matrix: Soil Date Received: 12.15.2020 14:25  
Lab Sample Id: 681131-002 Date Collected: 12.14.2020 00:00  
Analytical Method: Chloride by EPA 300 Prep Method: E300P  
Tech: CHE  
Analyst: CHE Date Prep: 12.15.2020 17:05 % Moisture:  
Seq Number: 3145041 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	887	50.2	mg/kg	12.15.2020 23:25		10



Certificate of Analytical Results 681131

COG Operating LLC, Artesia, NM  
Way South State Com #001H (12/25/19)

Sample Id: **Bore Hole-1 5'-6'** Matrix: Soil Date Received:12.15.2020 14:25  
Lab Sample Id: 681131-003 Date Collected: 12.14.2020 00:00  
  
Analytical Method: Chloride by EPA 300 Prep Method: E300P  
Tech: CHE  
Analyst: CHE Date Prep: 12.15.2020 17:05 % Moisture:  
Seq Number: 3145041 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1240	24.9	mg/kg	12.15.2020 23:30		5





Certificate of Analytical Results 681131

COG Operating LLC, Artesia, NM  
Way South State Com #001H (12/25/19)

Sample Id: **Bore Hole-1 7'-8'** Matrix: Soil Date Received: 12.15.2020 14:25  
Lab Sample Id: 681131-004 Date Collected: 12.14.2020 00:00  
Analytical Method: Chloride by EPA 300 Prep Method: E300P  
Tech: CHE  
Analyst: CHE Date Prep: 12.15.2020 17:05 % Moisture:  
Seq Number: 3145041 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1450	50.0	mg/kg	12.15.2020 23:35		10



Certificate of Analytical Results 681131

COG Operating LLC, Artesia, NM  
Way South State Com #001H (12/25/19)

Sample Id: **Bore Hole-1 9'-10'** Matrix: Soil Date Received: 12.15.2020 14:25  
Lab Sample Id: 681131-005 Date Collected: 12.14.2020 00:00  
Analytical Method: Chloride by EPA 300 Prep Method: E300P  
Tech: CHE  
Analyst: CHE Date Prep: 12.15.2020 17:05 % Moisture:  
Seq Number: 3145041 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2250	50.0	mg/kg	12.15.2020 23:41		10



Certificate of Analytical Results 681131

COG Operating LLC, Artesia, NM  
Way South State Com #001H (12/25/19)

Sample Id: **Bore Hole-1 14'-15'**  
Lab Sample Id: 681131-006

Matrix: Soil  
Date Collected: 12.14.2020 00:00

Date Received: 12.15.2020 14:25

Analytical Method: Chloride by EPA 300  
Tech: CHE  
Analyst: CHE  
Seq Number: 3145041

Prep Method: E300P

Date Prep: 12.15.2020 17:05

% Moisture:  
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3880	100	mg/kg	12.15.2020 23:46		20



Certificate of Analytical Results 681131

COG Operating LLC, Artesia, NM  
Way South State Com #001H (12/25/19)

Sample Id: **Bore Hole-1 19'-20'**

Lab Sample Id: 681131-007

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3145041

Matrix: Soil

Date Collected: 12.14.2020 00:00

Date Prep: 12.15.2020 17:05

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Received:12.15.2020 14:25

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1490	50.4	mg/kg	12.15.2020 23:51		10

## 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.      **ND** Not Detected.

**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





**COG Operating LLC**  
Way South State Com #001H (12/25/19)

**Analytical Method: Chloride by EPA 300**

Seq Number: 3145041

MB Sample Id: 7717198-1-BLK

Matrix: Solid

LCS Sample Id: 7717198-1-BKS

Prep Method: E300P

Date Prep: 12.15.2020

LCSD Sample Id: 7717198-1-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	254	102	254	102	90-110	0	20	mg/kg	12.15.2020 21:20	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3145041

Parent Sample Id: 680923-011

Matrix: Soil

MS Sample Id: 680923-011 S

Prep Method: E300P

Date Prep: 12.15.2020

MSD Sample Id: 680923-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	485	2500	3320	113	3270	111	90-110	2	20	mg/kg	12.15.2020 21:36	X

**Analytical Method: Chloride by EPA 300**

Seq Number: 3145041

Parent Sample Id: 680935-001

Matrix: Soil

MS Sample Id: 680935-001 S

Prep Method: E300P

Date Prep: 12.15.2020

MSD Sample Id: 680935-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	359	1240	1710	109	1700	108	90-110	1	20	mg/kg	12.15.2020 22:49	

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



08131

ORIGINAL COPY

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 12.15.2020 02.25.00 PM

Work Order #: 681131

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-2.6
#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: 12.15.2020

Checklist reviewed by:



Jessica Kramer

Date: 12.16.2020

## **APPENDIX F**

### **Photographic Documentation**





TETRA TECH, INC. PROJECT NO. 212C-MD-02839	DESCRIPTION	View west. View of site signage.	1
	SITE NAME	Way South State Com #001H Release	2/6/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-02839	DESCRIPTION	View northwest. View of pad conditions and current production equipment present on-site.	2
	SITE NAME	Way South State Com #001H Release	12/28/2022



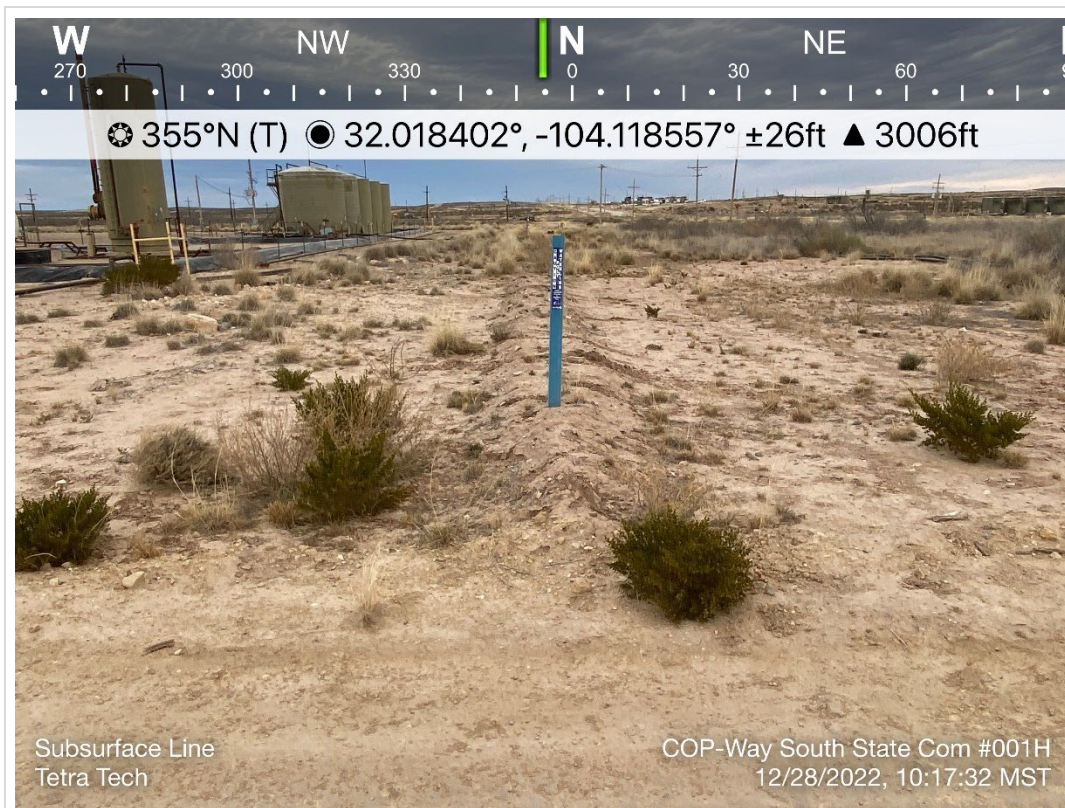


TETRA TECH, INC. PROJECT NO. 212C-MD--02839	DESCRIPTION	View northwest. View of approximate release extent. Production equipment present.	3
	SITE NAME	Way South State Com #001H Release	12/28/2022

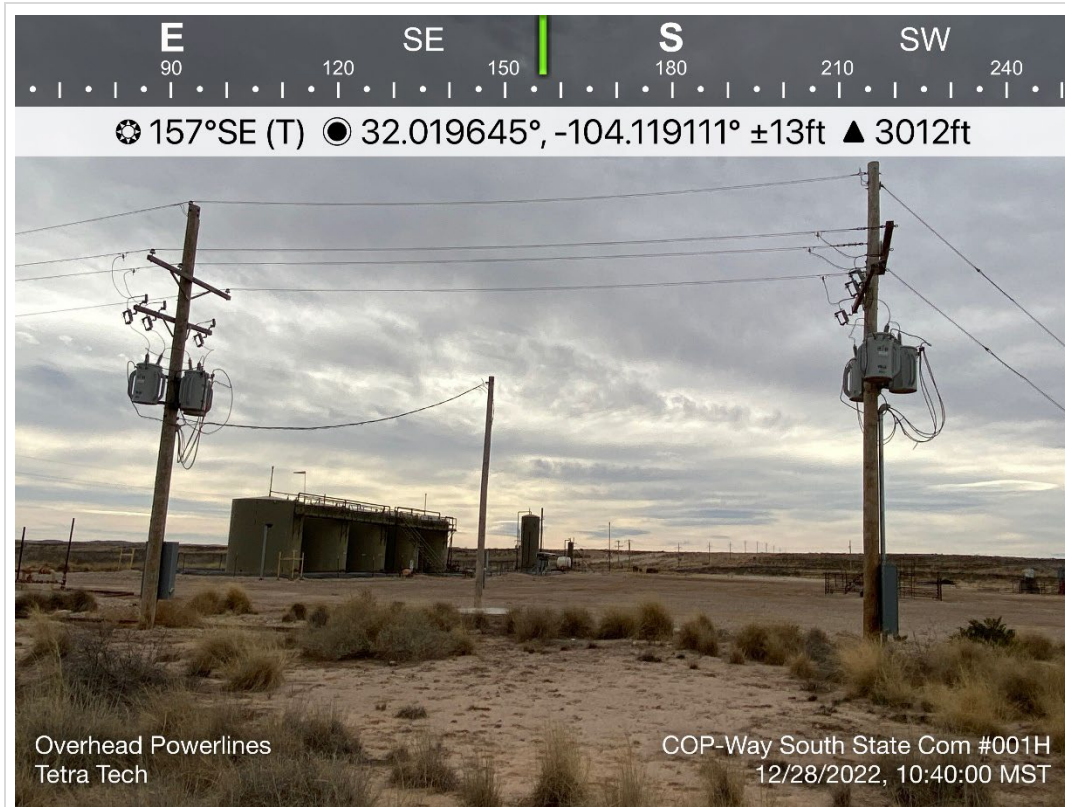


TETRA TECH, INC. PROJECT NO. 212C-MD--02839	DESCRIPTION	View east. View of pad conditions. Production equipment present.	4
	SITE NAME	Way South State Com #001H Release	12/28/2022



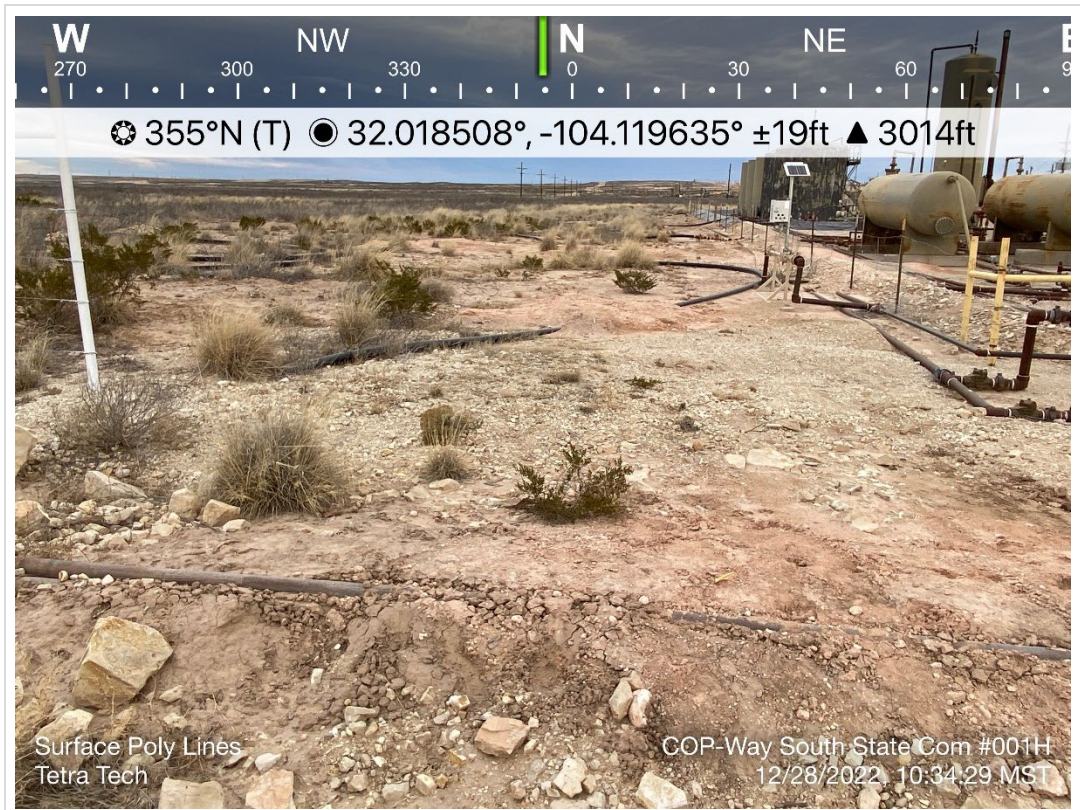


TETRA TECH, INC. PROJECT NO. 212C-MD--02839	DESCRIPTION	View east. View of gate and surface poly line.	5
	SITE NAME	Way South State Com #001H Release	12/28/2022

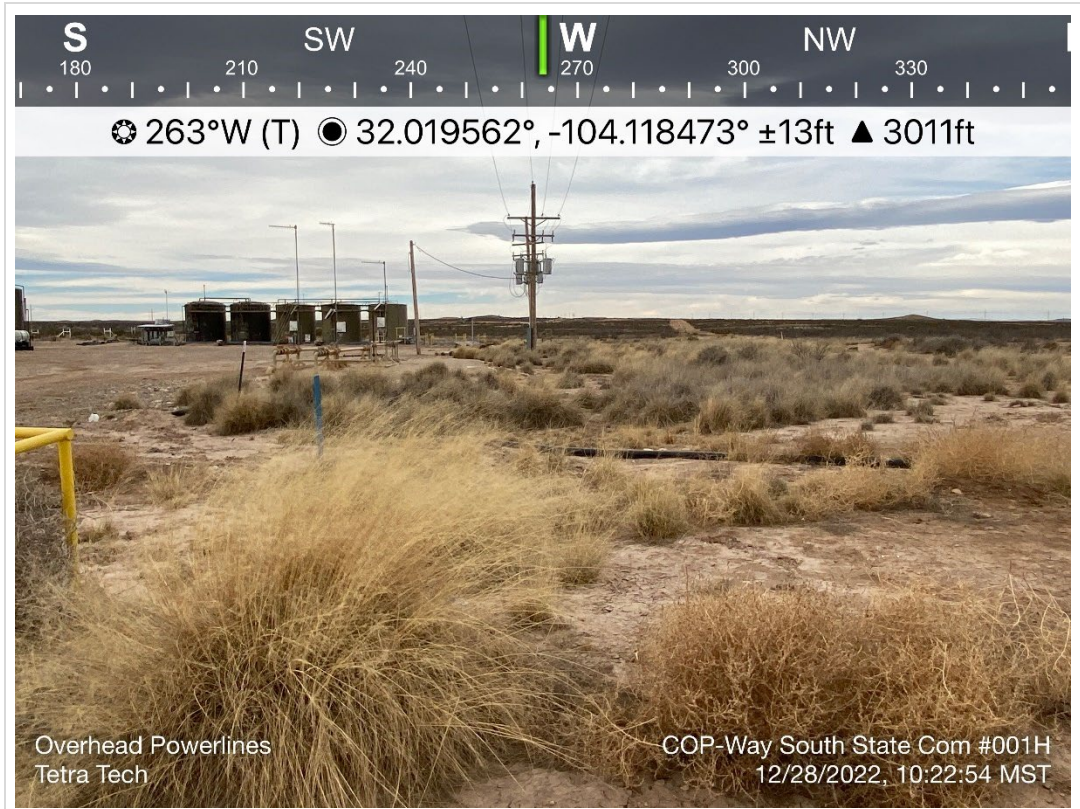


TETRA TECH, INC. PROJECT NO. 212C-MD--02839	DESCRIPTION	View southeast. View of overhead power lines and view of production equipment.	6
	SITE NAME	Way South State Com #001H Release	12/28/2022





TETRA TECH, INC. PROJECT NO. 212C-MD--02839	DESCRIPTION	View north. View of production equipment and surface poly lines.	7
	SITE NAME	Way South State Com #001H Release	12/28/2022



TETRA TECH, INC. PROJECT NO. 212C-MD--02839	DESCRIPTION	View west. View of over head powerlines, production equipment and surface polylines.	8
	SITE NAME	Way South State Com #001H Release	12/28/2022

## **APPENDIX G**

### **Seed Mixture Details**

**NMSLO Seed Mix****Loamy (L)****LOAMY (L) SITES SEED MIXTURE:**

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
<b>Grasses:</b>			
Black grama	VNS, Southern	1.0	D
Blue grama	Lovington	1.0	D
Sideoats grama	Vaughn, El Reno	4.0	F
Sand dropseed	VNS, Southern	2.0	S
Alkali sacaton	VNS, Southern	1.0	
Little bluestem	Cimarron, Pastura	1.5	F
<b>Forbs:</b>			
Firewheel ( <i>Gaillardia</i> )	VNS, Southern	1.0	D
<b>Shrubs:</b>			
Fourwing saltbush	Marana, Santa Rita	1.0	D
Common winterfat	VNS, Southern	0.5	F
<b>Total PLS/acre</b>		<b>18.0</b>	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box

VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at <http://plants.usda.gov>.





**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 255702

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 255702
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation plan approved. Submit a report via the OCD permitting portal by 6/21/2024.	2/16/2024