Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NAB1924840999
District RP	2RP-5609
Facility ID	
Application ID	

Remediation Plan

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

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

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

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Ike Tavarez Title: Program Manager, Remediation

Signature: Date: 1/24/2022

email: Ike.Tavarez@conocophillips.com Telephone: 432-685-2573

OCD Only

Received by: Chad Hensley Date: 02/09/2022

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

Signature: Chad Hensley Date: 02/09/2022

TETRA TECH

January 24, 2022

District Supervisor
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Release Characterization and Remediation Work Plan
ConocoPhillips
Heritage Concho
Patron 23 Federal 4H Release
Unit Letter K, Section 14, Township 25 South, Range 29 East
Eddy County, New Mexico
2RP-5609
Incident ID# NAB1924840999

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess a Heritage Concho release and subsequent remedial actions taken at the Patron 23 Federal 4H. The release footprint is located in Public Land Survey System (PLSS) Unit Letter K, Section 14, Township 25 South, Range 29 East, in Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.12651°, -103.95606°, as shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico Oil Conservation District (NMOCD) C-141 Initial Report, the release was discovered on August 8, 2019. The C-141 reports that the release was caused by high pressure within a flowline resulting in a rupture of the flowline. Approximately 250 barrels (bbls) of produced water were released, of which approximately 10 bbls of produced water were recovered. The release was within pastureland. The New Mexico Oil Conservation District (NMOCD) approved the initial C-141 on August 13, 2019 and subsequently assigned the release the remediation permit (RP) number 2RP-5609. Incident ID NAB1924840999. The initial C-141 form is included in Appendix A.

SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, playa lakes, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). There are stream bodies located less than ½-mile from the release location. The Site is in an area of low karst potential.

There are no water wells listed in the New Mexico Office of the State Engineer (NMOSE database located within approximately ½ mile (800 meters) of the site. According to data from one (1) water well listed in the NMOSE database within approximately 1.24 miles (2,000 meters) of the site, the depth to groundwater is 85 feet below ground surface (bgs).

The remediation action levels proposed for the site are largely dependent upon depth to groundwater. As such, the NMOCD focuses upon depth to water estimation. Thus, 19.15.11(A)(2) NMAC allows for various

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means of determining depth to groundwater. For this release, as the available water level information was from wells further than ½ mile away from the site, Heritage Concho drilled a boring as a means for determining depth to groundwater in the vicinity of the NAB1924840999 release area.

One boring (BH-1) drilled as a portion of the release characterization drilled within roughly a ½-mile radius of the release footprint. A review of the associated boring log indicates that boring BH-1 does not define depth to groundwater but was dry to a depth of 105 feet bgs. The borehole was plugged with 3/8-inch bentonite chips on February 24, 2021. The borehole coordinates are 32.122593°, -103.949262°. Thus, based on this data, ConocoPhillips proposes to use the least stringent remediation limits (>100 feet) listed in Table I of 19.15.29.12 NMAC. The boring log from investigation is included in Appendix B. The remainder of the site characterization data is also included in Appendix B.

REGULATORY FRAMEWORK

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

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

Constituent	Site RRALs
Chloride	20,000 mg/kg
TPH	2,500 mg/kg
BTEX	50 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 feet bgs) outside of active oil and gas operations are as follows:

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

INITIAL ASSESSMENT AND ANALYTICAL RESULTS

On August 20, 2020, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of nine auger holes (AH-1 through AH-9) were installed in the release footprint to total depths ranging from 0-1 foot to 4.5 feet below surface. Deeper samples could not be collected, utilizing the hand auger, due to a dense formation in the area. Also, ten (10) horizontal delineation samples were collected (H-1 through H-10). Soil samples were collected and submitted to Eurofins Xenco Laboratory in Midland, Texas (Xenco) to be analyzed for TPH by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sample locations are shown on Figure 3.

On September 3, 2020, Tetra Tech personnel were onsite to further evaluate and sample the release area. A total of seven trenches (T-1 through T-7) were excavated and samples collected between 0 to 12 feet maximum depth below the ground surface. Soil samples were collected and submitted to Xenco for chloride analysis by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.

Analytical results from the August and September 2020 assessment activities are presented in Table 1. Analytical results indicate samples from locations AH-1 through AH-7 and AH-9, as well as trenched locations T-1 through T-7, did not exceed site RRAL for chlorides (600 mg/kg) but did exceed site reclamation limits for chloride (20,000 mg/kg) in the top 4 feet. Laboratory analytical results from horizontal delineation samples did not exceed site RRALs or reclamation limits for chlorides.

REMEDIATION WORK PLAN AND NMOCD REJECTION

A Work Plan summarizing the assessment results and proposed remedial actions was prepared by Tetra Tech on behalf of ConocoPhillips and application [11098] was submitted to NMOCD for review on November 5, 2020. The report described the assessment activities and results. The (02/18/2021, C-141) application [11098] was rejected by NMOCD. The operator was emailed with details of this event. The submittal was rejected via email by Chad Hensley on February 18, 2021.

Reasons for denial included in the email include:

"If you feel the depth to groundwater is >100', a shallow borehole can be drilled to 105' allowing for verification of the depth. If water is not visible after reaching bottom-hole and waiting 72 hours, sample points would be allowed for remediation. We would just need a copy of the driller's log.

Additional horizontal delineation samples will need to be established on the boundaries at AH-1, AH-2, AH-3, and AH-4. Preferably along the lease road."

The November 5, 2020 Work Plan and subsequent NMOCD email rejection are included in this report as Appendix C.

ADDITIONAL SITE DELINEATION AND SAMPLING RESULTS

As noted in the previous Site Characterization section, a single borehole was drilled to establish depth to water, per NMOCD direction. The boring was drilled within roughly a ½-mile radius of the release footprint. A review of the associated boring log indicates that boring BH-1 does not establish depth to groundwater but was dry to a depth of 105 feet bgs. The borehole was plugged with 3/8-inch bentonite chips on February 24, 2021. The borehole coordinates are 32.122593°, -103.949262°.

On December 27, 2021, Tetra Tech personnel were onsite to further evaluate and install additional auger holes to delineate the release west of the dirt road. A total of three additional hand auger sampling locations were installed (H-11 through H-13) to a bottom depth of 4 feet below the ground surface. Soil samples were collected and submitted to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for TPH by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by method SM4500Cl-B. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The sample locations are shown on Figure 3.

Results for laboratory analytical tests performed on samples collected in December 2021 are presented in Table 2. Analytical results on samples collected from H-11 through H-13 did not exceed site established RRALs or site reclamation limits. Photographic documentation from the December 2021 site assessment is presented in Appendix E.

REMEDIATION WORK PLAN

Based on the analytical results, ConocoPhillips proposes to remove the remaining impacted material as shown in Figure 4. Impacted soils will be excavated using heavy equipment (backhoes, hoe rams, and track hoes) to a maximum total depth of 4 feet below the surrounding surface or until a representative sample from the walls and bottom of the excavation is below the RRALs. Any area containing pressurized lines will be hand-dug to a depth of 3 feet or the maximum extent practicable and heavy equipment will come no more than 3 feet from any pressurized lines.

Excavated soils will be transported offsite and disposed of at an NMOCD-approved or permitted facility. Confirmation floor and sidewall samples will be collected for verification of remedial activities, and analyzed for TPH, BTEX, and chloride. Once the sample results are received, the excavation will then be backfilled with clean material to surface grade. The estimated volume of material to be remediated is 1,575 cubic yards.

ALTERNATIVE CONFIRMATION SAMPLING PLAN

In accordance with 19.15.29.12(D)(1)(b) NMAC, ConocoPhillips proposes the following alternative confirmation sampling plan to adhere with NMOCD requirements. The proposed confirmation sample locations are depicted in Figure 5. Twenty-one (21) confirmation floor samples and thirty-three (33) confirmation sidewall samples are proposed for verification of remedial activities. The proposed excavation encompasses an area of approximately 10,540 square feet.

These confirmation sidewall and floor samples will be representative of no more than approximately 500 square feet of excavated area. Confirmation samples will be sent to an accredited laboratory for analysis of TPH (Method 8015 modified), BTEX (Method 8260B), and chlorides (USEPA Method 300.0).

SITE RECLAMATION AND RESTORATION PLAN

The backfilled areas will be seeded in Spring 2022 (first favorable growing season) to aid in revegetation. Based on the soils at the site, the New Mexico State Land Office (NMSLO) Sandy (S) Sites Seed Mixture will be used for seeding and will be planted in the amount specified in the pounds pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled.

Site inspections will be performed to assess the revegetation progress and evaluate the site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details and corresponding pounds pure live seed per acre are included in Appendix F.

CONCLUSION

ConocoPhillips proposes to begin remediation activities at the Site within 120 days of the date of NMOCD approval of this submittal. Upon completion of the proposed work, a final closure report detailing the remediation activities and the results of the confirmation sampling will be submitted to NMOCD. If you have any questions concerning the site characterization or the additional soil assessment activities for the Site, please call me at (512) 739-7874.

Sincerely,
Tetra Tech, Inc.

Samantha K. Abbott, P.G.
Project Manager

cc:
Mr. Ike Tavarez, RMR – ConocoPhillips

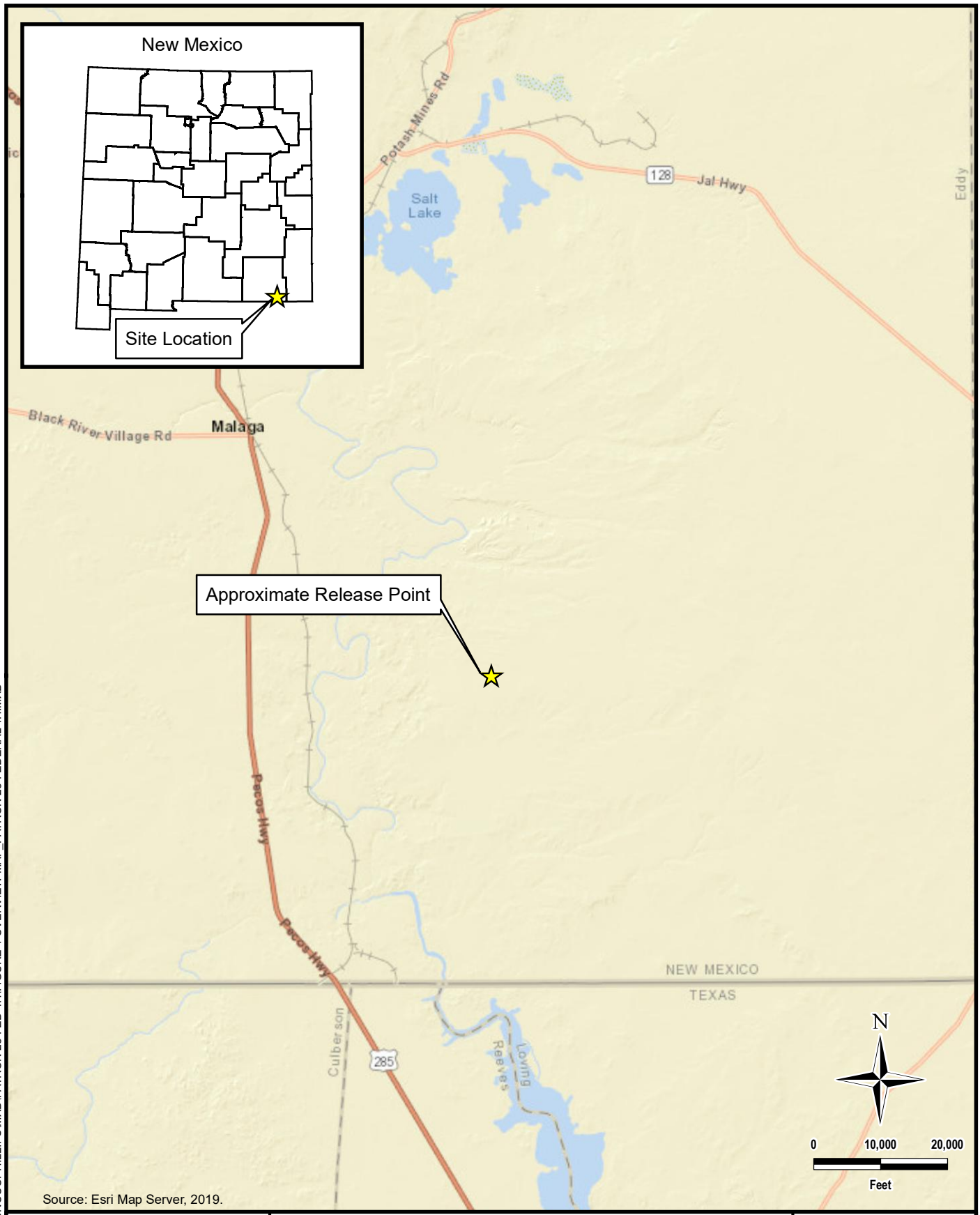
LIST OF ATTACHMENTS

Figures:

Tables:

Appendices:

FIGURES



DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\PATRON 23 FED 4H\FIGURE 1 OVERVIEW MAP_PATRON 23 FEDERAL 4H.MXD

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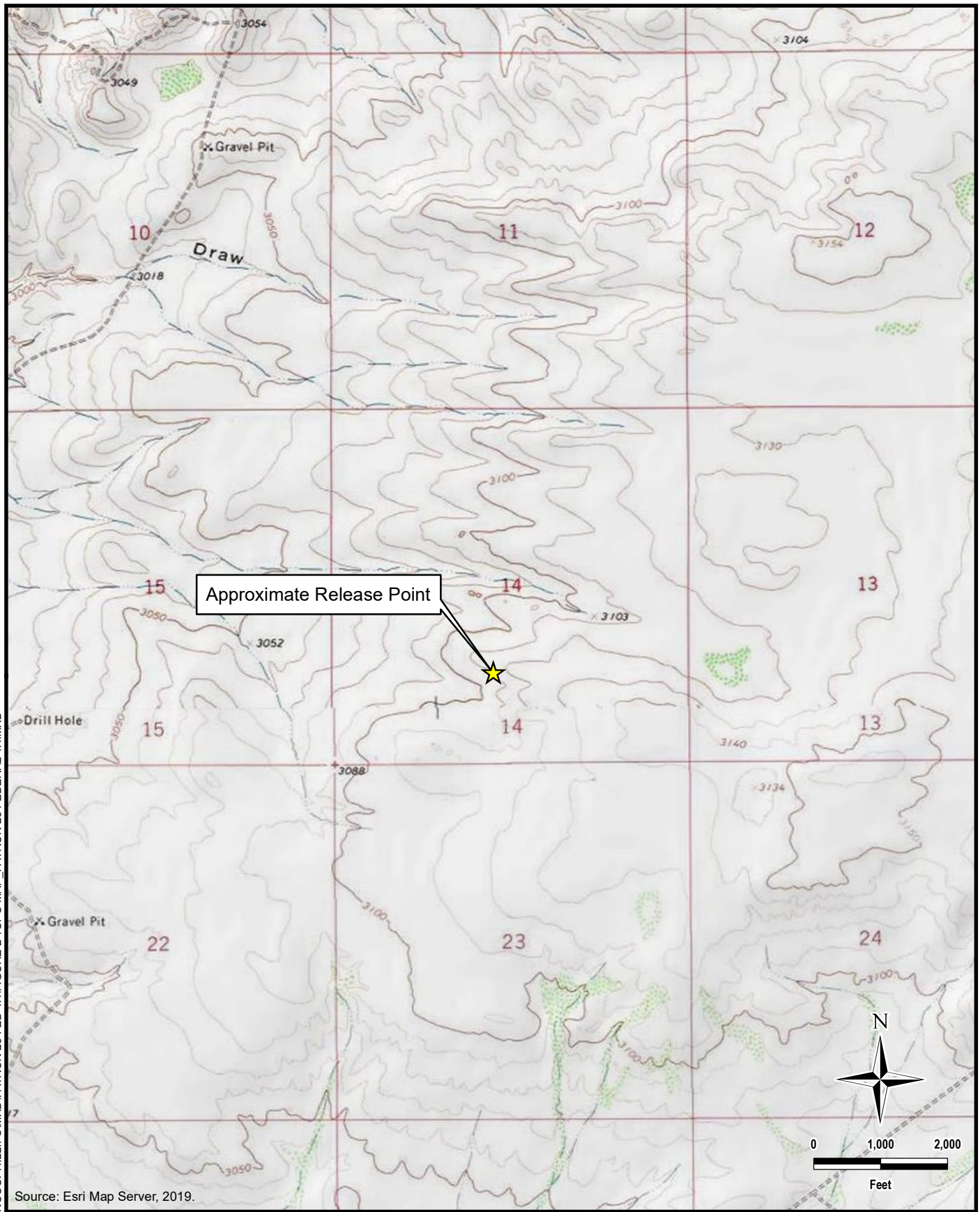
CONOCOPHILLIPS

2RP-5609 / NAB1924840999
(32.126086°, -103.955787°)
EDDY COUNTY, NEW MEXICO

PATRON 23 FEDERAL #4H FLOWLINE RELEASE
OVERVIEW MAP

PROJECT NO.:	212C-MD-02646
DATE:	JANUARY 19, 2022
DESIGNED BY:	AAM

Figure No.
1



Source: Esri Map Server, 2019.

DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\PATRON 23 FED 4H\FIGURE 2 TOPO MAP_PATRON 23 FEDERAL 4H.MXD

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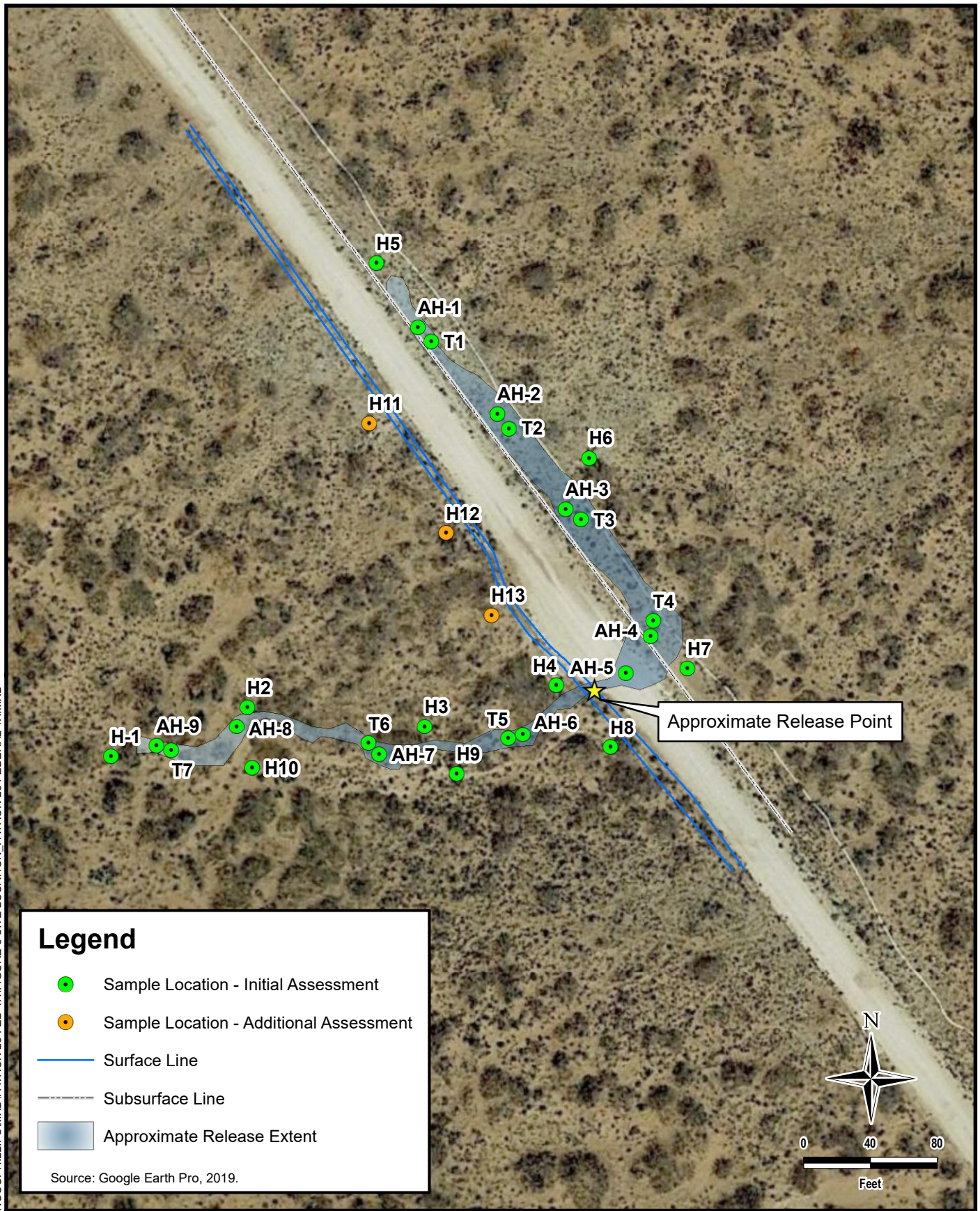
CONOCOPHILLIPS

2RP-5609 / NAB1924840999
(32.126086°, -103.955787°)
EDDY COUNTY, NEW MEXICO

PATRON 23 FEDERAL #4H FLOWLINE RELEASE
TOPOGRAPHIC MAP

PROJECT NO.:	212C-MD-02646
DATE:	JANUARY 19, 2022
DESIGNED BY:	IM

Figure No.
2



DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\PATRON 23 FED 4H\FIGURE 3 SITE LOCATION_PATRON 23 FEDERAL 4H.MXD

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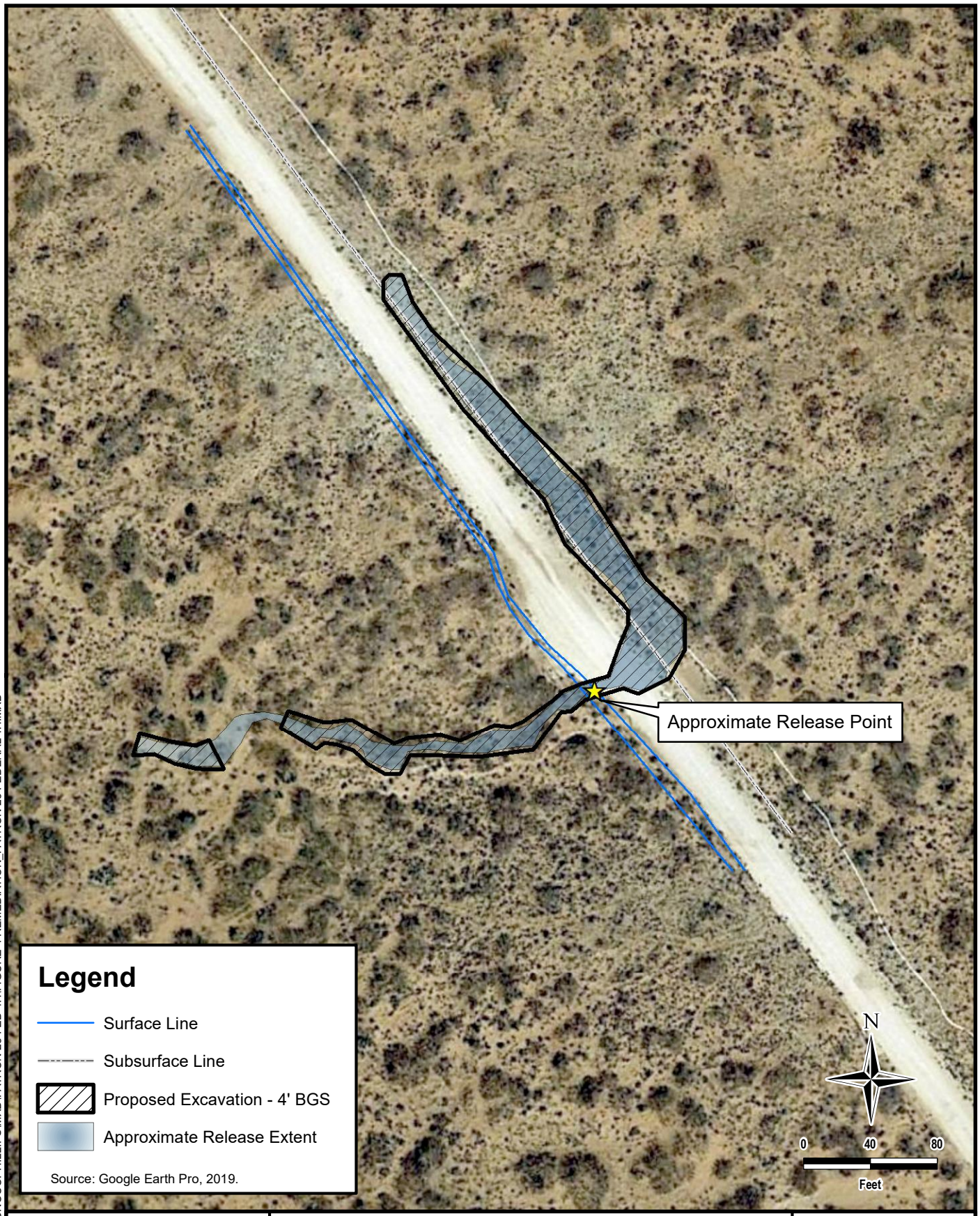
CONOCOPHILLIPS

2RP-5609 / NAB1924840999
(32.126086°, -103.955787°)
EDDY COUNTY, NEW MEXICO

PATRON 23 FEDERAL #4H FLOWLINE RELEASE
APPROXIMATE RELEASE EXTENT AND ASSESSMENT MAP

PROJECT NO.:	212C-MD-02646
DATE:	JANUARY 21, 2022
DESIGNED BY:	AAM

Figure No.
3



DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\PATRON 23 FED 4H\FIGURE 4 REMEDIATION_PATRON 23 FEDERAL 4H.MXD

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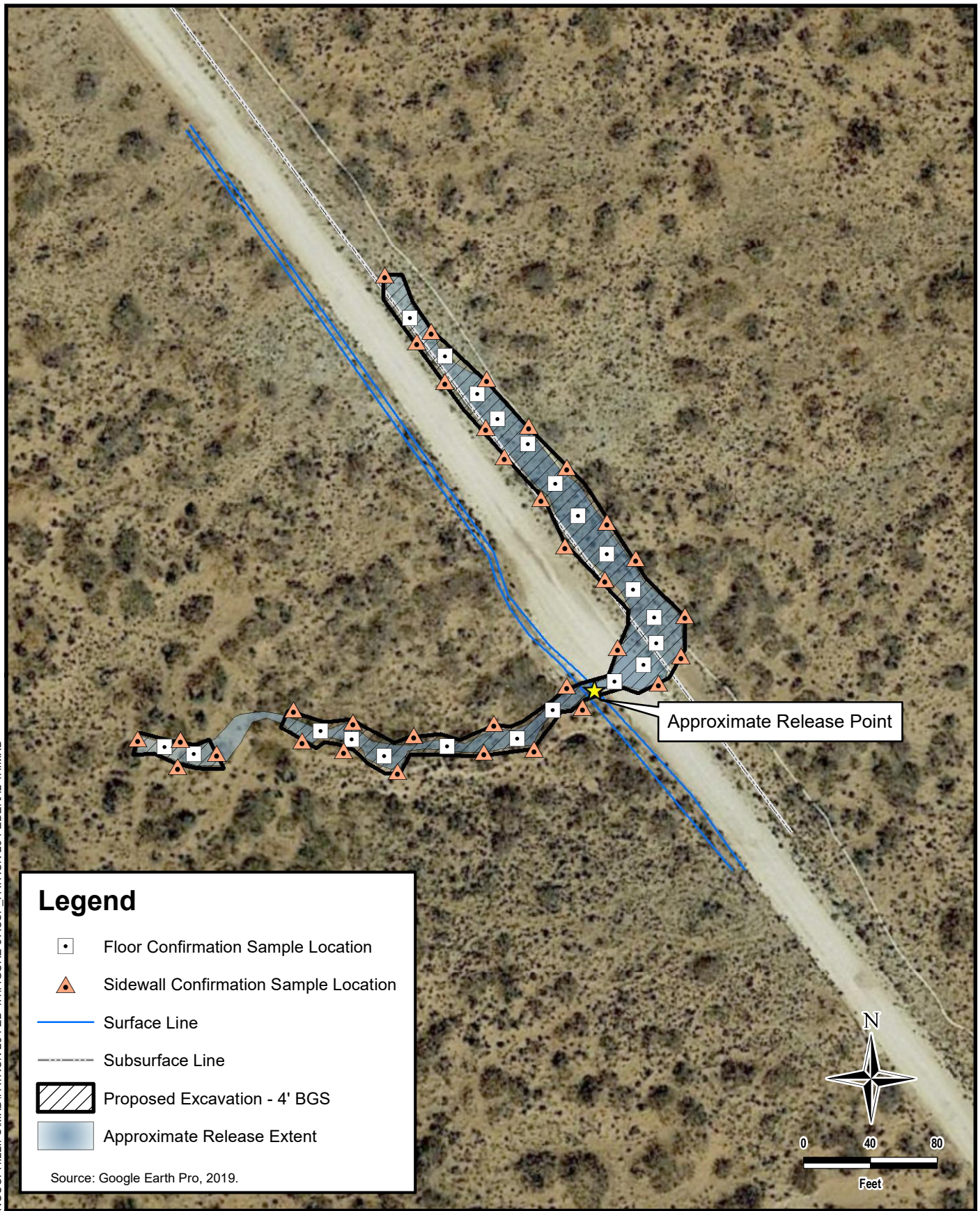
CONOCOPHILLIPS

2RP-5609 / NAB1924840999
(32.126086°, -103.955787°)
EDDY COUNTY, NEW MEXICO

PATRON 23 FEDERAL #4H FLOWLINE RELEASE
PROPOSED REMEDIATION EXTENTS

PROJECT NO.:	212C-MD-02646
DATE:	JANUARY 19, 2022
DESIGNED BY:	AAM

Figure No.
4



DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\PATRON 23 FED 4H\FIGURE 5 ACSP_PATRON 23 FEDERAL 4H.MXD

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(32.126086°, -103.955787°)
EDDY COUNTY, NEW MEXICO

PATRON 23 FEDERAL #4H FLOWLINE RELEASE
ALTERNATIVE CONFIRMATION SAMPLING PLAN

PROJECT NO.:	212C-MD-02646
DATE:	JANUARY 21, 2022
DESIGNED BY:	AAM

Figure No.
5

TABLE

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
INITIAL SOIL ASSESSMENT - 2RP-5609
HERITAGE CONCHO
PATRON 23 FEDERAL #4H FLOWLINE RELEASE
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride[1]		BTEX[2]														TPH[3]									
					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	mg/kg	Q		
AH-1	8/20/2020	0-1	363		< 0.00200		< 0.00200		< 0.00200		< 0.00399		< 0.00200		< 0.00200		< 0.00200		< 49.9		< 49.9		< 49.9		< 49.9			
		1-1.5	***2,280***		-		-		-		-		-		-		-		-		-		-		-			
Trench-1	9/3/2020	0-1	***1,260***		-		-		-		-		-		-		-		-		-		-		-			
		1-1.5	***1,900***		-		-		-		-		-		-		-		-		-		-		-			
AH-2	8/20/2020	0-1	***3,320***		< 0.00200		< 0.00200		< 0.00200		< 0.00399		< 0.00200		< 0.00200		< 0.00200		< 50.0		< 50.0		< 50.0		< 50.0			
		1-1.5	***5,220***		-		-		-		-		-		-		-		-		-		-		-			
Trench-2	9/3/2020	0-1	***1,220***		-		-		-		-		-		-		-		-		-		-		-			
		1-1.5	***1,430***		-		-		-		-		-		-		-		-		-		-		-			
AH-3	8/20/2020	0-1	22.8		< 0.00200		< 0.00200		< 0.00200		< 0.00399		< 0.00200		< 0.00200		< 0.00200		< 50.0		< 50.0		< 50.0		< 50.0			
		1-1.5	28.2		-		-		-		-		-		-		-		-		-		-		-			
		2-2.5	170		-		-		-		-		-		-		-		-		-		-		-			
		2.5-3	***1,770***		-		-		-		-		-		-		-		-		-		-		-			
Trench-3	9/3/2020	0-1	21.5		-		-		-		-		-		-		-		-		-		-		-			
		1	20.3		-		-		-		-		-		-		-		-		-		-		-			
		2	***4,220***		-		-		-		-		-		-		-		-		-		-		-			
		3	***4,350***		-		-		-		-		-		-		-		-		-		-		-			
AH-4	8/20/2020	0-1	49.5		< 0.00199		< 0.00199		< 0.00199		< 0.00398		< 0.00199		< 0.00199		< 0.00199		< 49.9		< 49.9		< 49.9		< 49.9			
		1-1.5	53.8		-		-		-		-		-		-		-		-		-		-		-			
		2-2.5	***1,190***	X	-		-		-		-		-		-		-		-		-		-		-			
		3-3.5	***9,080***		-		-		-		-		-		-		-		-		-		-		-			
		4-4.5	***12,500***		-		-		-		-		-		-		-		-		-		-		-			
Trench-4	9/3/2020	0-1	43.8		-		-		-		-		-		-		-		-		-		-		-			
		1	19.7		-		-		-		-		-		-		-		-		-		-		-			
		2	22.2		-		-		-		-		-		-		-		-		-		-		-			
		3	114		-		-		-		-		-		-		-		-		-		-		-			
		4	***7,400***		-		-		-		-		-		-		-		-		-		-		-			
		5	10,100		-		-		-		-		-		-		-		-		-		-		-			
		6	9,130		-		-		-		-		-		-		-		-		-		-		-			
AH-5	8/20/2020	0-1	***6,680***		< 0.00201		< 0.00201		< 0.00201		< 0.00402		< 0.00201		< 0.00201		< 0.00201		< 49.8		< 49.8		< 49.8		< 49.8			
		1-1.5	***3,610***		-		-		-		-		-		-		-		-		-		-		-			
		2-2.5	***4,420***		-		-		-		-		-		-		-		-		-		-		-			
		3-3.5	***2,090***		-		-		-		-		-		-		-		-		-		-		-			
		4-4.5	139		-		-		-		-		-		-		-		-		-		-		-			
AH-6	8/20/2020	0-1	51.4		< 0.00199		< 0.00199		< 0.00199		< 0.00398		< 0.00199		< 0.00199		< 0.00199		< 50.0		< 50.0		< 50.0		< 50.0			
		1-1.5	85.9		-		-		-		-		-		-		-		-		-		-		-			
		2-2.5	***2,100***		-		-		-		-		-		-		-		-		-		-		-			
		3-3.5	***3,700***		-		-		-		-		-		-		-		-		-		-		-			
Trench-5	9/3/2020	0-1	***1,010***		-		-		-		-		-		-		-		-		-		-		-			
		1	***1,130***		-		-		-		-		-		-		-		-		-		-		-			
		2	***1,290***		-		-		-		-		-		-		-		-		-		-		-			
		3.5	***4,380***		-		-		-		-		-		-		-		-		-		-		-			

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
INITIAL SOIL ASSESSMENT - 2RP-5609
HERITAGE CONCHO
PATRON 23 FEDERAL #4H FLOWLINE RELEASE
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride[1]		BTEX[2]														TPH[3]									
					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	mg/kg	Q		
AH-7	8/20/2020	0-1	18.0		< 0.00200		< 0.00200		< 0.00200		< 0.00400		< 0.00200		< 0.00200		< 0.00200		< 49.9		< 49.9		< 49.9		< 49.9			
		1-1.5	21.7		-		-		-		-		-		-		-		-		-		-		-			
		2-2.5	441		-		-		-		-		-		-		-		-		-		-		-			
		3-3.5	***4,190***		-		-		-		-		-		-		-		-		-		-		-			
Trench-6	9/3/2020	0-1	24.2		-		-		-		-		-		-		-		-		-		-		-			
		1	30.3		-		-		-		-		-		-		-		-		-		-		-			
		2	237		-		-		-		-		-		-		-		-		-		-		-			
		3	***9,590***		-		-		-		-		-		-		-		-		-		-		-			
		4	***9,580***		-		-		-		-		-		-		-		-		-		-		-			
		5	16,700		-		-		-		-		-		-		-		-		-		-		-			
		6	12,700		-		-		-		-		-		-		-		-		-		-		-			
		7	7,280		-		-		-		-		-		-		-		-		-		-		-			
		8	4,330		-		-		-		-		-		-		-		-		-		-		-			
		9	5,190		-		-		-		-		-		-		-		-		-		-		-			
		10	1,750		-		-		-		-		-		-		-		-		-		-		-			
		11	130		-		-		-		-		-		-		-		-		-		-		-			
		12	124		-		-		-		-		-		-		-		-		-		-		-			
AH-8	8/20/2020	0-1	17.2		< 0.00199		< 0.00199		< 0.00199		< 0.00398		< 0.00199		< 0.00199		< 0.00199		< 50.0		< 50.0		< 50.0		< 50.0			
		1-1.5	16.1		-		-		-		-		-		-		-		-		-		-		-			
		2-2.5	21.9		-		-		-		-		-		-		-		-		-		-		-			
		3-3.5	34.2		-		-		-		-		-		-		-		-		-		-		-			
AH-9	8/20/2020	0-1	17.9		< 0.00200		< 0.00200		< 0.00200		< 0.00399		< 0.00200		< 0.00200		< 0.00200		< 49.8		< 49.8		< 49.8		< 49.8			
		1-1.5	23.9		-		-		-		-		-		-		-		-		-		-		-			
		2-2.5	42.3		-		-		-		-		-		-		-		-		-		-		-			
		3-3.5	***1,030***		-		-		-		-		-		-		-		-		-		-		-			
		4-4.5	***4,530***		-		-		-		-		-		-		-		-		-		-		-			
Trench-7	9/3/2020	0-1	61.6		-		-		-		-		-		-		-		-		-		-		-			
		1	58.4		-		-		-		-		-		-		-		-		-		-		-			
		2	73.3		-		-		-		-		-		-		-		-		-		-		-			
		3	344		-		-		-		-		-		-		-		-		-		-		-			
		4	***2,690***		-		-		-		-		-		-		-		-		-		-		-			
		5	8,340		-		-		-		-		-		-		-		-		-		-		-			
		6	1,830		-		-		-		-		-		-		-		-		-		-		-			
		7	6,400		-		-		-		-		-		-		-		-		-		-		-			
		8	2,740		-		-		-		-		-		-		-		-		-		-		-			
		9	206		-		-		-		-		-		-		-		-		-		-		-			
		10	36.0		-		-		-		-		-		-		-		-		-		-		-			
Horizontal-1	8/20/2020	0-1	15.9		< 0.00200		< 0.00200		< 0.00200		< 0.00399		< 0.00200		< 0.00200		< 0.00200		< 50.0		< 50.0		< 50.0		< 50.0			
Horizontal-2	8/20/2020	0-1	9.01		< 0.00199		< 0.00199		< 0.00199		< 0.00398		< 0.00199		< 0.00199		< 0.00199		< 50.0		< 50.0		< 50.0		< 50.0			
Horizontal-3	8/20/2020	0-1	14.8		< 0.00199		< 0.00199		< 0.00199		< 0.00398		< 0.00199		< 0.00199		< 0.00199		< 49.9		< 49.9		< 49.9		< 49.9			
Horizontal-4	8/20/2020	0-1	10.4		< 0.00200		< 0.00200		< 0.00200		< 0.00399		< 0.00200		< 0.00200		< 0.00200		< 49.8		< 49.8		< 49.8		< 49.8			

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
INITIAL SOIL ASSESSMENT - 2RP-5609
HERITAGE CONCHO
PATRON 23 FEDERAL #4H FLOWLINE RELEASE
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride[1]		BTEX[2]														TPH[3]									
					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	mg/kg	Q		
Horizontal-5	8/20/2020	0-1	9.20		< 0.00198		< 0.00198		< 0.00198		< 0.00397		< 0.00198		< 0.00198		< 0.00198		< 50.0		< 50.0		< 50.0		< 50.0			
Horizontal-6	8/20/2020	0-1	8.71		< 0.00198		< 0.00198		< 0.00198		< 0.00397		< 0.00198		< 0.00198		< 0.00198		< 49.9		< 49.9		< 49.9		< 49.9			
Horizontal-7	8/20/2020	0-1	6.16		< 0.00199		< 0.00199		< 0.00199		< 0.00398		< 0.00199		< 0.00199		< 0.00199		< 50.0		< 50.0		< 50.0		< 50.0			
Horizontal-8	8/20/2020	0-1	8.71		< 0.00200		< 0.00200		< 0.00200		< 0.00399		< 0.00200		< 0.00200		< 0.00200		< 50.0		< 50.0		< 50.0		< 50.0			
Horizontal-9	8/20/2020	0-1	67.1		< 0.00200		< 0.00200		< 0.00200		< 0.00400		< 0.00200		< 0.00200		< 0.00200		< 49.9		< 49.9		< 49.9		< 49.9			
Horizontal-10	8/20/2020	0-1	10.3		< 0.00198		< 0.00198		< 0.00198		< 0.00397		< 0.00198		< 0.00198		< 0.00198		< 49.8		< 49.8		< 49.8		< 49.8			

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

(-) Sample not analyzed for constituent

1 EPA Method 300.0

2 EPA Method 8021B

3 Method SW8015 Mod

Bold and italicized values indicate exceedance of proposed Remediation RRALs and/or Reclamation Requirements.

Shaded rows indicate intervals proposed for excavation.

QUALIFIERS:

X In our quality control review of 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.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
ADDITIONAL SOIL ASSESSMENT - NAB1924840999
CONOCOPHILLIPS
PATRON 23 FEDERAL 4H RELEASE
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth Interval	Chloride[1]		BTEX[2]										TPH[3]							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO C_6 - C_{10}		DRO C_{10} - C_{28}		EXT ORO C_{28} - C_{36}		Total TPH (GRO+DRO+ORO)	
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	
H-11	12/27/2021	0-1	32.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
		2-3	32.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
		3-4	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
H-12	12/27/2021	0-1	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
		2-3	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
		3-4	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
H-13	12/27/2021	0-1	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
		2-3	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	
		3-4	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-	

NOTES:

ft. Feet
bgs Below ground surface
ppm Parts per million
mg/kg Milligrams per kilogram
TPH Total Petroleum Hydrocarbons
GRO Gasoline range organics
DRO Diesel range organics
ORO Oil range organics
1 Method SM4500Cl-B
2 EPA Method 8021B
3 EPA Method 8015M

APPENDIX A
C-141 Forms

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification HEAJG-190821-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)

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Initial Response

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

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

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

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

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

Printed Name: _____ Title: _____

Signature: DeLinn Grant _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

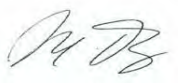
Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: _____ Title: _____

Signature:  _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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: _____ Date: _____

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

Signature: _____ Date: _____

APPENDIX B
Site Characterization Data

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

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

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

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

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02371		C	ED		2	3	15	25S	29E	596741	3555106*	1739	200	60	140
C 02680		CUB	ED		2	3	15	25S	29E	596741	3555106*	1739	200		
C 04558 POD1		CUB	ED	3	4	3	23	25S	29E	598354	3553039	1900			

Average Depth to Water: **60 feet**

Minimum Depth: **60 feet**

Maximum Depth: **60 feet**

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 598472 **Northing (Y):** 3554936 **Radius:** 2000

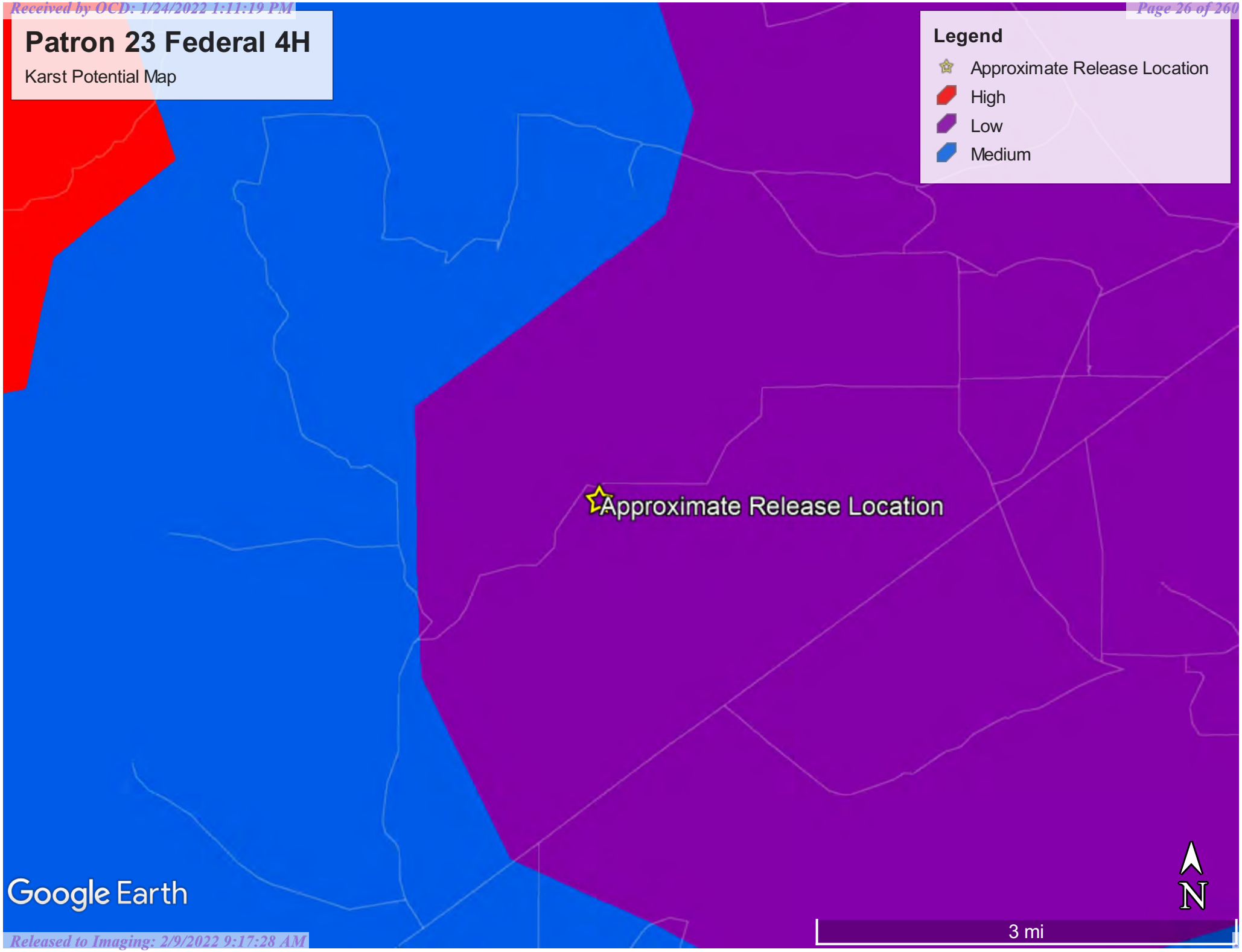
***UTM location was derived from PLSS - see Help**

12/23/21 2:32 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Patron 23 Federal 4H

Karst Potential Map



OCD Water Bodies

12/23/2021, 3:38:57 PM

OCD District Offices

PLJV Probable Playas

OSE Water-bodies

OSE Streams

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

OCD, Esri, HERE, Garmin, iPC, Maxar

New Mexico Oil Conservation Division

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

212C-MD-02646 | TETRA TECH | **LOG OF BORING BH-1** | Page 1 of 1

Project Name: Patron 23 Federal 4H

Borehole Location: GPS: 32.122593, -103.949262 | Surface Elevation: 3141 ft

Borehole Number: BH-1 | Borehole Diameter (in.): 4 | Date Started: 2/24/2021 | Date Finished: 2/24/2021

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
0												-- CALICHE: Tan, dry, weakly cemented, fine to medium grained.	1	
10												**-SC-** CLAYEY SAND: Brown, dry, fine to medium grained, medium dense.	12	
20												-- CALICHE: Tan, dry, weakly to moderately cemented, fine to coarse grained, with occasional gravel.	26	
30												**-SM-** SILTY SAND: Brown, dry, medium dense, fine to coarse grained.	41	
40												**-SC-** CLAYEY SAND: Tan, dry, fine to medium grained, with occasional Sandy Shale seams.	66	
70												**-SM-** SILTY SAND: Tan, dry, medium dense, fine to medium grained.	81	
80												**-SHALE-** SHALE: Sandy shale, fissile, dry.	105	

Bottom of borehole at 105.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, Discrete Sample, Grab Sample, Test Pit

Operation Types: Hand Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Direct Push, Wash Rotary, Core Barrel

Notes: "Surface elevation is an estimated value based on Google Earth data."

Logger: Lane Scarborough | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

PATRON 23 FEDERAL 4H.GPJ `1-11-22 `TT_AUSTIN_GEOTECH_NOWELL3 ` 2015 TT TEMPLATE DECEMBER WELL.GDT ' ` Revised 5-16-12 (RHM)

APPENDIX C
Work Plan
(November 5, 2020)

SITE INFORMATION

Report Type: Work Plan

General Site Information:						
Site:	Patron 23 Federal #4H					
Company:	COG Operating LLC					
Section, Township and Range	Unit K/N	Sec. 14	T 25S	R 29E		
Lease Number:	API No. 30-015-42451					
County:	Eddy County					
GPS:	32.12651			-103.95606		
Surface Owner:	Federal					
Mineral Owner:	Federal					
Directions:	From intersection 128 & lease road (Buck Johnson Rd,) travel Southwest on Buck Johnson Rd, follow for 8.95 miles, turn right onto lease road (Twin Wells Rd). Take first left, Follow for 4.62 miles, turn right onto lease road. Follow for 0.90 miles and Turn left. Follow for 3.08 miles, turn left onto lease road. Follow for 0.10 miles, location along lease road.					

Release Data:	
Date Released:	8/8/2019
Type Release:	Produced Water
Source of Contamination:	Flowline
Fluid Released:	250 bbl water
Fluids Recovered:	10 bbls water

Official Communication:			
Name:	Ike Tavarez		Mike Carmona
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		901 West Wall Street
	600 W. Illinois Ave.		Suite 100
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8121
Fax:	(432) 684-7137		
Email:	itavarez@conchoresources.com		Mike.Carmona@tetratech.com

Site Characterization	
Depth to Groundwater:	*140.90' Below Surface*
Karst Potential:	*Low*

Recommended Remedial Action Levels (RRALs)				
Benzene	***Total BTEX***	***TPH (GRO+DRO)***	***TPH (GRO+DRO+MRO)***	***Chlorides***
10 mg/kg	*50 mg/kg*	*1,000 mg/kg*	*2,500 mg/kg*	*20,000 mg/kg*

TETRA TECH

November 5, 2020

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

Re: Work Plan for the COG Operating, LLC, Patron 23 Federal #4H, Unit K/N, Section 14, Township 25 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG), to assess a release that occurred at the Patron 23 Federal #4H, Unit K/N, Section 14, Township 25 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.12651°, -103.95606°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on August 8, 2019, and released approximately 250 barrels of produced water due to a ruptured flowline. A vacuum truck was dispatched to remove all freestanding fluids, recovering approximately 10 barrels of produced water. The release occurred along a lease road, impacting areas measuring 282' x 12' and 322' x 5'. The initial C-141 form is included in Appendix A.

Site Characterization

A site characterization was performed for the site, and no lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances.

The site is located in a low karst potential area. No water wells were listed within Section 14 on the New Mexico Office of the State Engineer's (NMOSE) database, or the USGS National Water Information Database. The nearest well is listed in Section 15 on the USGS Water Information Database, approximately 1.0 mile east of the site and drilled in 1998, and has a reported depth to groundwater of 140.90' below surface. The report shows water level at 140.81' below surface in 1992, and 140.90' below surface in 1998. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the site following the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine

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TETRA TECH

recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. A site characterization was performed for the site, and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. Additionally, the site is located in a low karst potential area. The most stringent RRALs will be held for the top 4' of soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization and the proposed bore, the proposed RRAL for TPH is 2,500 mg/kg (GRO + DRO + MRO). Additionally, the proposed RRAL for chlorides is 20,000 mg/kg.

Soil Assessment and Analytical Results

Initial Assessment

On August 20, 2020, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of nine auger holes (AH-1 through AH-9) were installed in the release footprint to total depths ranging from 0-1' to 4.5' below surface. Deeper samples could not be collected due to a dense formation in the area. Also, ten (10) horizontal delineation samples were collected (Horizontal-1 through Horizontal-10). Soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.

Referring to Table 1, none of the samples collected showed benzene, total BTEX, or TPH concentrations above the laboratory reporting limits. Additionally, all of the horizontal delineation samples showed chloride concentrations below the RRAL, with concentrations ranging from 6.16 mg/kg to 67.1 mg/kg. However, the areas of aguer hole (AH-1 through AH-7, and AH-9) showed high chloride concentrations, showing general increases in concentration with depth. The concentration highs were 2,280 mg/kg, 5,220 mg/kg, 1,770 mg/kg, 12,500 mg/kg, 6,680 mg/kg, 3,700 mg/kg, 4,190 mg/kg, and 4,530 mg/kg, respectively.

Trenches

On September 3, 2020, Tetra Tech personnel were onsite to further evaluate and trench the release area. A total of seven trenches (Trench-1 through Trench-7) were installed in the release footprint to total depths ranging from 0-1' to 12.0' below surface. Soil samples were collected and submitted to the laboratory for chloride analysis by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.

Referring to Table 1, samples collected from Trench-1 through Trench-7 showed chloride concentrations over proposed RRALs. The elevated concentrations ranged from depths of 0-1' through 6.0' below surface, showing concentrations highs of 1,900 mg/kg, 1,430 mg/kg, 4,350 mg/kg, 10,100 mg/kg, 4,380 mg/kg, 16,700 mg/kg, and 2,690 mg/kg, respectively.

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Remediation Plan

All samples were below the Table 1 closure criteria, and thus no remediation will occur.

Site Reclamation and Restoration

Concho will perform the reclamation and revegetation in the pasture area per NMOCD 19.15.29.13. The reclamation will be achieved by removing the soil to a depth of 4.0' below surface and in the areas of Trench-1 through Trench-7. Approximately 1,500 cubic yards of material will be removed and hauled to proper disposal. Once excavated, soil samples will be collected from the sidewalls to confirm the removal of impact soil greater than 600 mg/kg chlorides or background (whichever is greater). Sidewall confirmation samples (five-point composite) will be collected every 200 square feet to ensure proper removal of the impacted material.

The backfilled material will be non-contaminated with concentrations below 600 mg/kg chlorides and reseeded per BLM guidelines when appropriate. COG will be excavated and will be implemented within ninety (90) days of the work plan being approved.

Safety Concerns – Surface Lines and Pipelines

The proposed excavation depths may not be reached due to wall cave-ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent possible.

Conclusion

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Mike Carmona,
Geologist

Brittany Long,
Project Manager

Figures

SITE LOCATION

N
W
E
S

0 10,416.5 20,833

Approximate Scale in Feet

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

STATE LOCATOR MAP

OVERVIEW MAP
PATRON 23 FEDERAL #4H
Property Located at coordinates 32.12651°,-103.95606°
EDDY COUNTY, NEW MEXICO

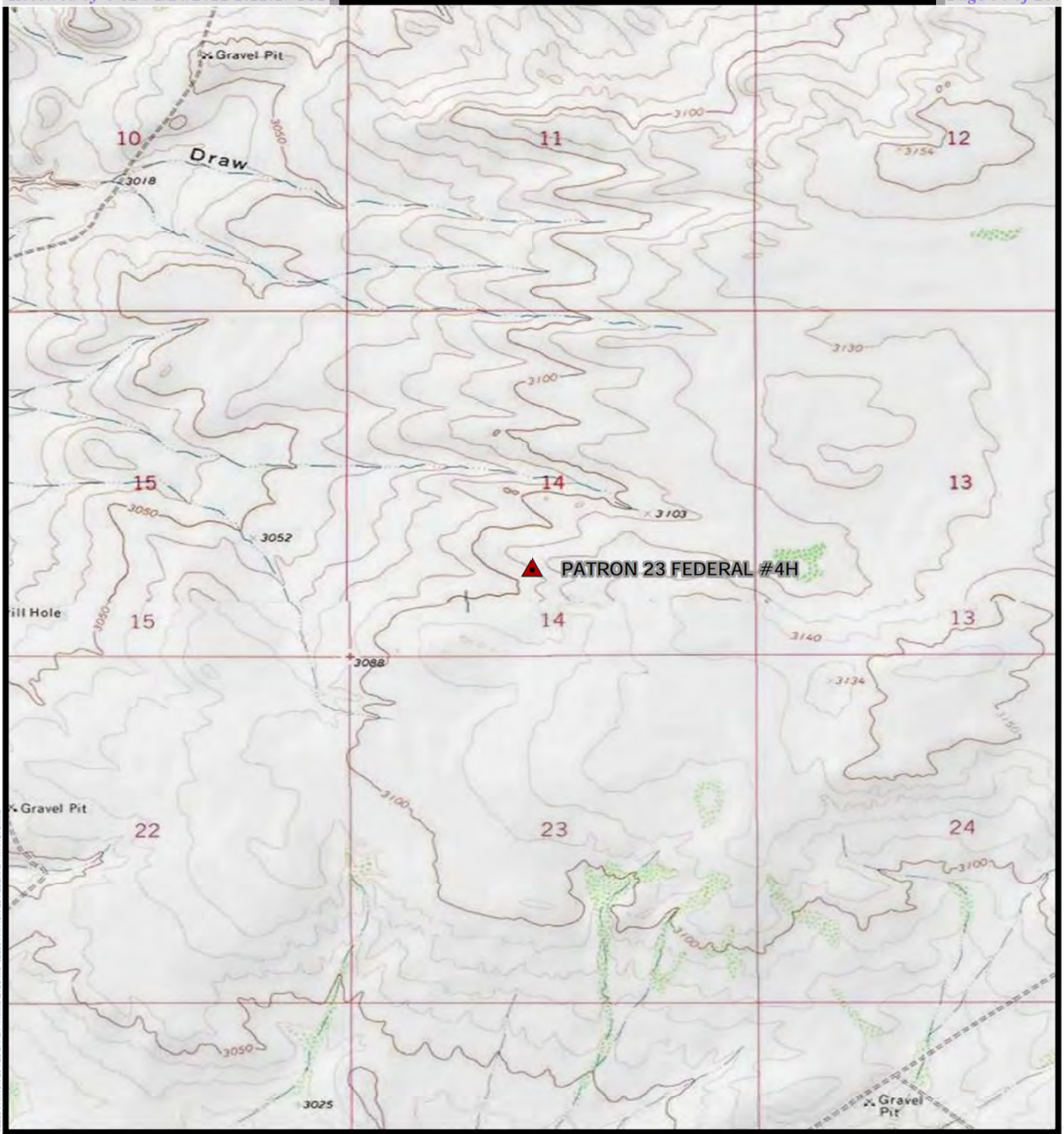
CONCHO

TETRA TECH
901 W Wall St Ste. 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-02295
Date: 08/27/2020
Drawn By: MLM

FIGURE
1

Document Path: H:\GIS\CONCHO RESOURCES - 2OG\212C-MD-02295 PATRON 23 FEDERAL #4H\MXD\212C-MD-02295 PATRON 23 FEDERAL #4H FIG. 1.mxd



SITE LOCATION

N
W
E
S

0 1,000 2,000

Approximate Scale in Feet

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

TOPOGRAPHIC MAP
PATRON 23 FEDERAL #4H
Property Located at coordinates 32.12651°,-103.95606°
EDDY COUNTY, NEW MEXICO

CONCHO

TETRA TECH
901 W Wall St Ste. 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-02295
Date: 08/27/2020
Drawn By: MLM

FIGURE
2

Document Path: H:\GIS\CONCHO RESOURCES - DOG\212C-MD-02295 PATRON 23 FEDERAL #4H\MXD\212C-MD-02295 PATRON 23 FEDERAL #4H FIG. 2.mxd

TRENCH DESIGNATION	LATITUDE	LONGTITUDE
T-1	32.073604	-103.572205
T-2	32.073549	-103.572147
T-3	32.073489	-103.572098
T-4	32.073411	-103.572038
T-5	32.073360	-103.572146
T-6	32.073358	-103.572263
T-7	32.073376	-103.572442

AUGER HOLE & HORIZONTAL COORDINATE LOCATIONS	LATITUDE	LONGITUDE
AH-1	32.126682°	-103.956125°
AH-2	32.126539°	-103.955972°
AH-3	32.126382°	-103.955840°
AH-4	32.126173°	-103.955678°
AH-5	32.126112°	-103.955725°
AH-6	32.126012°	-103.955925°
AH-7	32.125980°	-103.956202°
AH-8	32.126027°	-103.956478°
AH-9	32.125996°	-103.956633°
H-1	32.125979°	-103.956721°
H-2	32.126059°	-103.956457°
H-3	32.126027°	-103.956114°
H-4	32.126093°	-103.955859°
H-5	32.126788°	-103.956204°
H-6	32.126466°	-103.955795°
H-7	32.126120°	-103.955606°
H-8	32.125991°	-103.955755°
H-9	32.125948°	32.125948°
H-10	32.125959°	-103.956448°

AUGERHOLE SAMPLE LOCATION
HORIZONTAL SAMPLE LOCATION
POINT OF RELEASE
SURFACE STEEL PIPELINE
SUFACE POLYLINE
FLOWLINE
SPILL AREA
ARC ASSESSMENT SITE (16.02 ACRES)

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community 03/24/2020

N W E S

0 85 170
Approximate Scale in Feet

SPILL ASSESSMENT MAP
PATRON 23 FEDERAL #4H
Property Located at coordinates 32.12651°,-103.95606°
EDDY COUNTY, NEW MEXICO

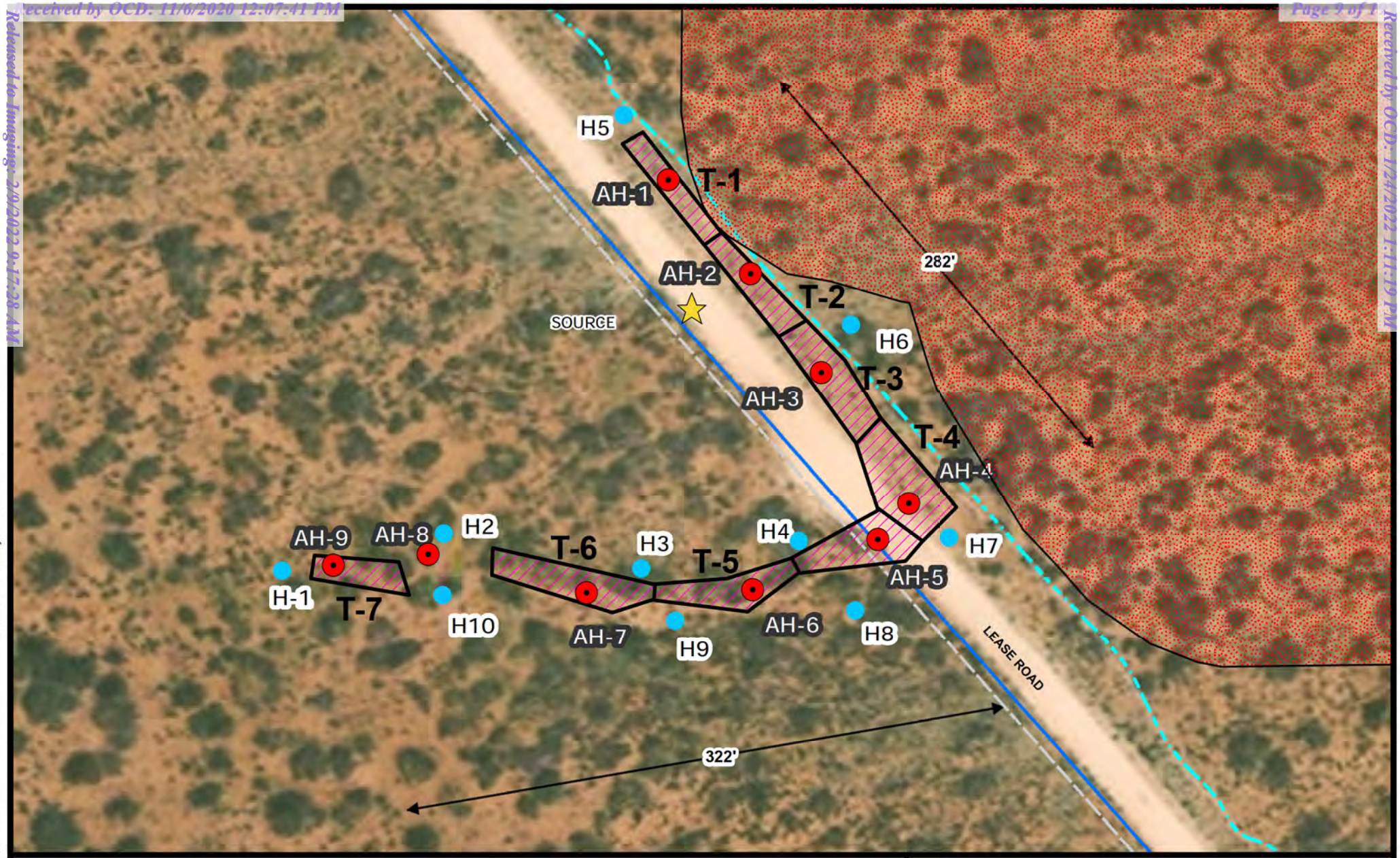
CONCHO

TETRA TECH
901 W Wall St Ste 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-02295
Date: 08/31/2020
Drawn By: MLM

FIGURE 3

Date: 9/18/2020 Document Path: G:\LDIS_CAD_STANDARDS\LDIS\Pipeline Mapping\x - Projects without folder yet\EOG Resources\1 - Projects\Patron 23 Federal\Mapping\6 - Other Construction Drawings\Patron 23 Federal\MXD\212C-MD-02295 PATRON 23 FEDERAL #4H FIG. 3.mxd



AUGERHOLE SAMPLE LOCATION

HORIZONTAL SAMPLE LOCATION

4.0' EXCAVATED DEPTH

ARC BUFFER

N
W
E
S

0 85 170

Approximate Scale in Feet

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community 03/24/2020

PROPOSED EXCAVATION MAP
PATRON 23 FEDERAL #4H
Property Located at coordinates 32.12651°,-103.95606°
EDDY COUNTY, NEW MEXICO

CONCHO

TETRA TECH
901 W Wall St Ste 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-02295
Date: 11/5/2020
Drawn By: DN

FIGURE
4

Date: 11/5/2020 Document Path: G:\LDIS_CLIENT_PROJECTS\Tetra Tech Environmental Work\CONCHO Resources\COG - Windward Fed #2 Battery\MXD\212C-MD-02295 PATRON 23 FEDERAL #4H FIG. 4 - Rev 2.mxd

Tables

Table 1
COG
Patron 23 Fed (8.8.19)
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	MRO	Total						
AH-1	8/20/2020	0-1	X		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	363
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	**2,280**
Trench-1	9/3/2020	0-1	X		-	-	-	-	-	-	-	-	-	**1,260**
	"	1.5	X		-	-	-	-	-	-	-	-	-	**1900**
AH-2	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**3,320**
	"	1.5	X		-	-	-	-	-	-	-	-	-	**5,220**
Trench-2	9/3/2020	0-1	X		-	-	-	-	-	-	-	-	-	**1,220**
	"	1.5	X		-	-	-	-	-	-	-	-	-	**1,430**
AH-3	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	22.8
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	28.2
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	170
	"	2.5-3	X		-	-	-	-	-	-	-	-	-	**1,770**
Trench-3	9/3/2020	0-1	X		-	-	-	-	-	-	-	-	-	21.5
	"	1	X		-	-	-	-	-	-	-	-	-	20.3
	"	2	X		-	-	-	-	-	-	-	-	-	**4,220**
	"	3	X		-	-	-	-	-	-	-	-	-	**4,350**
AH-4	8/202020	0-1	X		<49.9	<49.9	<49.9	<49.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	49.5
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	53.8
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	**1,190**
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	**9,080**
	"	4-4.5	X		-	-	-	-	-	-	-	-	-	**12,500**
Trench-4	9/3/2020	0-1	X		-	-	-	-	-	-	-	-	-	43.8
	"	1	X		-	-	-	-	-	-	-	-	-	19.7
	"	2	X		-	-	-	-	-	-	-	-	-	22.2
	"	3	X		-	-	-	-	-	-	-	-	-	114
	"	4	X		-	-	-	-	-	-	-	-	-	**7,400**
	"	5	X		-	-	-	-	-	-	-	-	-	**10,100**
	"	6	X		-	-	-	-	-	-	-	-	-	9,130
AH-5	8/20/2020	0-1	X		<49.8	<49.8	<49.8	<49.8	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	**6,680**
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	**3,610**
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	**4,420**
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	**2,090**
	"	4-4.5	X		-	-	-	-	-	-	-	-	-	139

Table 1
COG
Patron 23 Fed (8.8.19)
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	MRO	Total						
AH-6	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	51.4
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	85.9
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	**2,100**
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	**3,700**
Trench-5	9/3/2020	0-1	X		-	-	-	-	-	-	-	-	-	**1,010**
	"	1	X		-	-	-	-	-	-	-	-	-	**1,130**
	"	2	X		-	-	-	-	-	-	-	-	-	**1,290**
	"	3.5	X		-	-	-	-	-	-	-	-	-	**4,380**
AH-7	8/20/2020	0-1	X		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	18.0
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	21.7
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	441
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	**4,190**
Trench-6	9/3/2020	0-1	X		-	-	-	-	-	-	-	-	-	24.2
	"	1	X		-	-	-	-	-	-	-	-	-	30.3
	"	2	X		-	-	-	-	-	-	-	-	-	237
	"	3	X		-	-	-	-	-	-	-	-	-	**9,590**
	"	4	X		-	-	-	-	-	-	-	-	-	**9,580**
	"	5	X		-	-	-	-	-	-	-	-	-	**16,700**
	"	6	X		-	-	-	-	-	-	-	-	-	**12,700**
	"	7	X		-	-	-	-	-	-	-	-	-	7,280
	"	8	X		-	-	-	-	-	-	-	-	-	4,330
	"	9	X		-	-	-	-	-	-	-	-	-	5,190
	"	10	X		-	-	-	-	-	-	-	-	-	1,750
	"	11	X		-	-	-	-	-	-	-	-	-	130
	"	12	X		-	-	-	-	-	-	-	-	-	124
AH-8	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	17.2
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	16.1
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	21.9
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	34.2

Table 1
COG
Patron 23 Fed (8.8.19)
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	MRO	Total						
AH-9	8/20/2020	0-1	X		<49.8	<49.8	<49.8	<49.8	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	17.9
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	23.9
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	42.3
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	**1,030**
	"	4-4.5	X		-	-	-	-	-	-	-	-	-	**4,530**
Trench-7	9/3/2020	0-1	X		-	-	-	-	-	-	-	-	-	61.6
	"	1	X		-	-	-	-	-	-	-	-	-	58.4
	"	2	X		-	-	-	-	-	-	-	-	-	73.3
	"	3	X		-	-	-	-	-	-	-	-	-	344
	"	4	X		-	-	-	-	-	-	-	-	-	**2,690**
	"	5	X		-	-	-	-	-	-	-	-	-	8,340
	"	6	X		-	-	-	-	-	-	-	-	-	1,830
	"	7	X		-	-	-	-	-	-	-	-	-	6,400
	"	8	X		-	-	-	-	-	-	-	-	-	2,740
	"	9	X		-	-	-	-	-	-	-	-	-	206
	"	10	X		-	-	-	-	-	-	-	-	-	36.0
Horizontal-1	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	15.9
Horizontal-2	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	9.01
Horizontal-3	8/20/2020	0-1	X		<49.9	<49.9	<49.9	<49.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	14.8
Horizontal-4	8/20/2020	0-1	X		<49.8	<49.8	<49.8	<49.8	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	10.4
Horizontal-5	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	9.20
Horizontal-6	8/20/2020	0-1	X		<49.9	<49.9	<49.9	<49.9	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	8.71
Horizontal-7	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	6.16
Horizontal-8	8/20/2020	0-1	X		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	8.71
Horizontal-9	8/20/2020	0-1	X		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	67.1
Horizontal-10	8/20/2020	0-1	X		<49.8	<49.8	<49.8	<49.8	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	10.3

(-) Not Analyzed

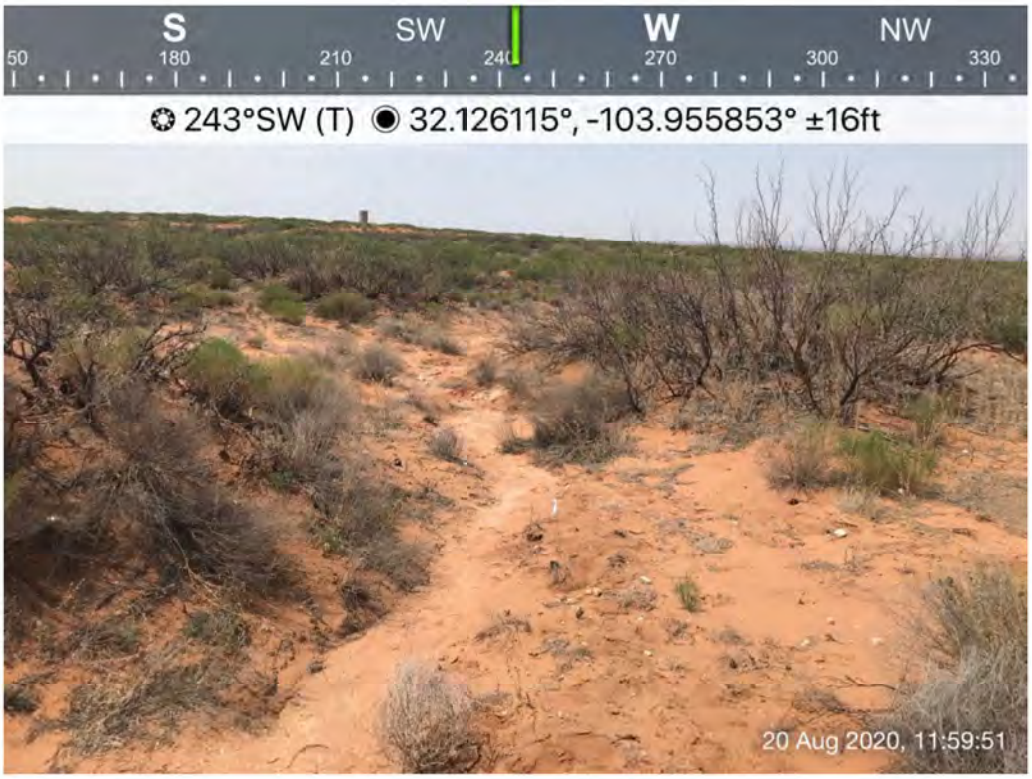
Proposed Excavation

Photos

COG
Patron 23 Federal #4H
Eddy County, New Mexico

TETRA TECH

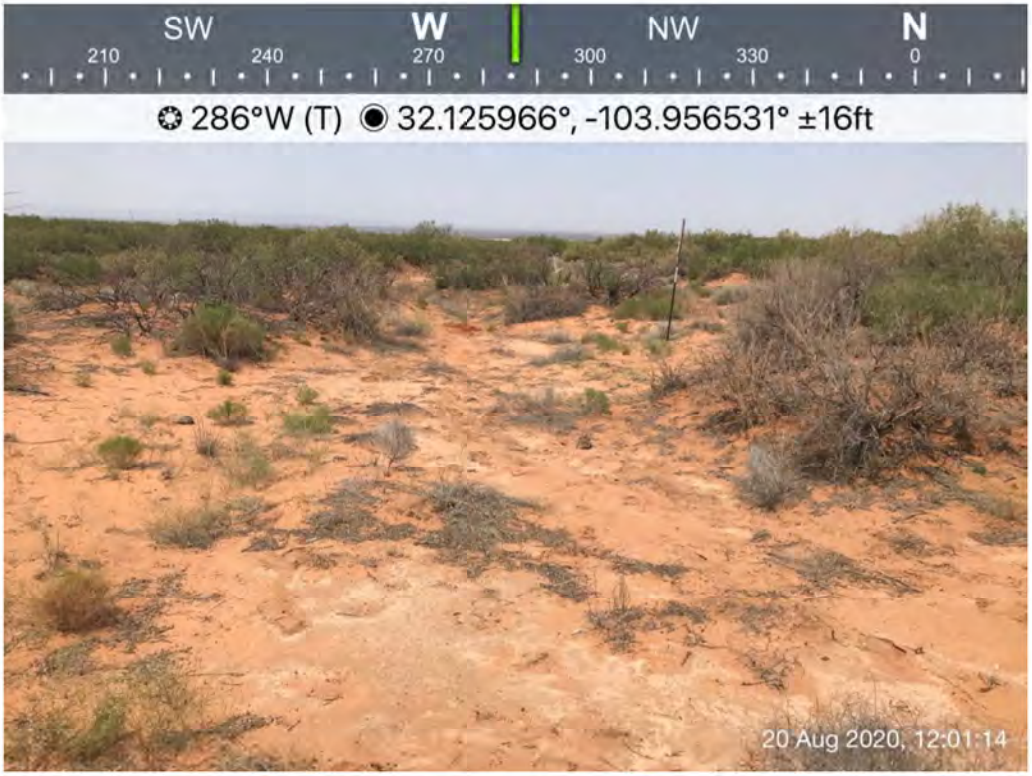
View of Release – View East



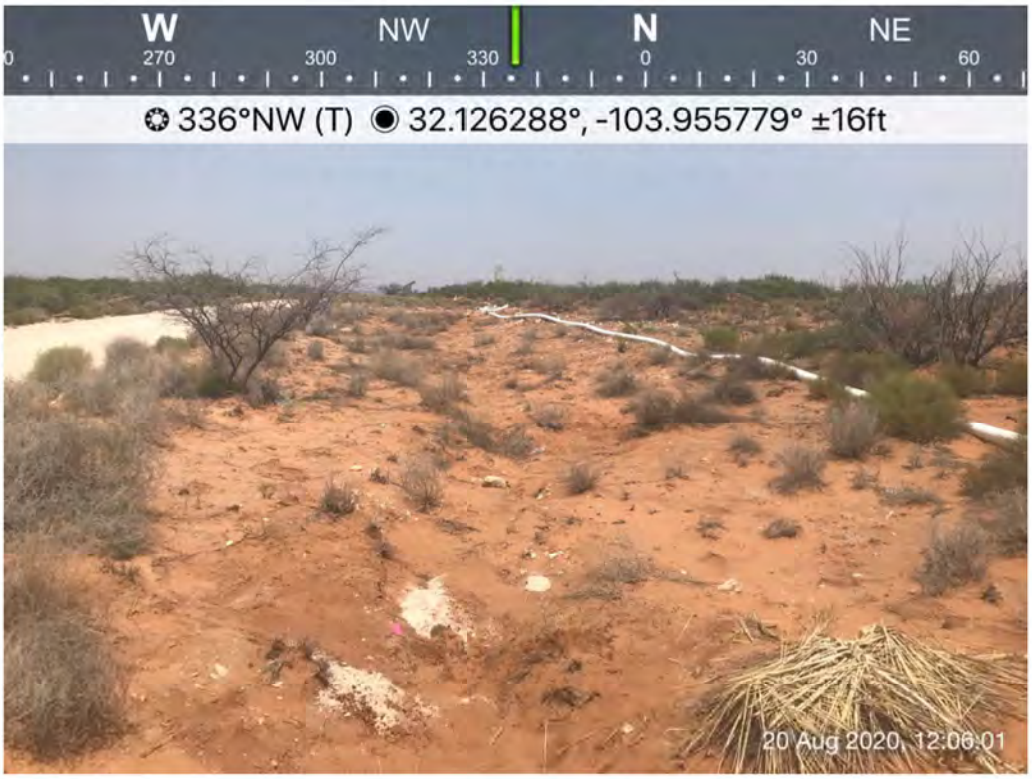
View of Release – View Southwest

COG
Patron 23 Federal #4H
Eddy County, New Mexico

TETRA TECH



View of Release – View West



View of Release – View Northwest

COG
Patron 23 Federal #4H
Eddy County, New Mexico

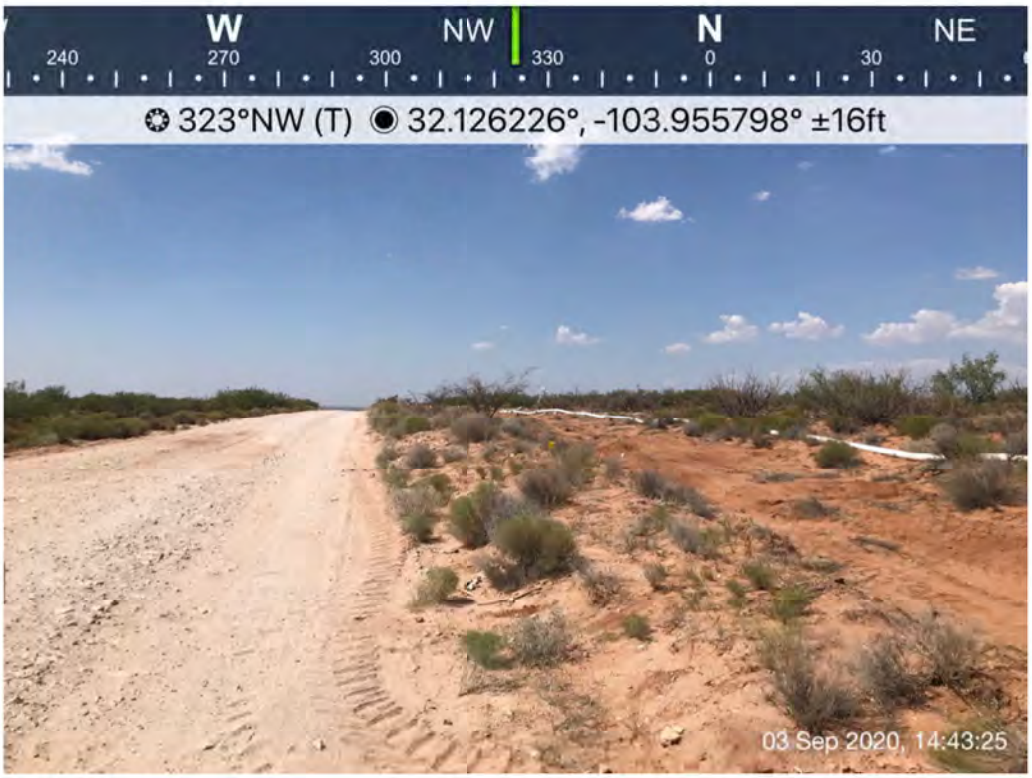
TETRA TECH

View of Trenching Activities – View West

View of Trenching Activities – View West

COG
Patron 23 Federal #4H
Eddy County, New Mexico

TETRA TECH



View of Release After Trenching Activities – View Northwest

View of Release After Trenching Activities – View Southeast

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Production, LLC	OGRID	217955
Contact Name	Jennifer Knowlton	Contact Telephone	(575) 748-1570
Contact email	JKnowlton@concho.com	Incident # *(assigned by OCD)*	
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.12651 Longitude -103.95606
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Patron 23 Federal #004H	Site Type	Flowline
Date Release Discovered	August 8, 2019	API# *(if applicable)*	30-015-42451

Unit Letter	Section	Township	Range	County
K/N	14	25S	29E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
■ Produced Water	Volume Released (bbls) 250	Volume Recovered (bbls) 10
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	■ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a ruptured flowline due to high pressure. The flowline is being repaired The release was in the pasture. 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.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? The volume released was greater than 25 barrels.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Immediate notice was given by DeAnn Gran via e-mail August 8, 2019 at 2:40 pm to Mike Bratcher and Jim Amos.

Initial Response

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

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

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

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

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

Printed Name: DeAnn Grant
Title: HSE Administrative Assistant
Signature: DeAnn Grant
Date: 8/13/2019
email: agrant@concho.com
Telephone: (432) 253-4513

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Ike Tavarez Title: Senior Environmental Specialist

Signature: Date: 11/05/2020

email: itavarez@conchoresources.com Telephone: (432) 686-3023

OCD Only

Received by: Date:

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

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

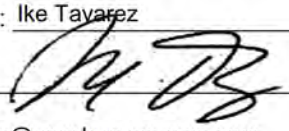
- ☑ Detailed description of proposed remediation technique
- ☑ Scaled sitemap with GPS coordinates showing delineation points
- ☑ Estimated volume of material to be remediated
- ☑ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☑ Proposed schedule for remediation (note 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: Ike Tavarez Title: Senior Environmental Specialist

Signature:  Date: 11/05/2020

email: itavarez@conchoresources.com Telephone: (432) 686-3023

OCD Only

Received by: Chad Hensley Date: 02/18/2021

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

Signature: DENIED Date: 02/18/2021

****** LIQUID SPILLS - VOLUME CALCULATIONS ******

Location of spill: COG Patron 23 Federal #004H **Date of Spill:** 8-Aug-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** X

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

Total Surface Area	width		length		wet soil depth	oil (%)
Rectangle Area #1	20 ft		625 ft	X	9.25 in	0%
Rectangle Area #2	0 ft	X	0 ft	X	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 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 #7	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #8	0 ft	X	0 ft	X	0 in	0%

Standing Liquid Calculations

Standing Liquid Area	width		length		liquid depth	oil (%)
Rectangle Area #1	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #2	0 ft	X	0 ft	X	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 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 #7	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #8	0 ft	X	0 ft	X	0 in	0%

okay

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.
* Sand = **0.08** gallon (gal.) liquid per gal. volume of soil.
* Gravelly (caliche) loam = **0.14** gal. liquid per gal. volume of soil.
* Sandy clay loam soil = **0.14** gal liquid per gal. volume of soil.
* Clay loam = **0.16** gal. liquid per gal. volume of soil.

Use the following when the liquid completely fills the pore space of the soil:
Occurs when the spill soaked soil is contained by barriers, natural (or not).
* Clay loam = **0.20** gal. liquid per gal. volume of soil.
* Gravelly (caliche) loam = **0.25** gal. liquid per gal. volume of soil.
* Sandy loam = **0.5** gal. liquid per gal. volume of soil.

Total Solid/Liquid Volume: 12,500 sq. ft. 9,635 cu. ft. cu. ft.

Total Free Liquid Volume: sq. ft. cu. ft. cu. ft.

Estimated Volumes Spilled

	H2O	OIL
Liquid in Soil:	240.2 BBL	0.0 BBL
Free Liquid:	0.0 BBL	0.0 BBL
Totals:	**240.2 BBL**	**0.0 BBL**
Total Liquid Spill Liquid:	**240.2 BBL**	**0.00 BBL**

Estimated Production Volumes Lost

	H2O	OIL
Estimated Production Spilled:	0.0 BBL	0.0 BBL

Estimated Surface Damage

Surface Area: 12,500 sq. ft.

Surface Area: .2870 acre

Recovered Volumes

Estimated oil recovered: BBL check - okay

Estimated water recovered: BBL check - okay

Estimated Weights, and Volumes

Saturated Soil = 1,079,167 lbs 9,635 cu. ft. 357 cu. yds.

Total Liquid = 240 BBL 10,090 gallon 83,951 lbs

Air Emission from flowline leaks:

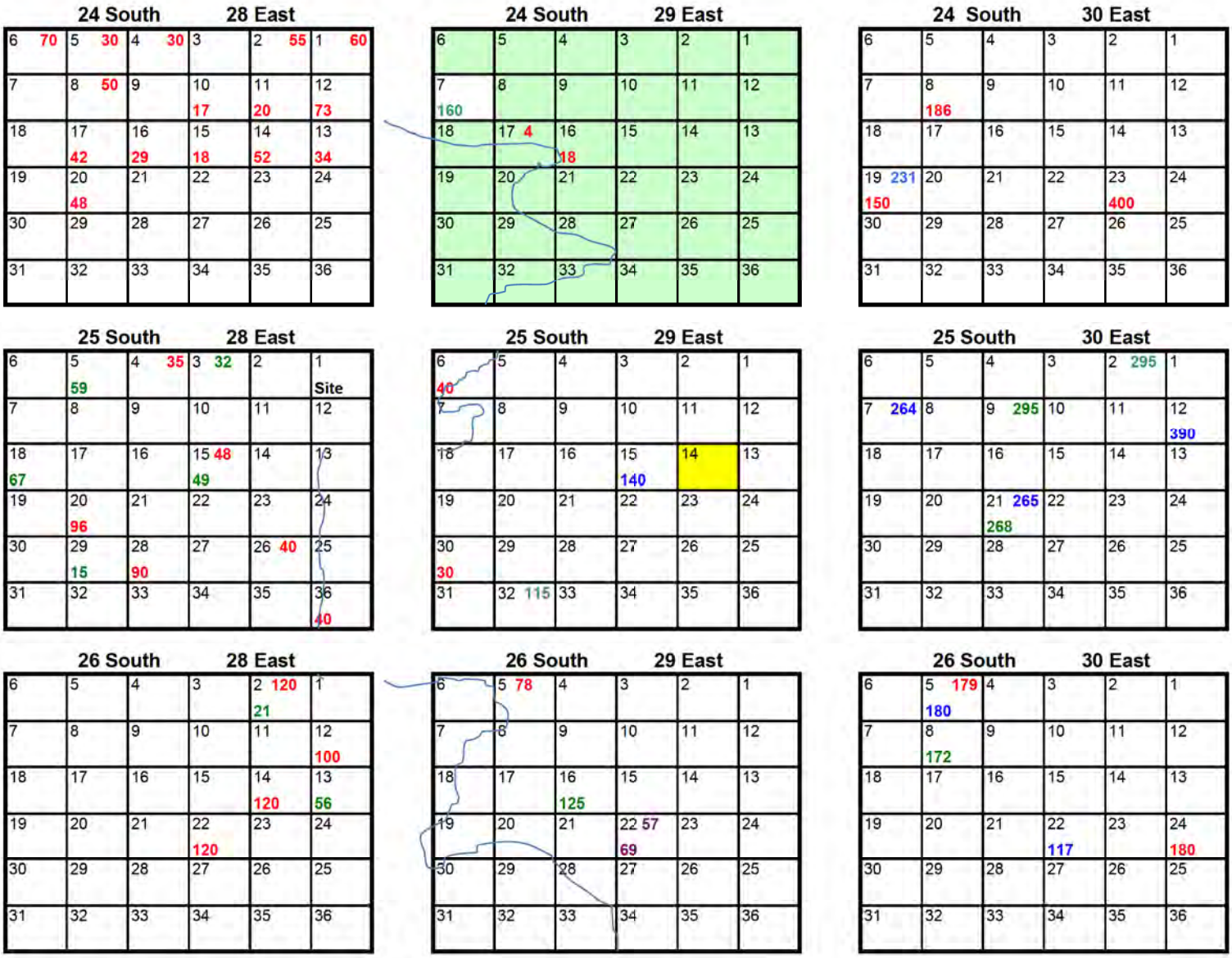
Volume of oil spill:	-	BBL
Separator gas calculated:	-	MCF
Separator gas released:	-	MCF
Gas released from oil:	-	lb
H2S released:	-	lb
Total HC gas released:	-	lb
Total HC gas released:	-	MCF

Air Emission of Reporting Requirements:

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

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Patron 23 Federal
Eddy County, New Mexico



88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

USGS science for a changing world

USGS Hom
Contact US
Search US

National Water Information System: Mapper

Site Information

New Mexico NFHL Data

August 26, 2020

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

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

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

USGS science for a changing world

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: New Mexico | GO

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 320739103584201

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 320739103584201 25S.29E.15.31134

Eddy County, New Mexico
Latitude 32°07'39", Longitude 103°58'42" NAD27
Land-surface elevation 3,017 feet above NAVD88
The depth of the well is 192 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1983-02-01		D	140.40			2		U		U	A
1987-10-20		D	140.33			2		U		U	A
1992-11-06		D	140.81			2		S		U	A
1998-01-29		D	140.90			2		S		U	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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

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

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01337	C	ED		2	1	30	25S	29E	591926	3552642*	180	30	150
C 01880	C	ED	3	3	2	06	25S	29E	592161	3558605*	85	40	45
C 02371	C	ED		2	3	15	25S	29E	596741	3555106*	200	60	140
C 02459	C	ED	4	4	1	02	25S	29E	598422	3558663*	150		
C 02518	C	ED		3	4	08	25S	29E	593895	3556300*	462		
C 02680	CUB	ED		2	3	15	25S	29E	596741	3555106*	200		
C 04324 POD10	CUB	ED	1	1	1	09	25S	29E	594563	3557603	65	60	5
C 04324 POD11	CUB	ED	1	1	1	09	25S	29E	594576	3557619	61	61	0
C 04324 POD12	CUB	ED	2	2	2	08	25S	29E	594476	3557627	65	60	5
C 04324 POD6	CUB	ED	1	1	1	09	25S	29E	594538	3557657	62	61	1
C 04324 POD8	CUB	ED	4	4	4	05	25S	29E	594442	3557807	69	65	4
C 04324 POD9	CUB	ED	1	1	1	09	25S	29E	594590	3557676	72	62	10

Average Depth to Water: **55 feet**

Minimum Depth: **30 feet**

Maximum Depth: **65 feet**

Record Count: 12

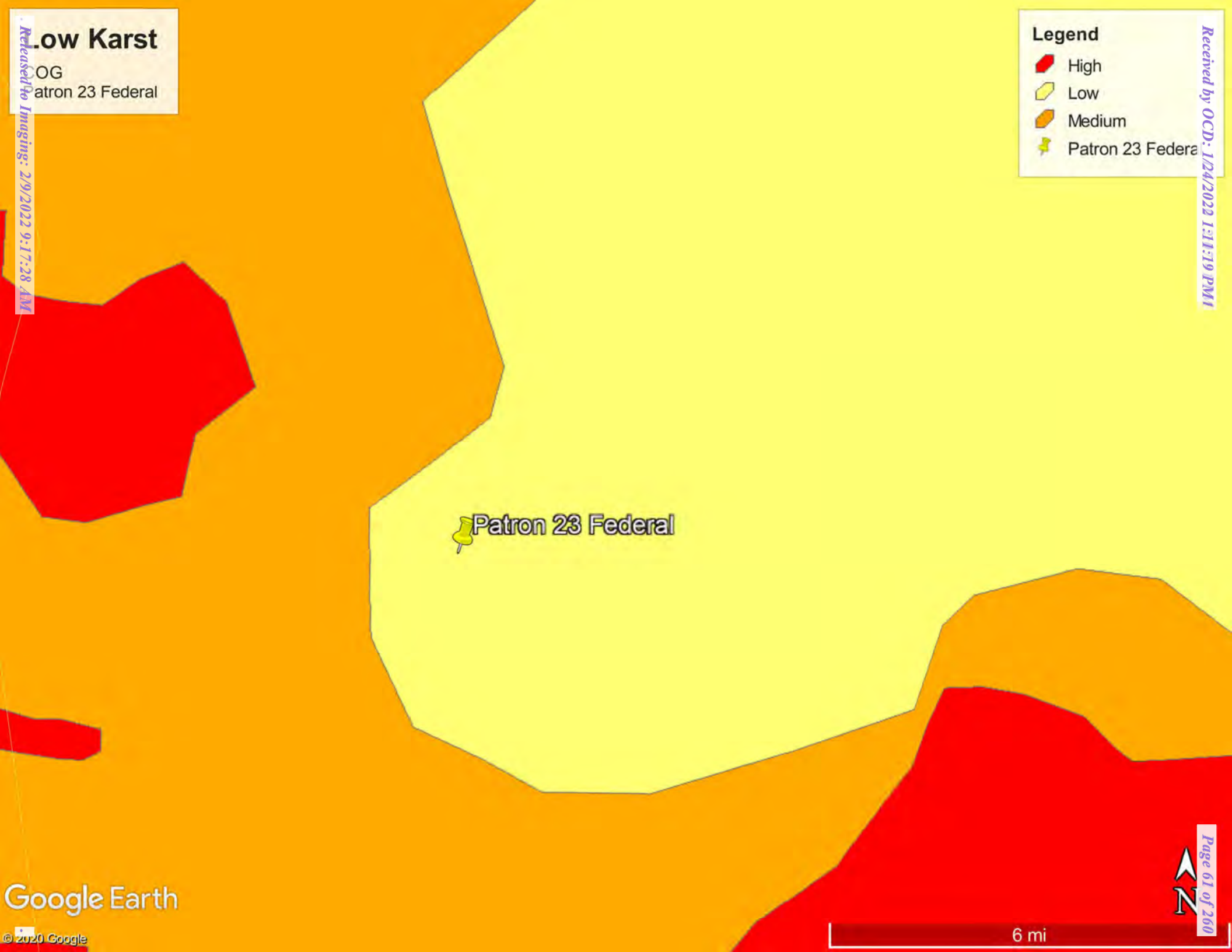
Basin/County Search:

County: Eddy

PLSS Search:

Township: 25S **Range:** 29E

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



Appendix C

eurofins | Environment Testing Xenco

Certificate of Analysis Summary 670795

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4H (8.08.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	670795-001		670795-002		670795-003		670795-004		670795-005		670795-006	
	Field Id:	AH-1 0-1'		AH-1 1'-1.5'		AH-2 0-1'		AH-2 1'-1.5'		AH-3 0-1'		AH-3 1'-1.5'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00	
BTEX by EPA 8021B	*Extracted:*	08.24.2020 13:30				08.24.2020 13:00				08.24.2020 13:00			
	Analyzed:	08.25.2020 00:52				08.25.2020 00:40				08.25.2020 01:01			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL		
Benzene		<0.00200	0.00200			<0.00200	0.00200			<0.00200	0.00200		
Toluene		<0.00200	0.00200			<0.00200	0.00200			<0.00200	0.00200		
Ethylbenzene		<0.00200	0.00200			<0.00200	0.00200			<0.00200	0.00200		
m,p-Xylenes		<0.00399	0.00399			<0.00399	0.00399			<0.00399	0.00399		
o-Xylene		<0.00200	0.00200			<0.00200	0.00200			<0.00200	0.00200		
Total Xylenes		<0.00200	0.00200			<0.00200	0.00200			<0.00200	0.00200		
Total BTEX		<0.00200	0.00200			<0.00200	0.00200			<0.00200	0.00200		
Chloride by EPA 300	*Extracted:*	08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05	
	Analyzed:	08.24.2020 17:49		08.24.2020 18:08		08.24.2020 18:15		08.24.2020 18:21		08.24.2020 18:27		08.24.2020 18:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		363	4.97	2280	25.0	3320	25.0	5220	49.9	22.8	5.01	28.2	5.05
TPH by SW8015 Mod	*Extracted:*	08.24.2020 13:00				08.24.2020 13:00				08.24.2020 13:00			
	Analyzed:	08.24.2020 22:04				08.24.2020 22:27				08.24.2020 22:50			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9			<50.0	50.0			<50.0	50.0		
Diesel Range Organics (DRO)		<49.9	49.9			<50.0	50.0			<50.0	50.0		
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9			<50.0	50.0			<50.0	50.0		
Total TPH		<49.9	49.9			<50.0	50.0			<50.0	50.0		

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 670795

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4H (8.08.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	670795-007		670795-008		670795-009		670795-010		670795-011		670795-012	
	Field Id:	AH-3 2'-2.5'		AH-3 3'		AH-4 0-1'		AH-4 1'-1.5'		AH-4 2'-2.5'		AH-4 3'-3.5'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00	
BTEX by EPA 8021B	*Extracted:*					08.24.2020 13:00							
	Analyzed:					08.25.2020 01:21							
	Units/RL:					mg/kg	RL						
Benzene						<0.00199	0.00199						
Toluene						<0.00199	0.00199						
Ethylbenzene						<0.00199	0.00199						
m,p-Xylenes						<0.00398	0.00398						
o-Xylene						<0.00199	0.00199						
Total Xylenes						<0.00199	0.00199						
Total BTEX						<0.00199	0.00199						
Chloride by EPA 300	*Extracted:*	08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05	
	Analyzed:	08.24.2020 18:53		08.24.2020 18:59		08.24.2020 19:06		08.24.2020 19:12		08.24.2020 19:18		08.24.2020 19:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		170	4.96	1770	24.8	49.5	5.00	53.8	4.98	1190 X	5.04	9080	50.2
TPH by SW8015 Mod	*Extracted:*					08.24.2020 13:00							
	Analyzed:					08.24.2020 23:13							
	Units/RL:					mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)						<49.9	49.9						
Diesel Range Organics (DRO)						<49.9	49.9						
Motor Oil Range Hydrocarbons (MRO)						<49.9	49.9						
Total TPH						<49.9	49.9						

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 670795

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4H (8.08.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	670795-013		670795-014		670795-015		670795-016		670795-017		670795-018	
	Field Id:	AH-4 4'-4.5'		AH-5 0-1'		AH-5 1'-1.5'		AH-5 2'-2.5'		AH-5 3'-3.5'		AH-5 4'-4.5'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00	
BTEX by EPA 8021B	*Extracted:*			08.24.2020 13:00									
	Analyzed:			08.25.2020 01:42									
	Units/RL:			mg/kg	RL								
Benzene				<0.00201	0.00201								
Toluene				<0.00201	0.00201								
Ethylbenzene				<0.00201	0.00201								
m,p-Xylenes				<0.00402	0.00402								
o-Xylene				<0.00201	0.00201								
Total Xylenes				<0.00201	0.00201								
Total BTEX				<0.00201	0.00201								
Chloride by EPA 300	*Extracted:*	08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:05	
	Analyzed:	08.24.2020 19:44		08.24.2020 20:03		08.24.2020 20:09		08.24.2020 20:15		08.24.2020 20:22		08.24.2020 20:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		12500	99.6	6680	49.6	3610	25.0	4420	25.0	2090	25.3	139	5.03
TPH by SW8015 Mod	*Extracted:*			08.24.2020 13:00									
	Analyzed:			08.24.2020 23:36									
	Units/RL:			mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)				<49.8	49.8								
Diesel Range Organics (DRO)				<49.8	49.8								
Motor Oil Range Hydrocarbons (MRO)				<49.8	49.8								
Total TPH				<49.8	49.8								

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 670795

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4H (8.08.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	670795-019		670795-020		670795-021		670795-022		670795-023		670795-024	
	Field Id:	AH-6 0-1'		AH-6 1'-1.5'		AH-6 2'-2.5'		AH-6 3'-3.5'		AH-7 0-1'		AH-7 1'-1.5'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00	
BTEX by EPA 8021B	*Extracted:*	08.24.2020 13:00								08.24.2020 13:00			
	Analyzed:	08.25.2020 02:02								08.25.2020 02:22			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Benzene		<0.00199	0.00199							<0.00200	0.00200		
Toluene		<0.00199	0.00199							<0.00200	0.00200		
Ethylbenzene		<0.00199	0.00199							<0.00200	0.00200		
m,p-Xylenes		<0.00398	0.00398							<0.00400	0.00400		
o-Xylene		<0.00199	0.00199							<0.00200	0.00200		
Total Xylenes		<0.00199	0.00199							<0.00200	0.00200		
Total BTEX		<0.00199	0.00199							<0.00200	0.00200		
Chloride by EPA 300	*Extracted:*	08.24.2020 16:05		08.24.2020 16:05		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55	
	Analyzed:	08.24.2020 20:34		08.24.2020 20:41		08.24.2020 20:26		08.24.2020 20:41		08.24.2020 20:47		08.24.2020 20:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		51.4	4.97	85.9	4.96	2100	24.8	3700	24.9	18.0	5.00	21.7	4.96
TPH by SW8015 Mod	*Extracted:*	08.24.2020 13:00								08.24.2020 13:00			
	Analyzed:	08.24.2020 23:59								08.25.2020 00:22			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0							<49.9	49.9		
Diesel Range Organics (DRO)		<50.0	50.0							<49.9	49.9		
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0							<49.9	49.9		
Total TPH		<50.0	50.0							<49.9	49.9		

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 670795

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4H (8.08.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	670795-025		670795-026		670795-027		670795-028		670795-029		670795-030	
	Field Id:	AH-7 2'-2.5'		AH-7 3'-3.5'		AH-8 0-1'		AH-8 1'-1.5'		AH-8 2'-2.5'		AH-8 3'-3.5'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00	
BTEX by EPA 8021B	***Extracted:***					08.24.2020 13:00							
	Analyzed:					08.25.2020 02:43							
	Units/RL:					mg/kg	RL						
Benzene						<0.00199	0.00199						
Toluene						<0.00199	0.00199						
Ethylbenzene						<0.00199	0.00199						
m,p-Xylenes						<0.00398	0.00398						
o-Xylene						<0.00199	0.00199						
Total Xylenes						<0.00199	0.00199						
Total BTEX						<0.00199	0.00199						
Chloride by EPA 300	***Extracted:***	08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55	
	Analyzed:	08.24.2020 20:57		08.24.2020 21:13		08.24.2020 21:18		08.24.2020 21:24		08.24.2020 21:29		08.24.2020 21:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		441	4.96	4190	25.2	17.2	4.99	16.1	5.03	21.9	5.05	34.2	4.98
TPH by SW8015 Mod	***Extracted:***					08.24.2020 13:00							
	Analyzed:					08.25.2020 00:44							
	Units/RL:					mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)						<50.0	50.0						
Diesel Range Organics (DRO)						<50.0	50.0						
Motor Oil Range Hydrocarbons (MRO)						<50.0	50.0						
Total TPH						<50.0	50.0						

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 670795

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4H (8.08.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	670795-031		670795-032		670795-033		670795-034		670795-035	
	Field Id:	AH-9 0-1'		AH-9 1'-1.5'		AH-9 2'-2.5'		AH-9 3'-3.5'		AH-9 4'-4.5'	
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00	
BTEX by EPA 8021B	*Extracted:*	08.24.2020 13:00									
	Analyzed:	08.25.2020 03:03									
	Units/RL:	mg/kg	RL								
Benzene		<0.00200	0.00200								
Toluene		<0.00200	0.00200								
Ethylbenzene		<0.00200	0.00200								
m,p-Xylenes		<0.00399	0.00399								
o-Xylene		<0.00200	0.00200								
Total Xylenes		<0.00200	0.00200								
Total BTEX		<0.00200	0.00200								
Chloride by EPA 300	*Extracted:*	08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55	
	Analyzed:	08.24.2020 21:39		08.24.2020 21:55		08.24.2020 22:00		08.24.2020 22:16		08.24.2020 22:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.9	4.95	23.9	4.96	42.3	5.03	1030	4.97	4530	24.9
TPH by SW8015 Mod	*Extracted:*	08.24.2020 13:00									
	Analyzed:	08.25.2020 01:07									
	Units/RL:	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8								
Diesel Range Organics (DRO)		<49.8	49.8								
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8								
Total TPH		<49.8	49.8								

BRL - Below Reporting Limit

Jessica Kramer

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Analytical Report 670795

for

Tetra Tech- Midland

Project Manager: Mike Carmona

Patron 23 #4H (8.08.19)

212C-MD-02295

08.25.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-37), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), 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)

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08.25.2020

Project Manager: **Mike Carmona**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: Eurofins Xenco, LLC Report No(s): **670795**
Patron 23 #4H (8.08.19)
Project Address: Eddy County, Texas

Mike Carmona:

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) 670795. 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. 670795 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,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

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Sample Cross Reference 670795

Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 0-1'	S	08.20.2020 00:00		670795-001
AH-1 1'-1.5'	S	08.20.2020 00:00		670795-002
AH-2 0-1'	S	08.20.2020 00:00		670795-003
AH-2 1'-1.5'	S	08.20.2020 00:00		670795-004
AH-3 0-1'	S	08.20.2020 00:00		670795-005
AH-3 1'-1.5'	S	08.20.2020 00:00		670795-006
AH-3 2'-2.5'	S	08.20.2020 00:00		670795-007
AH-3 3'	S	08.20.2020 00:00		670795-008
AH-4 0-1'	S	08.20.2020 00:00		670795-009
AH-4 1'-1.5'	S	08.20.2020 00:00		670795-010
AH-4 2'-2.5'	S	08.20.2020 00:00		670795-011
AH-4 3'-3.5'	S	08.20.2020 00:00		670795-012
AH-4 4'-4.5'	S	08.20.2020 00:00		670795-013
AH-5 0-1'	S	08.20.2020 00:00		670795-014
AH-5 1'-1.5'	S	08.20.2020 00:00		670795-015
AH-5 2'-2.5'	S	08.20.2020 00:00		670795-016
AH-5 3'-3.5'	S	08.20.2020 00:00		670795-017
AH-5 4'-4.5'	S	08.20.2020 00:00		670795-018
AH-6 0-1'	S	08.20.2020 00:00		670795-019
AH-6 1'-1.5'	S	08.20.2020 00:00		670795-020
AH-6 2'-2.5'	S	08.20.2020 00:00		670795-021
AH-6 3'-3.5'	S	08.20.2020 00:00		670795-022
AH-7 0-1'	S	08.20.2020 00:00		670795-023
AH-7 1'-1.5'	S	08.20.2020 00:00		670795-024
AH-7 2'-2.5'	S	08.20.2020 00:00		670795-025
AH-7 3'-3.5'	S	08.20.2020 00:00		670795-026
AH-8 0-1'	S	08.20.2020 00:00		670795-027
AH-8 1'-1.5'	S	08.20.2020 00:00		670795-028
AH-8 2'-2.5'	S	08.20.2020 00:00		670795-029
AH-8 3'-3.5'	S	08.20.2020 00:00		670795-030
AH-9 0-1'	S	08.20.2020 00:00		670795-031
AH-9 1'-1.5'	S	08.20.2020 00:00		670795-032
AH-9 2'-2.5'	S	08.20.2020 00:00		670795-033
AH-9 3'-3.5'	S	08.20.2020 00:00		670795-034
AH-9 4'-4.5'	S	08.20.2020 00:00		670795-035

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CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Patron 23 #4H (8.08.19)

Project ID: *212C-MD-02295*
Work Order Number(s): *670795*

Report Date: *08.25.2020*
Date Received: *08.24.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3135420 Chloride by EPA 300

Lab Sample ID 670795-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 670795-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

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Certificate of Analytical Results 670795

Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-1 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-001 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 16:05 Basis: Wet Weight

Seq Number: 3135420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**363**	4.97	mg/kg	08.24.2020 17:49		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 22:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 22:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 22:04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 22:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-130	08.24.2020 22:04	
o-Terphenyl	84-15-1	116	%	70-130	08.24.2020 22:04	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-1 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-001 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.25.2020 00:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.25.2020 00:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.25.2020 00:52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.25.2020 00:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.25.2020 00:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.25.2020 00:52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.25.2020 00:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	127	%	70-130	08.25.2020 00:52	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.25.2020 00:52	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-1 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-002	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2280**	25.0	mg/kg	08.24.2020 18:08		5

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-2 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-003 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 16:05 Basis: Wet Weight

Seq Number: 3135420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3320**	25.0	mg/kg	08.24.2020 18:15		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 22:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-130	08.24.2020 22:27	
o-Terphenyl	84-15-1	116	%	70-130	08.24.2020 22:27	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-2 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-003 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.25.2020 00:40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.25.2020 00:40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.25.2020 00:40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.25.2020 00:40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.25.2020 00:40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.25.2020 00:40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.25.2020 00:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.25.2020 00:40	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.25.2020 00:40	

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-2 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-004	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5220**	49.9	mg/kg	08.24.2020 18:21		10

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-3 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-005 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 16:05 Basis: Wet Weight

Seq Number: 3135420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.8**	5.01	mg/kg	08.24.2020 18:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 22:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 22:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 22:50	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 22:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-130	08.24.2020 22:50	
o-Terphenyl	84-15-1	117	%	70-130	08.24.2020 22:50	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-3 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-005 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.25.2020 01:01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.25.2020 01:01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.25.2020 01:01	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.25.2020 01:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.25.2020 01:01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.25.2020 01:01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.25.2020 01:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.25.2020 01:01	
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.25.2020 01:01	

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-3 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-006	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.2**	5.05	mg/kg	08.24.2020 18:47		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-3 2'-2.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-007	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**170**	4.96	mg/kg	08.24.2020 18:53		1

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-3 3'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-008	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1770**	24.8	mg/kg	08.24.2020 18:59		5

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-4 0-1'** Matrix: Soil Date Received:08.24.2020 12:55
Lab Sample Id: 670795-009 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 08.24.2020 16:05 Basis: Wet Weight
Seq Number: 3135420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**49.5**	5.00	mg/kg	08.24.2020 19:06		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight
Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 23:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-130	08.24.2020 23:13	
o-Terphenyl	84-15-1	115	%	70-130	08.24.2020 23:13	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-4 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-009 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.25.2020 01:21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.25.2020 01:21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.25.2020 01:21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.25.2020 01:21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.25.2020 01:21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.25.2020 01:21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.25.2020 01:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.25.2020 01:21	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.25.2020 01:21	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-4 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-010	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**53.8**	4.98	mg/kg	08.24.2020 19:12		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-4 2'-2.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-011	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1190**	5.04	mg/kg	08.24.2020 19:18	X	1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-4 3'-3.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-012	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9080**	50.2	mg/kg	08.24.2020 19:37		10

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-4 4'-4.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-013	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12500**	99.6	mg/kg	08.24.2020 19:44		20

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Patron 23 #4H (8.08.19)

Sample Id: **AH-5 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-014 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 16:05 Basis: Wet Weight

Seq Number: 3135420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6680**	49.6	mg/kg	08.24.2020 20:03		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.24.2020 23:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.24.2020 23:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.24.2020 23:36	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.24.2020 23:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-130	08.24.2020 23:36	
o-Terphenyl	84-15-1	118	%	70-130	08.24.2020 23:36	

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Patron 23 #4H (8.08.19)

Sample Id: **AH-5 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-014 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.25.2020 01:42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.25.2020 01:42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.25.2020 01:42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.25.2020 01:42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.25.2020 01:42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.25.2020 01:42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.25.2020 01:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.25.2020 01:42	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.25.2020 01:42	

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-5 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-015	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3610**	25.0	mg/kg	08.24.2020 20:09		5

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-5 2'-2.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-016	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4420**	25.0	mg/kg	08.24.2020 20:15		5

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-5 3'-3.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-017	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2090**	25.3	mg/kg	08.24.2020 20:22		5

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-5 4'-4.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-018	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**139**	5.03	mg/kg	08.24.2020 20:28		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-6 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-019 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 16:05 Basis: Wet Weight

Seq Number: 3135420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**51.4**	4.97	mg/kg	08.24.2020 20:34		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 23:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-130	08.24.2020 23:59	
o-Terphenyl	84-15-1	112	%	70-130	08.24.2020 23:59	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-6 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-019 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.25.2020 02:02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.25.2020 02:02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.25.2020 02:02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.25.2020 02:02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.25.2020 02:02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.25.2020 02:02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.25.2020 02:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.25.2020 02:02	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.25.2020 02:02	

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-6 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-020	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.24.2020 16:05	Basis:	Wet Weight
Seq Number:	3135420				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**85.9**	4.96	mg/kg	08.24.2020 20:41		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-6 2'-2.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-021	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2100**	24.8	mg/kg	08.24.2020 20:26		5

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-6 3'-3.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-022	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3700**	24.9	mg/kg	08.24.2020 20:41		5

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-7 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-023 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.0**	5.00	mg/kg	08.24.2020 20:47		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.25.2020 00:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.25.2020 00:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.25.2020 00:22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.25.2020 00:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-130	08.25.2020 00:22	
o-Terphenyl	84-15-1	115	%	70-130	08.25.2020 00:22	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-7 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-023 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.25.2020 02:22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.25.2020 02:22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.25.2020 02:22	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.25.2020 02:22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.25.2020 02:22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.25.2020 02:22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.25.2020 02:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.25.2020 02:22	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.25.2020 02:22	

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-7 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-024	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.7**	4.96	mg/kg	08.24.2020 20:52		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-7 2'-2.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-025	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**441**	4.96	mg/kg	08.24.2020 20:57		1

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Patron 23 #4H (8.08.19)

Sample Id:	**AH-7 3'-3.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-026	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4190**	25.2	mg/kg	08.24.2020 21:13		5

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-8 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-027 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.2**	4.99	mg/kg	08.24.2020 21:18		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.25.2020 00:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.25.2020 00:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.25.2020 00:44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.25.2020 00:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-130	08.25.2020 00:44	
o-Terphenyl	84-15-1	113	%	70-130	08.25.2020 00:44	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-8 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-027 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.25.2020 02:43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.25.2020 02:43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.25.2020 02:43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.25.2020 02:43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.25.2020 02:43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.25.2020 02:43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.25.2020 02:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.25.2020 02:43	
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.25.2020 02:43	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-8 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-028	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.1**	5.03	mg/kg	08.24.2020 21:24		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-8 2'-2.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-029	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.9**	5.05	mg/kg	08.24.2020 21:29		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-8 3'-3.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-030	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**34.2**	4.98	mg/kg	08.24.2020 21:34		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-9 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-031 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.9**	4.95	mg/kg	08.24.2020 21:39		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.25.2020 01:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.25.2020 01:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.25.2020 01:07	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.25.2020 01:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-130	08.25.2020 01:07	
o-Terphenyl	84-15-1	110	%	70-130	08.25.2020 01:07	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id: **AH-9 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670795-031 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135430

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.25.2020 03:03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.25.2020 03:03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.25.2020 03:03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.25.2020 03:03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.25.2020 03:03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.25.2020 03:03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.25.2020 03:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.25.2020 03:03	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.25.2020 03:03	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-9 1'-1.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-032	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**23.9**	4.96	mg/kg	08.24.2020 21:55		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-9 2'-2.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-033	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**42.3**	5.03	mg/kg	08.24.2020 22:00		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-9 3'-3.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-034	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1030**	4.97	mg/kg	08.24.2020 22:16		1

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Tetra Tech- Midland, Midland, TX

Patron 23 #4H (8.08.19)

Sample Id:	**AH-9 4'-4.5'**	Matrix:	Soil	Date Received:	08.24.2020 12:55
Lab Sample Id:	670795-035	Date Collected:	08.20.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.24.2020 16:55	Basis:	Wet Weight
Seq Number:	3135422				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4530**	24.9	mg/kg	08.24.2020 22:22		5

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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

eurofins | Environment Testing Xenco

QC Summary 670795

Tetra Tech- Midland

Patron 23 #4H (8.08.19)

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135420 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710055-1-BLK — LCS Sample Id: 7710055-1-BKS — LCSD Sample Id: 7710055-1-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	258	103	258	103	90-110	0	20	mg/kg	08.24.2020 17:07	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135422 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710063-1-BLK — LCS Sample Id: 7710063-1-BKS — LCSD Sample Id: 7710063-1-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	267	107	267	107	90-110	0	20	mg/kg	08.24.2020 20:15	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135420 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670795-001 — MS Sample Id: 670795-001 S — MSD Sample Id: 670795-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	363	249	611	100	606	98	90-110	1	20	mg/kg	08.24.2020 17:56	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135420 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670795-011 — MS Sample Id: 670795-011 S — MSD Sample Id: 670795-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1190	252	1390	79	1390	79	90-110	0	20	mg/kg	08.24.2020 19:25	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135422 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670795-021 — MS Sample Id: 670795-021 S — MSD Sample Id: 670795-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2100	1240	3410	106	3430	107	90-110	1	20	mg/kg	08.24.2020 20:31	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135422 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670795-031 — MS Sample Id: 670795-031 S — MSD Sample Id: 670795-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.9	248	278	105	280	106	90-110	1	20	mg/kg	08.24.2020 21:45	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery — [D] = 100 * (C) / [B]
Log Difference — 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

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QC Summary 670795

Tetra Tech- Midland

Patron 23 #4H (8.08.19)

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135481 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710084-1-BLK — LCS Sample Id: 7710084-1-BKS — LCSD Sample Id: 7710084-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	912	91	905	91	70-130	1	20	mg/kg	08.24.2020 15:57	
Diesel Range Organics (DRO)	<50.0	1000	948	95	934	93	70-130	1	20	mg/kg	08.24.2020 15:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		99		100		70-130	%	08.24.2020 15:57
o-Terphenyl	99		95		94		70-130	%	08.24.2020 15:57

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135481 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710084-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.24.2020 15:32	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135481 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670796-001 — MS Sample Id: 670796-001 S — MSD Sample Id: 670796-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	904	91	925	93	70-130	2	20	mg/kg	08.24.2020 17:23	
Diesel Range Organics (DRO)	<49.9	997	981	98	1030	103	70-130	5	20	mg/kg	08.24.2020 17:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		107		70-130	%	08.24.2020 17:23
o-Terphenyl	98		101		70-130	%	08.24.2020 17:23

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3135430 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710090-1-BLK — LCS Sample Id: 7710090-1-BKS — LCSD Sample Id: 7710090-1-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	0.0970	97	0.104	104	70-130	7	35	mg/kg	08.24.2020 22:18	
Toluene	<0.00200	0.100	0.0911	91	0.0961	96	70-130	5	35	mg/kg	08.24.2020 22:18	
Ethylbenzene	<0.00200	0.100	0.0911	91	0.0971	97	70-130	6	35	mg/kg	08.24.2020 22:18	
m,p-Xylenes	<0.00400	0.200	0.182	91	0.195	98	70-130	7	35	mg/kg	08.24.2020 22:18	
o-Xylene	<0.00200	0.100	0.0883	88	0.0952	95	70-130	8	35	mg/kg	08.24.2020 22:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		98		97		70-130	%	08.24.2020 22:18
4-Bromofluorobenzene	104		101		100		70-130	%	08.24.2020 22:18

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

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QC Summary 670795

Tetra Tech- Midland

Patron 23 #4H (8.08.19)

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3135427 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710087-1-BLK — LCS Sample Id: 7710087-1-BKS — LCSD Sample Id: 7710087-1-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	0.0920	92	0.0967	97	70-130	5	35	mg/kg	08.24.2020 14:38	
Toluene	<0.00200	0.100	0.0887	89	0.0904	90	70-130	2	35	mg/kg	08.24.2020 14:38	
Ethylbenzene	<0.00200	0.100	0.0930	93	0.0936	94	70-130	1	35	mg/kg	08.24.2020 14:38	
m,p-Xylenes	<0.00400	0.200	0.190	95	0.190	95	70-130	0	35	mg/kg	08.24.2020 14:38	
o-Xylene	<0.00200	0.100	0.0944	94	0.0945	95	70-130	0	35	mg/kg	08.24.2020 14:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		99		70-130	%	08.24.2020 14:38
4-Bromofluorobenzene	91		114		113		70-130	%	08.24.2020 14:38

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3135430 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670795-003 — MS Sample Id: 670795-003 S — MSD Sample Id: 670795-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0840	84	0.0903	91	70-130	7	35	mg/kg	08.24.2020 22:59	
Toluene	<0.00200	0.0998	0.0777	78	0.0837	85	70-130	7	35	mg/kg	08.24.2020 22:59	
Ethylbenzene	<0.00200	0.0998	0.0754	76	0.0811	82	70-130	7	35	mg/kg	08.24.2020 22:59	
m,p-Xylenes	<0.00399	0.200	0.151	76	0.161	81	70-130	6	35	mg/kg	08.24.2020 22:59	
o-Xylene	<0.00200	0.0998	0.0729	73	0.0777	78	70-130	6	35	mg/kg	08.24.2020 22:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		98		70-130	%	08.24.2020 22:59
4-Bromofluorobenzene	99		104		70-130	%	08.24.2020 22:59

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3135427 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670796-001 — MS Sample Id: 670796-001 S — MSD Sample Id: 670796-001 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	0.0885	89	0.0949	95	70-130	7	35	mg/kg	08.24.2020 15:20	
Toluene	<0.00200	0.100	0.0777	78	0.0857	86	70-130	10	35	mg/kg	08.24.2020 15:20	
Ethylbenzene	<0.00200	0.100	0.0767	77	0.0863	86	70-130	12	35	mg/kg	08.24.2020 15:20	
m,p-Xylenes	<0.00400	0.200	0.150	75	0.172	86	70-130	14	35	mg/kg	08.24.2020 15:20	
o-Xylene	<0.00200	0.100	0.0747	75	0.0852	85	70-130	13	35	mg/kg	08.24.2020 15:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	08.24.2020 15:20
4-Bromofluorobenzene	94		104		70-130	%	08.24.2020 15:20

MS/MSD Percent Recovery — [D] = 100*(C-A) / B
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery — [D] = 100 * (C) / [B]
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

Analysis Request of Chain of Custody Record

670795

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	**Site Manager:** Mike Carmona
Project Name: Patron 23 #4H (8.08.19)	
Project Location: (county, state) Eddy County, Texas	**Project #:** 212C-MD-02295
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2020 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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	TPH 8015R			Hold
	AH-1 0-1'	8/20/2020			X				X		1	N	X		X												X							
	AH-1 1'-1.5'	8/20/2020			X				X		1	N															X							
	AH-2 0-1'	8/20/2020			X				X		1	N	X		X												X							
	AH-2 1'-1.5'	8/20/2020			X				X		1	N															X							
	AH-3 0-1'	8/20/2020			X				X		1	N	X		X												X							
	AH-3 1'-1.5'	8/20/2020			X				X		1	N															X							
	AH-3 2'-2.5'	8/20/2020			X				X		1	N															X							
	AH-3 3'	8/20/2020			X				X		1	N															X							
	AH-4 0-1'	8/20/2020			X				X		1	N	X		X												X							
	AH-4 1'-1.5'	8/20/2020			X				X		1	N															X							

Relinquished by:	Date: 8/24	Time:	Received by: RTW Date: 8/24 Time: 1255
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature 2.4/2.2 -0.4

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

670795

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	**Site Manager:** Mike Carmona
Project Name: Patron 23 #4H (8.08.19)	
Project Location: (county, state) Eddy County, Texas	**Project #:** 212C-MD-02295
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2020)	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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	TPH 8015R			Hold
	AH-4 2'-2.5'	8/20/2020			X			X		1	N															X							
	AH-4 3'-3.5'	8/20/2020			X			X		1	N															X							
	AH-4 4'-4.5'	8/20/2020			X			X		1	N															X							
	AH-5 0-1'	8/20/2020			X			X		1	N	X		X												X							
	AH-5 1'-1.5'	8/20/2020			X			X		1	N															X							
	AH-5 2'-2.5'	8/20/2020			X			X		1	N															X							
	AH-5 3'-3.5'	8/20/2020			X			X		1	N															X							
	AH-5 4'-4.5'	8/20/2020			X			X		1	N															X							
	AH-6 0-1'	8/20/2020			X			X		1	N	X		X												X							
	AH-6 1'-1.5'	8/20/2020			X			X		1	N															X							

Relinquished by:	Date: 8/21	Time:	Received by: Date: 8/24 Time: 1755
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY
Sample Temperature 2.6/2.2

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

1070795

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	**Site Manager:** Mike Carmona
Project Name: Patron 23 #4H (8.08.19)	
Project Location: (county, state) Eddy County, Texas	**Project #:** 212C-MD-02295
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR 2020 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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	TPH 8015R				Hold
	AH-6 2'-2.5'	8/20/2020			X				X			1	N															X							
	AH-6 3'-3.5'	8/20/2020			X				X			1	N															X							
	AH-7 0-1'	8/20/2020			X				X			1	N	X		X												X							
	AH-7 1'-1.5'	8/20/2020			X				X			1	N															X							
	AH-7 2'-2.5'	8/20/2020			X				X			1	N															X							
	AH-7 3'-3.5'	8/20/2020			X				X			1	N															X							
	AH-8 0-1'	8/20/2020			X				X			1	N	X		X												X							
	AH-8 1'-1.5'	8/20/2020			X				X			1	N															X							
	AH-8 2'-2.5'	8/20/2020			X				X			1	N															X							
	AH-8 3'-3.5'	8/20/2020			X				X			1	N															X							

Relinquished by:	Date: 8/24	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 8/24 Time: 1255

LAB USE ONLY

Sample Temperature 2.6/2.2

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Analysis Request of Chain of Custody Record

L070795

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	**Site Manager:** Mike Carmona
Project Name: Patron 23 #4H (8.08.19)	
Project Location: (county, state) Eddy County, Texas	**Project #:** 212C-MD-02295
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2020 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
	AH-9 0-1'	8/20/2020			X				X			1	N
	AH-9 1'-1.5'	8/20/2020			X				X			1	N
	AH-9 2'-2.5'	8/20/2020			X				X			1	N
	AH-9 3'-3.5'	8/20/2020			X				X			1	N
	AH-9 4'-4.5'	8/20/2020			X				X			1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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	TPH 8015R			Hold
X		X												X							
														X							
														X							
														X							
														X							
														X							

Relinquished by: Date: 8/24 Time:
Received by: Date: 8/24 Time: 1255

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY
Sample Temperature 2.4/2.2

REMARKS:
- [ ] STANDARD
- [X] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 08.24.2020 12.55.00 PM

Work Order #: 670795

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

Temperature Measuring device used : IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	
#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: 08.24.2020
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 08.25.2020
Jessica Kramer

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Certificate of Analysis Summary 670796

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4h (8.08.19)

Project Id: 212CMD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested		670796-001		670796-002		670796-003		670796-004		670796-005		670796-006	
	Lab Id:	670796-001		670796-002		670796-003		670796-004		670796-005		670796-006	
	Field Id:	Horizontal-1 0-1'		Horizontal-2 0-1'		Horizontal-3 0-1'		Horizontal-4 0-1'		Horizontal-5 0-1'		Horizontal-6 0-1'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00	
BTEX by EPA 8021B	*Extracted:*	08.24.2020 13:30		08.24.2020 13:30		08.24.2020 13:30		08.24.2020 13:30		08.24.2020 13:30		08.24.2020 13:30	
	Analyzed:	08.24.2020 17:03		08.24.2020 21:48		08.24.2020 22:09		08.24.2020 22:29		08.24.2020 22:50		08.24.2020 23:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
m,p-Xylenes		<0.00399	0.00399	<0.00398	0.00398	<0.00398	0.00398	<0.00399	0.00399	<0.00397	0.00397	<0.00397	0.00397
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Chloride by EPA 300	*Extracted:*	08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 16:55		08.24.2020 15:50	
	Analyzed:	08.24.2020 22:27		08.24.2020 22:32		08.24.2020 22:37		08.24.2020 22:43		08.24.2020 22:48		08.24.2020 17:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		15.9	4.97	9.01	4.98	14.8	4.99	10.4	4.96	9.20	5.03	8.71	5.02
TPH by SW8015 Mod	*Extracted:*	08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00	
	Analyzed:	08.25.2020 01:30		08.24.2020 18:11		08.24.2020 18:35		08.24.2020 18:59		08.24.2020 19:23		08.24.2020 19:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9
Total TPH		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 670796

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 #4h (8.08.19)

Project Id: 212CMD-02295
Contact: Mike Carmona
Project Location: Eddy County, Texas

Date Received in Lab: Mon 08.24.2020 12:55
Report Date: 08.25.2020 16:28
Project Manager: Jessica Kramer

Analysis Requested		670796-007		670796-008		670796-009		670796-010			
	Field Id:	Horizontal-7 0-1'		Horizontal-8 0-1'		Horizontal-9 0-1'		Horizontal-10 0-1'			
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00		08.20.2020 00:00			
BTEX by EPA 8021B	*Extracted:*	08.24.2020 13:30		08.24.2020 13:30		08.24.2020 13:30		08.24.2020 13:30			
	Analyzed:	08.24.2020 23:30		08.24.2020 23:51		08.25.2020 00:11		08.25.2020 00:32			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198		
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198		
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198		
m,p-Xylenes		<0.00398	0.00398	<0.00399	0.00399	<0.00400	0.00400	<0.00397	0.00397		
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198		
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198		
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198		
Chloride by EPA 300	*Extracted:*	08.24.2020 15:50		08.24.2020 15:50		08.24.2020 15:50		08.24.2020 15:50			
	Analyzed:	08.24.2020 17:47		08.24.2020 17:53		08.24.2020 17:58		08.24.2020 18:03			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		6.16	4.99	8.71	4.96	67.1	5.05	10.3	5.03		
TPH by SW8015 Mod	*Extracted:*	08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00		08.24.2020 13:00			
	Analyzed:	08.24.2020 20:09		08.24.2020 20:32		08.24.2020 20:55		08.24.2020 21:18			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8		
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8		
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8		
Total TPH		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8		

BRL - Below Reporting Limit

Jessica Kramer

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Analytical Report 670796

for

Tetra Tech- Midland

Project Manager: Mike Carmona

Patron 23 #4h (8.08.19)

212CMD-02295

08.25.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-37), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), 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)

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08.25.2020

Project Manager: **Mike Carmona**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: Eurofins Xenco, LLC Report No(s): **670796**
Patron 23 #4h (8.08.19)
Project Address: Eddy County, Texas

Mike Carmona:

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) 670796. 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. 670796 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,

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

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Sample Cross Reference 670796

Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Horizontal-1 0-1'	S	08.20.2020 00:00		670796-001
Horizontal-2 0-1'	S	08.20.2020 00:00		670796-002
Horizontal-3 0-1'	S	08.20.2020 00:00		670796-003
Horizontal-4 0-1'	S	08.20.2020 00:00		670796-004
Horizontal-5 0-1'	S	08.20.2020 00:00		670796-005
Horizontal-6 0-1'	S	08.20.2020 00:00		670796-006
Horizontal-7 0-1'	S	08.20.2020 00:00		670796-007
Horizontal-8 0-1'	S	08.20.2020 00:00		670796-008
Horizontal-9 0-1'	S	08.20.2020 00:00		670796-009
Horizontal-10 0-1'	S	08.20.2020 00:00		670796-010

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CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Patron 23 #4h (8.08.19)

Project ID: *212CMD-02295*
Work Order Number(s): *670796*

Report Date: *08.25.2020*
Date Received: *08.24.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

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Certificate of Analytical Results 670796

Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-1 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-001 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.9**	4.97	mg/kg	08.24.2020 22:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.25.2020 01:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.25.2020 01:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.25.2020 01:30	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.25.2020 01:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-130	08.25.2020 01:30	
o-Terphenyl	84-15-1	111	%	70-130	08.25.2020 01:30	

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Certificate of Analytical Results 670796

Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-1 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-001 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 17:03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 17:03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 17:03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.24.2020 17:03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 17:03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 17:03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 17:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.24.2020 17:03	
4-Bromofluorobenzene	460-00-4	93	%	70-130	08.24.2020 17:03	

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Certificate of Analytical Results 670796

Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-2 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-002 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.01**	4.98	mg/kg	08.24.2020 22:32		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 18:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 18:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 18:11	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 18:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.24.2020 18:11	
o-Terphenyl	84-15-1	98	%	70-130	08.24.2020 18:11	

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Certificate of Analytical Results 670796

Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-2 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-002 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.24.2020 21:48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.24.2020 21:48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.24.2020 21:48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.24.2020 21:48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.24.2020 21:48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.24.2020 21:48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.24.2020 21:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.24.2020 21:48	
4-Bromofluorobenzene	460-00-4	110	%	70-130	08.24.2020 21:48	

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Certificate of Analytical Results 670796

Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-3 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-003 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.8**	4.99	mg/kg	08.24.2020 22:37		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 18:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 18:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 18:35	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 18:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-130	08.24.2020 18:35	
o-Terphenyl	84-15-1	106	%	70-130	08.24.2020 18:35	

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Certificate of Analytical Results 670796

Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-3 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-003 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.24.2020 22:09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.24.2020 22:09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.24.2020 22:09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.24.2020 22:09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.24.2020 22:09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.24.2020 22:09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.24.2020 22:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.24.2020 22:09	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.24.2020 22:09	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-4 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-004 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.4**	4.96	mg/kg	08.24.2020 22:43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.24.2020 18:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.24.2020 18:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.24.2020 18:59	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.24.2020 18:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-130	08.24.2020 18:59	
o-Terphenyl	84-15-1	101	%	70-130	08.24.2020 18:59	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-4 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-004 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 22:29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 22:29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 22:29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.24.2020 22:29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 22:29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 22:29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 22:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.24.2020 22:29	
4-Bromofluorobenzene	460-00-4	123	%	70-130	08.24.2020 22:29	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-5 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-005 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC % Moisture:

Analyst: SPC Date Prep: 08.24.2020 16:55 Basis: Wet Weight

Seq Number: 3135422

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.20**	5.03	mg/kg	08.24.2020 22:48		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 19:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 19:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 19:23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 19:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	08.24.2020 19:23	
o-Terphenyl	84-15-1	93	%	70-130	08.24.2020 19:23	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-5 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-005 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.24.2020 22:50	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.24.2020 22:50	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.24.2020 22:50	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.24.2020 22:50	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.24.2020 22:50	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.24.2020 22:50	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.24.2020 22:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.24.2020 22:50	
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.24.2020 22:50	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-6 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-006 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 15:50 Basis: Wet Weight

Seq Number: 3135418

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.71**	5.02	mg/kg	08.24.2020 17:32		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 19:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 19:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 19:46	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 19:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-130	08.24.2020 19:46	
o-Terphenyl	84-15-1	100	%	70-130	08.24.2020 19:46	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-6 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-006 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.24.2020 23:10	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.24.2020 23:10	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.24.2020 23:10	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.24.2020 23:10	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.24.2020 23:10	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.24.2020 23:10	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.24.2020 23:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.24.2020 23:10	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.24.2020 23:10	

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Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-7 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-007 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 15:50 Basis: Wet Weight

Seq Number: 3135418

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.16**	4.99	mg/kg	08.24.2020 17:47		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 20:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 20:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 20:09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 20:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-130	08.24.2020 20:09	
o-Terphenyl	84-15-1	101	%	70-130	08.24.2020 20:09	

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Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-7 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-007 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.24.2020 23:30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.24.2020 23:30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.24.2020 23:30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.24.2020 23:30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.24.2020 23:30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.24.2020 23:30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.24.2020 23:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.24.2020 23:30	
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.24.2020 23:30	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-8 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-008 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 15:50 Basis: Wet Weight

Seq Number: 3135418

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.71**	4.96	mg/kg	08.24.2020 17:53		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.24.2020 20:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	08.24.2020 20:32	
o-Terphenyl	84-15-1	104	%	70-130	08.24.2020 20:32	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-8 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-008 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.24.2020 23:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.24.2020 23:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.24.2020 23:51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.24.2020 23:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.24.2020 23:51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.24.2020 23:51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.24.2020 23:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.24.2020 23:51	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.24.2020 23:51	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-9 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-009 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 15:50 Basis: Wet Weight

Seq Number: 3135418

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**67.1**	5.05	mg/kg	08.24.2020 17:58		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.24.2020 20:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	08.24.2020 20:55	
o-Terphenyl	84-15-1	102	%	70-130	08.24.2020 20:55	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-9 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-009 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.25.2020 00:11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.25.2020 00:11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.25.2020 00:11	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.25.2020 00:11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.25.2020 00:11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.25.2020 00:11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.25.2020 00:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.25.2020 00:11	
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.25.2020 00:11	

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Tetra Tech- Midland, Midland, TX

Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-10 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-010 Date Collected: 08.20.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 08.24.2020 15:50 Basis: Wet Weight

Seq Number: 3135418

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.3**	5.03	mg/kg	08.24.2020 18:03		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 08.24.2020 13:00 Basis: Wet Weight

Seq Number: 3135481

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.24.2020 21:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.24.2020 21:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.24.2020 21:18	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.24.2020 21:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.24.2020 21:18	
o-Terphenyl	84-15-1	100	%	70-130	08.24.2020 21:18	

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Patron 23 #4h (8.08.19)

Sample Id: **Horizontal-10 0-1'** Matrix: Soil Date Received:08.24.2020 12:55

Lab Sample Id: 670796-010 Date Collected: 08.20.2020 00:00

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL % Moisture:

Analyst: KTL Date Prep: 08.24.2020 13:30 Basis: Wet Weight

Seq Number: 3135427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.25.2020 00:32	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.25.2020 00:32	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.25.2020 00:32	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.25.2020 00:32	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.25.2020 00:32	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.25.2020 00:32	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.25.2020 00:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.25.2020 00:32	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.25.2020 00:32	

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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

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QC Summary 670796

Tetra Tech- Midland

Patron 23 #4h (8.08.19)

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135418 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710057-1-BLK — LCS Sample Id: 7710057-1-BKS — LCSD Sample Id: 7710057-1-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	267	107	268	107	90-110	0	20	mg/kg	08.24.2020 17:21	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135422 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710063-1-BLK — LCS Sample Id: 7710063-1-BKS — LCSD Sample Id: 7710063-1-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	267	107	267	107	90-110	0	20	mg/kg	08.24.2020 20:15	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135418 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670796-006 — MS Sample Id: 670796-006 S — MSD Sample Id: 670796-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.71	251	275	106	274	106	90-110	0	20	mg/kg	08.24.2020 17:37	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135418 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670814-007 — MS Sample Id: 670814-007 S — MSD Sample Id: 670814-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	724	251	957	93	954	92	90-110	0	20	mg/kg	08.24.2020 18:51	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135422 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670795-021 — MS Sample Id: 670795-021 S — MSD Sample Id: 670795-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2100	1240	3410	106	3430	107	90-110	1	20	mg/kg	08.24.2020 20:31	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3135422 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670795-031 — MS Sample Id: 670795-031 S — MSD Sample Id: 670795-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.9	248	278	105	280	106	90-110	1	20	mg/kg	08.24.2020 21:45	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery — [D] = 100 * (C) / [B]
Log Difference — 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

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QC Summary 670796

Tetra Tech- Midland

Patron 23 #4h (8.08.19)

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135481 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710084-1-BLK — LCS Sample Id: 7710084-1-BKS — LCSD Sample Id: 7710084-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	912	91	905	91	70-130	1	20	mg/kg	08.24.2020 15:57	
Diesel Range Organics (DRO)	<50.0	1000	948	95	934	93	70-130	1	20	mg/kg	08.24.2020 15:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		99		100		70-130	%	08.24.2020 15:57
o-Terphenyl	99		95		94		70-130	%	08.24.2020 15:57

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135481 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710084-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.24.2020 15:32	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3135481 — Matrix: Soil — Date Prep: 08.24.2020
Parent Sample Id: 670796-001 — MS Sample Id: 670796-001 S — MSD Sample Id: 670796-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	904	91	925	93	70-130	2	20	mg/kg	08.24.2020 17:23	
Diesel Range Organics (DRO)	<49.9	997	981	98	1030	103	70-130	5	20	mg/kg	08.24.2020 17:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		107		70-130	%	08.24.2020 17:23
o-Terphenyl	98		101		70-130	%	08.24.2020 17:23

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3135427 — Matrix: Solid — Date Prep: 08.24.2020
MB Sample Id: 7710087-1-BLK — LCS Sample Id: 7710087-1-BKS — LCSD Sample Id: 7710087-1-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	0.0920	92	0.0967	97	70-130	5	35	mg/kg	08.24.2020 14:38	
Toluene	<0.00200	0.100	0.0887	89	0.0904	90	70-130	2	35	mg/kg	08.24.2020 14:38	
Ethylbenzene	<0.00200	0.100	0.0930	93	0.0936	94	70-130	1	35	mg/kg	08.24.2020 14:38	
m,p-Xylenes	<0.00400	0.200	0.190	95	0.190	95	70-130	0	35	mg/kg	08.24.2020 14:38	
o-Xylene	<0.00200	0.100	0.0944	94	0.0945	95	70-130	0	35	mg/kg	08.24.2020 14:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		99		70-130	%	08.24.2020 14:38
4-Bromofluorobenzene	91		114		113		70-130	%	08.24.2020 14:38

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

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QC Summary 670796

Tetra Tech- Midland

Patron 23 #4h (8.08.19)

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A

Seq Number: 3135427 Matrix: Soil Date Prep: 08.24.2020

Parent Sample Id: 670796-001 MS Sample Id: 670796-001 S MSD Sample Id: 670796-001 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	0.0885	89	0.0949	95	70-130	7	35	mg/kg	08.24.2020 15:20	
Toluene	<0.00200	0.100	0.0777	78	0.0857	86	70-130	10	35	mg/kg	08.24.2020 15:20	
Ethylbenzene	<0.00200	0.100	0.0767	77	0.0863	86	70-130	12	35	mg/kg	08.24.2020 15:20	
m,p-Xylenes	<0.00400	0.200	0.150	75	0.172	86	70-130	14	35	mg/kg	08.24.2020 15:20	
o-Xylene	<0.00200	0.100	0.0747	75	0.0852	85	70-130	13	35	mg/kg	08.24.2020 15:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	08.24.2020 15:20
4-Bromofluorobenzene	94		104		70-130	%	08.24.2020 15:20

MS/MSD Percent Recovery [D] = 100*(C-A) / B

Relative Percent Difference RPD = 200* | (C-E) / (C+E) |

LCS/LCSD Recovery [D] = 100 * (C) / [B]

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

C = MS/LCS Result

E = MSD/LCSD Result

MS = Matrix Spike

B = Spike Added

D = MSD/LCSD % Rec

Analysis Request of Chain of Custody Record

1207949 1207945 BT

Page 1 of 1

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	Site Manager: Mike Carmona
Project Name: Patron 23 #4H (8.08.19)	
Project Location: (county, state) Eddy County, Texas	Project #: ~~212C-MD-02295~~
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	Sampler Signature: Devin Dominguez
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2020 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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	TPH 8015R			Hold
	Horizontal-1 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-2 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-3 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-4 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-5 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-6 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-7 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-8 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-9 0-1'	8/20/2020			X			X		1	N	X		X												X							
	Horizontal-10 0-1'	8/20/2020			X			X		1	N	X		X												X							

ANALYSIS REQUEST
(Circle or Specify Method No.)

	Relinquished by:	Date:	Time:	Received by:	Date:	Time:
1		8/24		BTM	8/24	1755
2	Relinquished by:	Date:	Time:	Received by:	Date:	Time:
3	Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 2.4/2.2 -0.4

REMARKS:

- [ ] STANDARD
- [X] RUSH: Same Day 24 hr 48 hr (72 hr)
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 08.24.2020 12.55.00 PM

Work Order #: 670796

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

Temperature Measuring device used : IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.2
#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#: IR-

Checklist completed by: Brianna Teel Date: 08.24.2020

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 08.25.2020

Jessica Kramer

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Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	672000-001		672000-002		672000-003		672000-004		672000-005		672000-006	
	Field Id:	Trench #1 (0-1')		Trench #1 (1.5')		Trench #2 (0-1')		Trench #2 (1.5')		Trench #3 (0-1')		Trench #3 (1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00	
Chloride by EPA 300	***Extracted:***	09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50	
	Analyzed:	09.08.2020 20:03		09.08.2020 20:08		09.08.2020 20:13		09.08.2020 20:29		09.08.2020 19:42		09.08.2020 20:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1260	4.99	1900	24.8	1220	5.04	1430	25.0	21.5	5.02	20.3	4.97

BRL - Below Reporting Limit

Jessica Kramer

eurofins | Environment Testing Xenco

Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	672000-007		672000-008		672000-009		672000-010		672000-011		672000-012	
	Field Id:	Trench #3 (2')		Trench #3 (3')		Trench #4 (0-1')		Trench #4 (1')		Trench #4 (2')		Trench #4 (3')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00	
Chloride by EPA 300	***Extracted:***	09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50	
	Analyzed:	09.08.2020 20:40		09.08.2020 20:45		09.08.2020 20:50		09.08.2020 20:55		09.08.2020 21:11		09.08.2020 21:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4220	25.0	4350	25.0	43.8	4.97	19.7	4.96	22.2	5.03	114	4.97

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	672000-013		672000-014		672000-015		672000-016		672000-017		672000-018	
	Field Id:	Trench #4 (4')		Trench #4 (5')		Trench #4 (6')		Trench #5 (0-1')		Trench #5 (1')		Trench #5 (2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00	
Chloride by EPA 300	***Extracted:***	09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50		09.08.2020 16:50	
	Analyzed:	09.08.2020 21:32		09.08.2020 21:37		09.08.2020 21:43		09.08.2020 21:48		09.08.2020 21:53		09.08.2020 21:59	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7400	49.8	10100	50.5	9130	50.5	1010	5.05	1130	4.96	1290	25.0

BRL - Below Reporting Limit

Jessica Kramer

eurofins | Environment Testing Xenco

Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	672000-019		672000-020		672000-021		672000-022		672000-023		672000-024	
	Field Id:	Trench #5 (3.5')		Trench #6 (0-1')		Trench #6 (1')		Trench #6 (2')		Trench #6 (3')		Trench #6 (4')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00	
Chloride by EPA 300	***Extracted:***	09.08.2020 16:50		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45	
	Analyzed:	09.08.2020 22:04		09.09.2020 20:36		09.09.2020 20:51		09.09.2020 20:57		09.09.2020 21:02		09.09.2020 21:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4380	24.9	24.2 X	4.96	30.3	5.04	237	4.98	9590	100	9580	50.2

BRL - Below Reporting Limit

Jessica Kramer

eurofins | Environment Testing Xenco

Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	672000-025		672000-026		672000-027		672000-028		672000-029		672000-030	
	Field Id:	Trench #6 (5')		Trench #6 (6')		Trench #6 (7')		Trench #6 (8')		Trench #6 (9')		Trench #6 (10')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00	
Chloride by EPA 300	***Extracted:***	09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45	
	Analyzed:	09.09.2020 21:23		09.09.2020 21:28		09.09.2020 21:33		09.09.2020 21:39		09.09.2020 21:44		09.09.2020 21:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		16700	248	12700	100	7280	50.0	4330	24.9	5190	49.5	1750	24.8

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	672000-031		672000-032		672000-033		672000-034		672000-035		672000-036	
	Field Id:	Trench #6(11')		Trench #6 (12')		Trench #7 (0-1')		Trench #7 (1')		Trench #7 (2')		Trench #7 (3')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00	
Chloride by EPA 300	***Extracted:***	09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45	
	Analyzed:	09.09.2020 22:05		09.09.2020 22:10		09.09.2020 22:26		09.09.2020 22:31		09.09.2020 22:37		09.09.2020 22:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		130	5.03	124	4.99	61.6	4.97	58.4	5.00	73.3	4.96	344	5.05

BRL - Below Reporting Limit

Jessica Kramer

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Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested	*Lab Id:*	672000-037		672000-038		672000-039		672000-040		672000-041		672000-042	
	Field Id:	Trench #7 (4')		Trench #7 (5')		Trench #7 (6')		Trench #7 (7')		Trench #7 (8')		Trench #7 (9')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00		09.03.2020 00:00	
Chloride by EPA 300	*Extracted:*	09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:45		09.09.2020 15:30		09.09.2020 15:30		09.09.2020 15:30	
	Analyzed:	09.09.2020 22:47		09.09.2020 22:53		09.09.2020 22:58		09.09.2020 18:58		09.09.2020 19:04		09.09.2020 19:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2690	25.3	8340	49.8	1830	25.0	6400	49.8	2740	24.8	206	4.96

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Certificate of Analysis Summary 672000

Tetra Tech- Midland, Midland, TX

Project Name: Patron 23 Fed #4 (8.8.19)

Project Id: 212C-MD-02295
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Tue 09.08.2020 14:20
Report Date: 09.10.2020 12:03
Project Manager: Jessica Kramer

Analysis Requested	*Lab Id:*	672000-043					
	Field Id:	Trench #7 (10')					
	Depth:						
	Matrix:	SOIL					
	Sampled:	09.03.2020 00:00					
Chloride by EPA 300	*Extracted:*	09.09.2020 15:30					
	Analyzed:	09.09.2020 19:30					
	Units/RL:	mg/kg	RL				
Chloride		36.0	5.00				

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Jessica Kramer

Final 1.000

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Analytical Report 672000

for

Tetra Tech- Midland

Project Manager: Mike Carmona

Patron 23 Fed #4 (8.8.19)

212C-MD-02295

09.10.2020

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 (2019-058), 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)

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09.10.2020

Project Manager: **Mike Carmona**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: Eurofins Xenco, LLC Report No(s): **672000**
Patron 23 Fed #4 (8.8.19)
Project Address: Eddy Co, NM

Mike Carmona:

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) 672000. 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. 672000 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,

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

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Sample Cross Reference 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench #1 (0-1')	S	09.03.2020 00:00		672000-001
Trench #1 (1.5')	S	09.03.2020 00:00		672000-002
Trench #2 (0-1')	S	09.03.2020 00:00		672000-003
Trench #2 (1.5')	S	09.03.2020 00:00		672000-004
Trench #3 (0-1')	S	09.03.2020 00:00		672000-005
Trench #3 (1')	S	09.03.2020 00:00		672000-006
Trench #3 (2')	S	09.03.2020 00:00		672000-007
Trench #3 (3')	S	09.03.2020 00:00		672000-008
Trench #4 (0-1')	S	09.03.2020 00:00		672000-009
Trench #4 (1')	S	09.03.2020 00:00		672000-010
Trench #4 (2')	S	09.03.2020 00:00		672000-011
Trench #4 (3')	S	09.03.2020 00:00		672000-012
Trench #4 (4')	S	09.03.2020 00:00		672000-013
Trench #4 (5')	S	09.03.2020 00:00		672000-014
Trench #4 (6')	S	09.03.2020 00:00		672000-015
Trench #5 (0-1')	S	09.03.2020 00:00		672000-016
Trench #5 (1')	S	09.03.2020 00:00		672000-017
Trench #5 (2')	S	09.03.2020 00:00		672000-018
Trench #5 (3.5')	S	09.03.2020 00:00		672000-019
Trench #6 (0-1')	S	09.03.2020 00:00		672000-020
Trench #6 (1')	S	09.03.2020 00:00		672000-021
Trench #6 (2')	S	09.03.2020 00:00		672000-022
Trench #6 (3')	S	09.03.2020 00:00		672000-023
Trench #6 (4')	S	09.03.2020 00:00		672000-024
Trench #6 (5')	S	09.03.2020 00:00		672000-025
Trench #6 (6')	S	09.03.2020 00:00		672000-026
Trench #6 (7')	S	09.03.2020 00:00		672000-027
Trench #6 (8')	S	09.03.2020 00:00		672000-028
Trench #6 (9')	S	09.03.2020 00:00		672000-029
Trench #6 (10')	S	09.03.2020 00:00		672000-030
Trench #6(11')	S	09.03.2020 00:00		672000-031
Trench #6 (12')	S	09.03.2020 00:00		672000-032
Trench #7 (0-1')	S	09.03.2020 00:00		672000-033
Trench #7 (1')	S	09.03.2020 00:00		672000-034
Trench #7 (2')	S	09.03.2020 00:00		672000-035
Trench #7 (3')	S	09.03.2020 00:00		672000-036
Trench #7 (4')	S	09.03.2020 00:00		672000-037
Trench #7 (5')	S	09.03.2020 00:00		672000-038
Trench #7 (6')	S	09.03.2020 00:00		672000-039
Trench #7 (7')	S	09.03.2020 00:00		672000-040
Trench #7 (8')	S	09.03.2020 00:00		672000-041
Trench #7 (9')	S	09.03.2020 00:00		672000-042
Trench #7 (10')	S	09.03.2020 00:00		672000-043

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CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Patron 23 Fed #4 (8.8.19)

Project ID: *212C-MD-02295*
Work Order Number(s): *672000*

Report Date: *09.10.2020*
Date Received: *09.08.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3136753 Chloride by EPA 300

Lab Sample ID 672000-030 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 672000-020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -039.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id: **Trench #1 (0-1')** Matrix: Soil Date Received:09.08.2020 14:20

Lab Sample Id: 672000-001 Date Collected: 09.03.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 09.08.2020 16:50 Basis: Wet Weight

Seq Number: 3136621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1260**	4.99	mg/kg	09.08.2020 20:03		1

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #1 (1.5')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-002	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1900**	24.8	mg/kg	09.08.2020 20:08		5

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id: **Trench #2 (0-1')** Matrix: Soil Date Received:09.08.2020 14:20

Lab Sample Id: 672000-003 Date Collected: 09.03.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 09.08.2020 16:50 Basis: Wet Weight

Seq Number: 3136621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1220**	5.04	mg/kg	09.08.2020 20:13		1

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #2 (1.5')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-004	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1430**	25.0	mg/kg	09.08.2020 20:29		5

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #3 (0-1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-005	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.5**	5.02	mg/kg	09.08.2020 19:42		1

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #3 (1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-006	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.3**	4.97	mg/kg	09.08.2020 20:34		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #3 (2')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-007	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4220**	25.0	mg/kg	09.08.2020 20:40		5

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #3 (3')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-008	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4350**	25.0	mg/kg	09.08.2020 20:45		5

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #4 (0-1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-009	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**43.8**	4.97	mg/kg	09.08.2020 20:50		1

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #4 (1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-010	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.7**	4.96	mg/kg	09.08.2020 20:55		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #4 (2')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-011	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.2**	5.03	mg/kg	09.08.2020 21:11		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #4 (3')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-012	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**114**	4.97	mg/kg	09.08.2020 21:16		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #4 (4')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-013	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7400**	49.8	mg/kg	09.08.2020 21:32		10

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #4 (5')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-014	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10100**	50.5	mg/kg	09.08.2020 21:37		10

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #4 (6')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-015	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9130**	50.5	mg/kg	09.08.2020 21:43		10

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #5 (0-1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-016	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1010**	5.05	mg/kg	09.08.2020 21:48		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #5 (1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-017	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.08.2020 16:50	Basis:	Wet Weight
Seq Number:	3136621				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1130**	4.96	mg/kg	09.08.2020 21:53		1

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Certificate of Analytical Results 672000

Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id: **Trench #5 (2')** Matrix: Soil Date Received:09.08.2020 14:20

Lab Sample Id: 672000-018 Date Collected: 09.03.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 09.08.2020 16:50 Basis: Wet Weight

Seq Number: 3136621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1290**	25.0	mg/kg	09.08.2020 21:59		5

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id: **Trench #5 (3.5')** Matrix: Soil Date Received:09.08.2020 14:20

Lab Sample Id: 672000-019 Date Collected: 09.03.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 09.08.2020 16:50 Basis: Wet Weight

Seq Number: 3136621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4380**	24.9	mg/kg	09.08.2020 22:04		5

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (0-1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-020	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.2**	4.96	mg/kg	09.09.2020 20:36	X	1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-021	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**30.3**	5.04	mg/kg	09.09.2020 20:51		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (2')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-022	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**237**	4.98	mg/kg	09.09.2020 20:57		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (3')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-023	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9590**	100	mg/kg	09.09.2020 21:02		20

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (4')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-024	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9580**	50.2	mg/kg	09.09.2020 21:07		10

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (5')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-025	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16700**	248	mg/kg	09.09.2020 21:23		50

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (6')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-026	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12700**	100	mg/kg	09.09.2020 21:28		20

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (7')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-027	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7280**	50.0	mg/kg	09.09.2020 21:33		10

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (8')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-028	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4330**	24.9	mg/kg	09.09.2020 21:39		5

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (9')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-029	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5190**	49.5	mg/kg	09.09.2020 21:44		10

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (10')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-030	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1750**	24.8	mg/kg	09.09.2020 21:49		5

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6(11')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-031	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**130**	5.03	mg/kg	09.09.2020 22:05		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #6 (12')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-032	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**124**	4.99	mg/kg	09.09.2020 22:10		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (0-1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-033	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**61.6**	4.97	mg/kg	09.09.2020 22:26		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (1')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-034	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**58.4**	5.00	mg/kg	09.09.2020 22:31		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (2')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-035	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**73.3**	4.96	mg/kg	09.09.2020 22:37		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (3')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-036	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**344**	5.05	mg/kg	09.09.2020 22:42		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (4')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-037	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2690**	25.3	mg/kg	09.09.2020 22:47		5

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (5')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-038	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8340**	49.8	mg/kg	09.09.2020 22:53		10

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (6')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-039	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:45	Basis:	Wet Weight
Seq Number:	3136753				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1830**	25.0	mg/kg	09.09.2020 22:58		5

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (7')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-040	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:30	Basis:	Wet Weight
Seq Number:	3136752				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6400**	49.8	mg/kg	09.09.2020 18:58		10

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (8')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-041	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:30	Basis:	Wet Weight
Seq Number:	3136752				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2740**	24.8	mg/kg	09.09.2020 19:04		5

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (9')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-042	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:30	Basis:	Wet Weight
Seq Number:	3136752				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**206**	4.96	mg/kg	09.09.2020 19:23		1

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Tetra Tech- Midland, Midland, TX

Patron 23 Fed #4 (8.8.19)

Sample Id:	**Trench #7 (10')**	Matrix:	Soil	Date Received:	09.08.2020 14:20
Lab Sample Id:	672000-043	Date Collected:	09.03.2020 00:00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.09.2020 15:30	Basis:	Wet Weight
Seq Number:	3136752				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**36.0**	5.00	mg/kg	09.09.2020 19:30		1

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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

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QC Summary 672000

Tetra Tech- Midland

Patron 23 Fed #4 (8.8.19)

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136621 — Matrix: Solid — Date Prep: 09.08.2020
MB Sample Id: 7710947-1-BLK — LCS Sample Id: 7710947-1-BKS — LCSD Sample Id: 7710947-1-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	266	106	269	108	90-110	1	20	mg/kg	09.08.2020 19:31	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136752 — Matrix: Solid — Date Prep: 09.09.2020
MB Sample Id: 7711025-1-BLK — LCS Sample Id: 7711025-1-BKS — LCSD Sample Id: 7711025-1-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	266	106	265	106	90-110	0	20	mg/kg	09.09.2020 16:59	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136753 — Matrix: Solid — Date Prep: 09.09.2020
MB Sample Id: 7711027-1-BLK — LCS Sample Id: 7711027-1-BKS — LCSD Sample Id: 7711027-1-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	262	105	262	105	90-110	0	20	mg/kg	09.09.2020 20:25	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136621 — Matrix: Soil — Date Prep: 09.08.2020
Parent Sample Id: 672000-005 — MS Sample Id: 672000-005 S — MSD Sample Id: 672000-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	21.5	251	289	107	290	107	90-110	0	20	mg/kg	09.08.2020 19:47	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136621 — Matrix: Soil — Date Prep: 09.08.2020
Parent Sample Id: 672000-010 — MS Sample Id: 672000-010 S — MSD Sample Id: 672000-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.7	248	280	105	282	106	90-110	1	20	mg/kg	09.08.2020 21:01	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136752 — Matrix: Soil — Date Prep: 09.09.2020
Parent Sample Id: 672068-001 — MS Sample Id: 672068-001 S — MSD Sample Id: 672068-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	42.5	248	296	102	298	103	90-110	1	20	mg/kg	09.09.2020 17:18	

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

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QC Summary 672000

Tetra Tech- Midland

Patron 23 Fed #4 (8.8.19)

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136752 — Matrix: Soil — Date Prep: 09.09.2020
Parent Sample Id: 672071-002 — MS Sample Id: 672071-002 S — MSD Sample Id: 672071-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13.8	253	275	103	275	103	90-110	0	20	mg/kg	09.09.2020 18:46	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136753 — Matrix: Soil — Date Prep: 09.09.2020
Parent Sample Id: 672000-020 — MS Sample Id: 672000-020 S — MSD Sample Id: 672000-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.2	248	299	111	300	111	90-110	0	20	mg/kg	09.09.2020 20:41	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3136753 — Matrix: Soil — Date Prep: 09.09.2020
Parent Sample Id: 672000-030 — MS Sample Id: 672000-030 S — MSD Sample Id: 672000-030 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1750	1240	3080	107	3080	107	90-110	0	20	mg/kg	09.09.2020 21:55	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery — [D] = 100 * (C) / [B]
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

167000

Client Name: COG	Site Manager: Mike Carmona
Project Name: Patron 23 Fed #4 (8.8.19)	
Project Location: (county, state) Eddy Co, NM	Project #: 212C-MD-02295
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	Sampler Signature: Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2020 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
	Trench #1 (0-1')	9/3/2020			X				X			1	N
	Trench #1 (1.5')	9/3/2020			X				X			1	N
	Trench #2 (0-1')	9/3/2020			X				X			1	N
	Trench #2 (1.5')	9/3/2020			X				X			1	N
	Trench #3 (0-1')	9/3/2020			X				X			1	N
	Trench #3 (1')	9/3/2020			X				X			1	N
	Trench #3 (2')	9/3/2020			X				X			1	N
	Trench #3 (3')	9/3/2020			X				X			1	N
	Trench #4 (0-1')	9/3/2020			X				X			1	N
	Trench #4 (1')	9/3/2020			X				X			1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

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

Relinquished by: Mike Carmona Date: 9/8/2020 Time: 1420
Received by: [signature] Date: 9/8/20 Time: 1420

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY

Sample Temperature: 1.5 | 1.1 -0.4

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

672000

Client Name: COG	Site Manager: Mike Carmona
Project Name: Patron 23 Fed #4 (8.8.19)	
Project Location: (county, state) Eddy Co, NM	Project #: 212C-MD-02295
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	Sampler Signature: Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)
	Trench #4 (2')	9/3/2020			X				X			1	N
	Trench #4 (3')	9/3/2020			X				X			1	N
	Trench #4 (4')	9/3/2020			X				X			1	N
	Trench #4 (5')	9/3/2020			X				X			1	N
	Trench #4 (6')	9/3/2020			X				X			1	N
	Trench #5 (0-1')	9/3/2020			X				X			1	N
	Trench #5 (1')	9/3/2020			X				X			1	N
	Trench #5 (2')	9/3/2020			X				X			1	N
	Trench #5 (3.5')	9/3/2020			X				X			1	N
	Trench #6 (0-1')	9/3/2020			X				X			1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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	Sulfate TDS	Chloride	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
														X								
														X								
														X								
														X								
														X								
														X								
														X								
														X								
														X								
														X								

Relinquished by: Mila Date: 9/8/2020 Time: 1420 — Received by: Date: 9/8/20 Time: 1430

Relinquished by: Date: Time: — Received by: Date: Time:

Relinquished by: Date: Time: — Received by: Date: Time:

LAB USE ONLY

Sample Temperature 1.5 | 1.1

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

672000

Client Name: COG	Site Manager: Mike Carmona
Project Name: Patron 23 Fed #4 (8.8.19)	
Project Location: (county, state) Eddy Co, NM	Project #: 212C-MD-02295
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	Sampler Signature: Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)
	Trench #6 (1')	9/3/2020			X				X			1	N
	Trench #6 (2')	9/3/2020			X				X			1	N
	Trench #6 (3')	9/3/2020			X				X			1	N
	Trench #6 (4')	9/3/2020			X				X			1	N
	Trench #6 (5')	9/3/2020			X				X			1	N
	Trench #6 (6')	9/3/2020			X				X			1	N
	Trench #6 (7')	9/3/2020			X				X			1	N
	Trench #6 (8')	9/3/2020			X				X			1	N
	Trench #6 (9')	9/3/2020			X				X			1	N
	Trench #6 (10')	9/3/2020			X				X			1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

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

Relinquished by: Mike Carmona Date: 9/8/2020 Time: 1420
Received by: Date: 9/8/20 Time: 1420

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY
Sample Temperature
1.5 | 1.1

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

672000

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: Patron 23 Fed #4 (8.8.19)	
Project Location: (county, state) Eddy Co, NM	**Project #:** 212C-MD-02295
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	Trench #6 (11')	9/3/2020			X				X			1	N																X							
	Trench #6 (12')	9/3/2020			X				X			1	N																X							
	Trench #7 (0-1')	9/3/2020			X				X			1	N																X							
	Trench #7 (1')	9/3/2020			X				X			1	N																X							
	Trench #7 (2')	9/3/2020			X				X			1	N																X							
	Trench #7 (3')	9/3/2020			X				X			1	N																X							
	Trench #7 (4')	9/3/2020			X				X			1	N																X							
	Trench #7 (5')	9/3/2020			X				X			1	N																X							
	Trench #7 (6')	9/3/2020			X				X			1	N																X							
	Trench #7 (7')	9/3/2020			X				X			1	N																X							

Relinquished by: Mike Carmona	Date: 9/8/2020	Time: 1420	Received by: [signature] Date: 9/8/20 Time: 1470
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature 1.5/1.1

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

10/2020

Client Name: COG	Site Manager: Mike Carmona
Project Name: Patron 23 Fed #4 (8.8.19)	
Project Location: (county, state) Eddy Co, NM	Project #: 212C-MD-02295
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	Sampler Signature: Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	Tench #7 (8')	9/3/2020			X				X			1	N															X				
	Tench #7 (9')	9/3/2020			X				X			1	N															X				
	Tench #7 (10')	9/3/2020			X				X			1	N															X				

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Conner Moehring	9/8/2020	1420		9/8/20	1420
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 1.5/1.1

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 09.08.2020 02.20.00 PM

Work Order #: 672000

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

Temperature Measuring device used : IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 09.08.2020
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 09.09.2020
Jessica Kramer

OCD Permitting

[C-141] Release Corrective Action (C-141) Application

Submission Information

Submission ID:	11098	**Districts:**	Artesia
Operator:	[229137] COG OPERATING LLC	**Counties:**	Eddy
Description:	COG OPERATING LLC [229137] PATRON 23 FEDERAL #4H FLOWLINE nAB1924840999 {Discovery: 08/08/2019, Active, , Federal}		
Status:	REJECTED		
Status Date:	02/18/2021		
References (2):	fAB1924840625, nAB1924840999		

Forms

Attachments: C-141

Questions

This submission type does not have questions, at this time.

Acknowledgments

This submission type does not have acknowledgments, at this time.

Comments

Summary: *chensley (2/18/2021),* If Company chooses not to drill a borehole to confirm the depth to groundwater, the site must be remediated to meet the Closure Criteria in Table 1 for groundwater at a depth of 50 feet or less.

Conditions

No conditions found for this submission.

Reasons

Summary: *chensley (2/18/2021),* If you feel the depth to groundwater is >100', a shallow borehole can be drilled to 105' allowing for verification of the depth. If water is not visible after reaching bottom-hole and waiting 72 hours, sample points would be allowed for remediation. We would just need a copy of the driller's log.

chensley (2/18/2021), Additional horizontal delineation samples will need to be established on the boundaries at AH-1, AH-2, AH-3, and AH-4. Preferably along the lease road.

APPENDIX D
Laboratory Analytical Data

CARDINAL Laboratories

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

December 29, 2021

SAM ABBOTT

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: PATRON 23 FED #4H

Enclosed are the results of analyses for samples received by the laboratory on 12/28/21 13:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 11 (0-1') (H213725-01)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.1 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	206	103	200	2.77	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	212	106	200	6.44	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *113 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *117 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 11 (2'-3') (H213725-02)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.2 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	206	103	200	2.77	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	212	106	200	6.44	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *118 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *123 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 11 (3'-4') (H213725-03)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.3 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	206	103	200	2.77	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	212	106	200	6.44	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *116 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *117 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 12 (0-1') (H213725-04)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.6 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	206	103	200	2.77	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	212	106	200	6.44	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *119 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *122 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 12 (2'-3') (H213725-05)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.3 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	206	103	200	2.77	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	212	106	200	6.44	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *105 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *105 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 12 (3'-4') (H213725-06)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.2 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	206	103	200	2.77	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	212	106	200	6.44	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *120 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *122 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 13 (0-1') (H213725-07)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.8 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	200	99.9	200	4.55	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	220	110	200	6.34	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *95.7 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *103 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 13 (2'-3') (H213725-08)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.9 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	200	99.9	200	4.55	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	220	110	200	6.34	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *94.5 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *102 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/28/2021	Sampling Date:	12/27/2021
Reported:	12/29/2021	Sampling Type:	Soil
Project Name:	PATRON 23 FED #4H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-02646	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO NM		

Sample ID: H 13 (3'-4') (H213725-09)

BTEX 8021B mg/kg Analyzed By: MS/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/28/2021	ND	2.00	99.8	2.00	7.90	
Toluene*	<0.050	0.050	12/28/2021	ND	1.88	93.9	2.00	7.98	
Ethylbenzene*	<0.050	0.050	12/28/2021	ND	1.86	92.8	2.00	8.74	
Total Xylenes*	<0.150	0.150	12/28/2021	ND	5.74	95.7	6.00	8.98	
Total BTEX	<0.300	0.300	12/28/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.9 %* *69.9-140*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2021	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2021	ND	200	99.9	200	4.55	
DRO >C10-C28*	<10.0	10.0	12/28/2021	ND	220	110	200	6.34	
EXT DRO >C28-C36	<10.0	10.0	12/28/2021	ND					

Surrogate: 1-Chlorooctane *95.8 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *104 %* *59.5-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Tetra Tech	**BILL TO**		
Project Manager: Sam Abbott	P.O. #:		
Address:	Company: Tetra Tech		
City: State: Zip:	Attn: Sam Abbott		
Phone #: Fax #:	Address:		
Project #: 212C-MD-02646 Project Owner: ConocoPhillips	City:		
Project Name: Patron 23 Fed. #4H	State: Zip:		
Project Location: Eddy County, NM	Phone #: 512-739-7874		
Sampler Name: Colton Bickerstaff	Fax #:		

ANALYSIS REQUEST

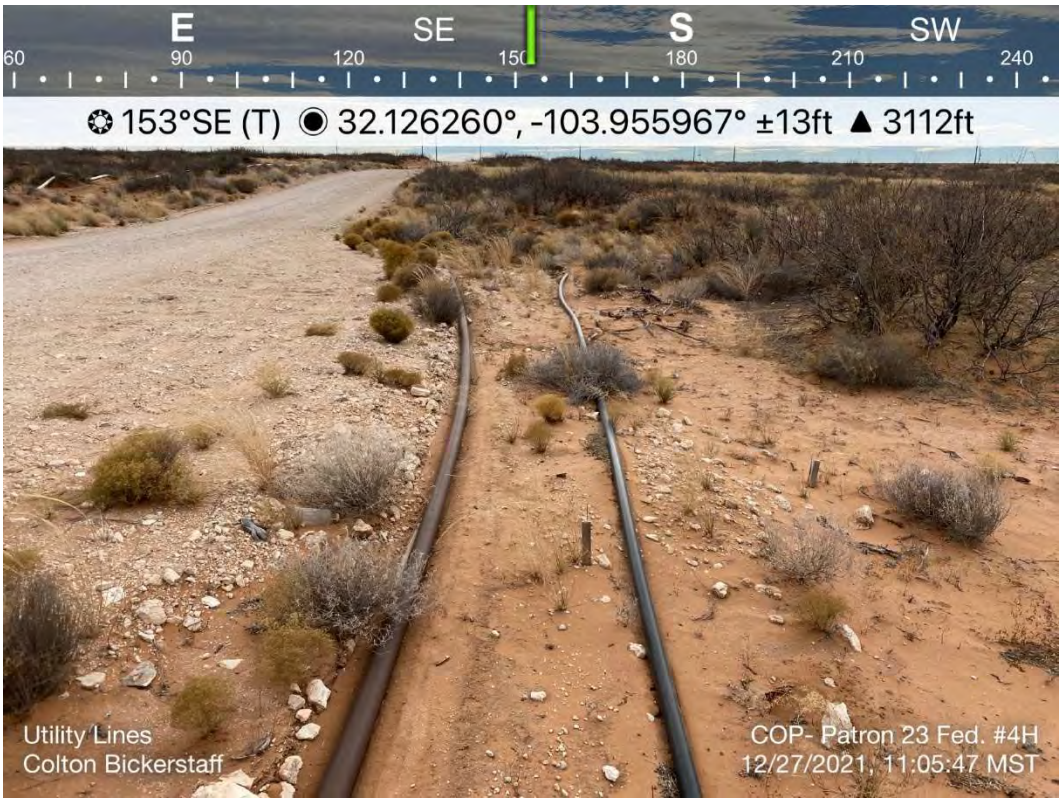
FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M (GRO-DRO-ORO)	Chloride 300.0 4500										
H213725																											
1	H11 (0-1')	G	1			X					X		12/27/21		X	X	X										
2	H11 (2'-3')																										
3	H11 (3'-4')																										
4	H12 (0-1')																										
5	H12 (2'-3')																										
6	H12 (3'-4')																										
7	H13 (0-1')																										
8	H13 (2'-3')																										
9	H13 (3'-4')																										

Relinquished By: Colton Bickerstaff	Date: 12/28/21 Time: 1330	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	All Results are emailed. Please provide Email address: Sam.Abbott@tetratech.com
			REMARKS: Email invoice, results to Sam Abbott
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 1.5 Corrected Temp. °C 1.0	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) TO
Turnaround Time: Standard ☐ Rush ☒ (24 hr.) Thermometer ID #113 Correction Factor -0.5°C	Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No	Observed Temp. °C Corrected Temp. °C	

FORM-006 R 3.2 10/07/21

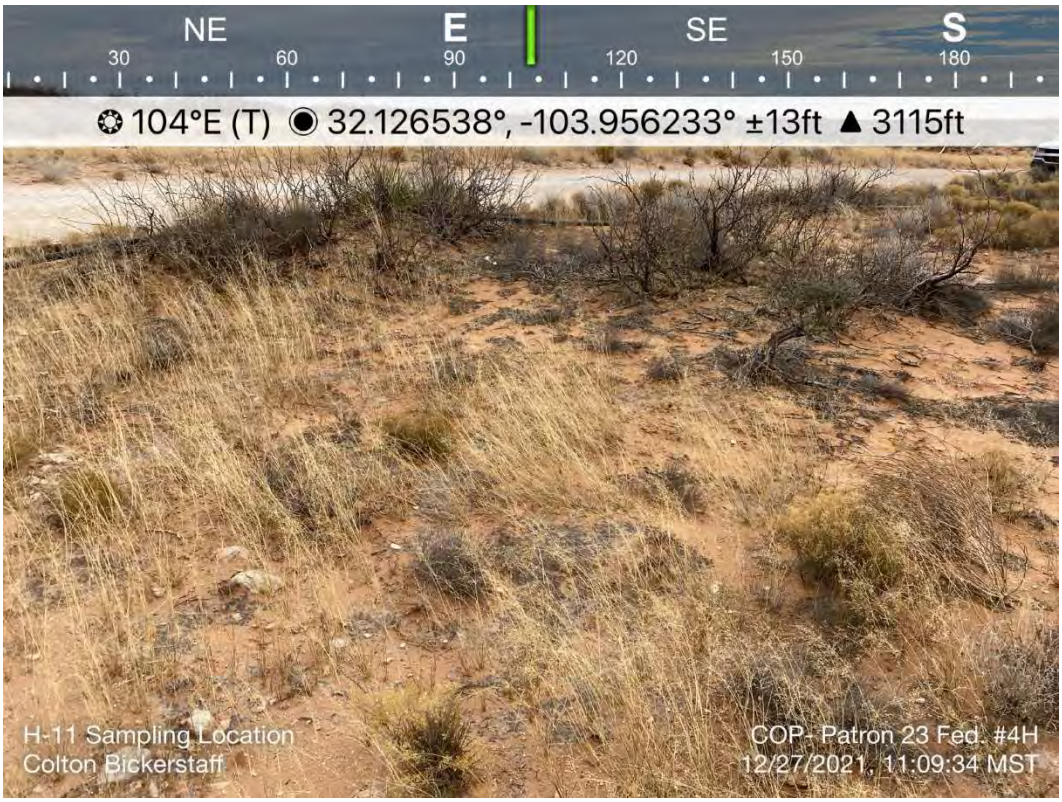
† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

APPENDIX E
Photographic Documentation

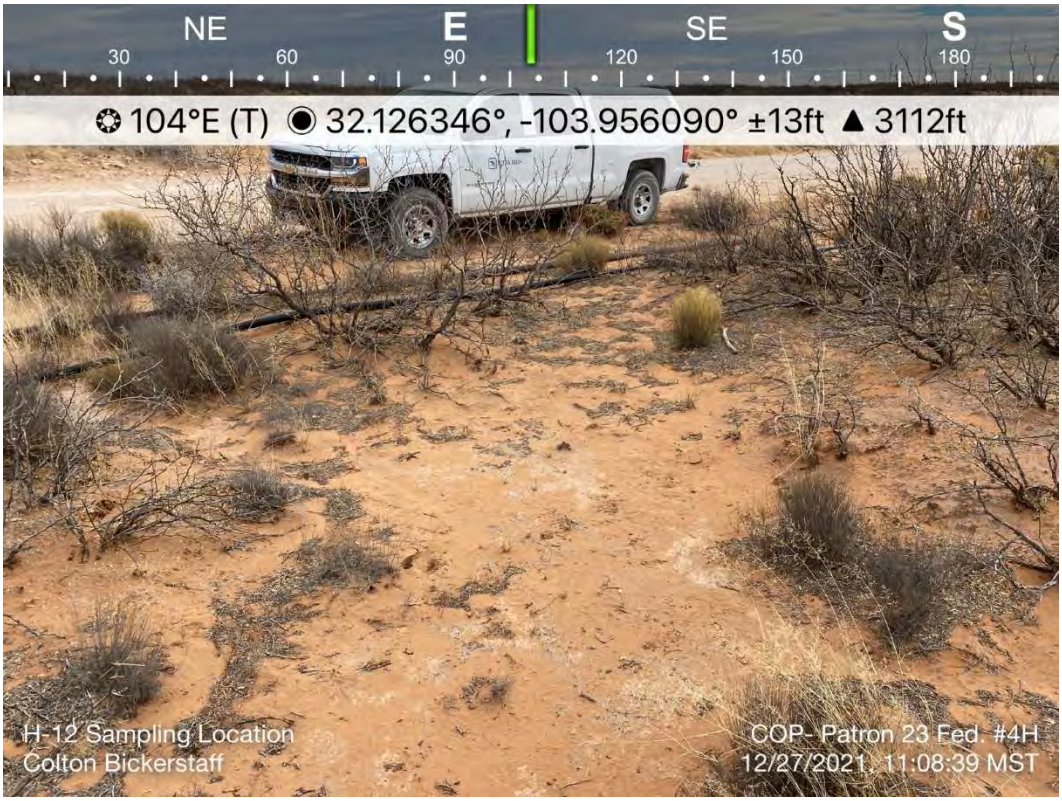


TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View southeast. Parallel lines on west side of dirt road.	1
	SITE NAME	Patron 23 Federal 4H	12/27/2021

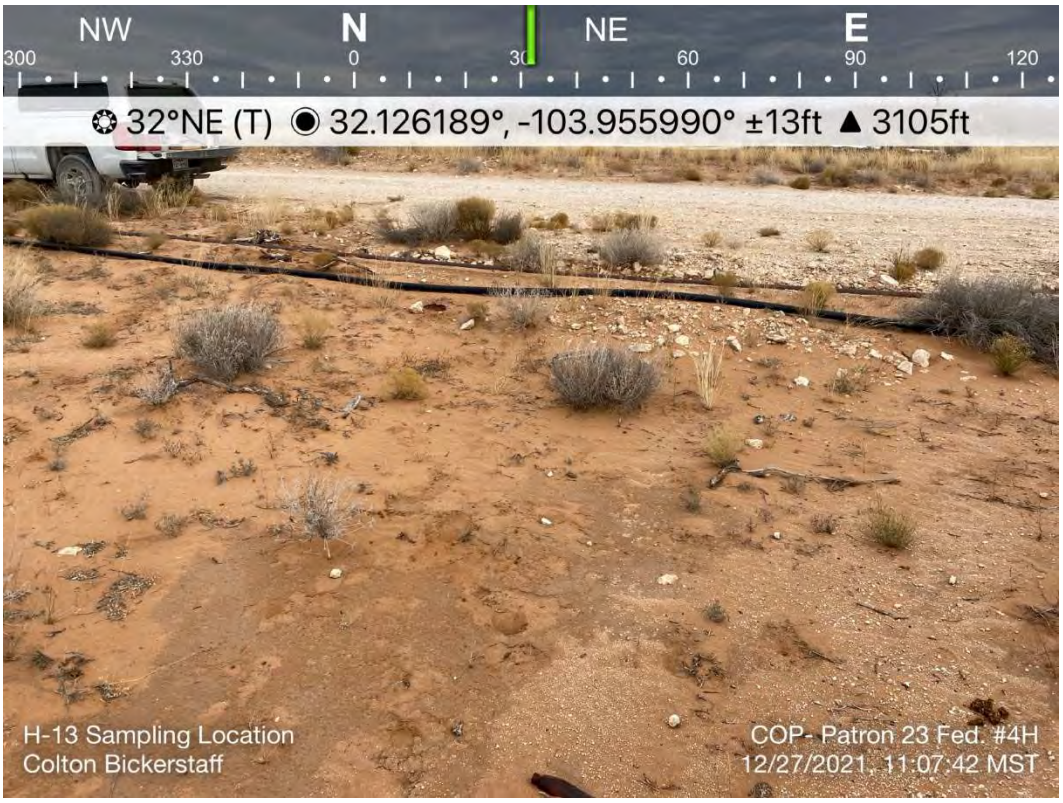
TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View southeast. Single line on east side of dirt road.	2
	SITE NAME	Patron 23 Federal 4H	12/27/2021



TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View east. H-11 sample location.	3
	SITE NAME	Patron 23 Federal 4H	12/27/2021

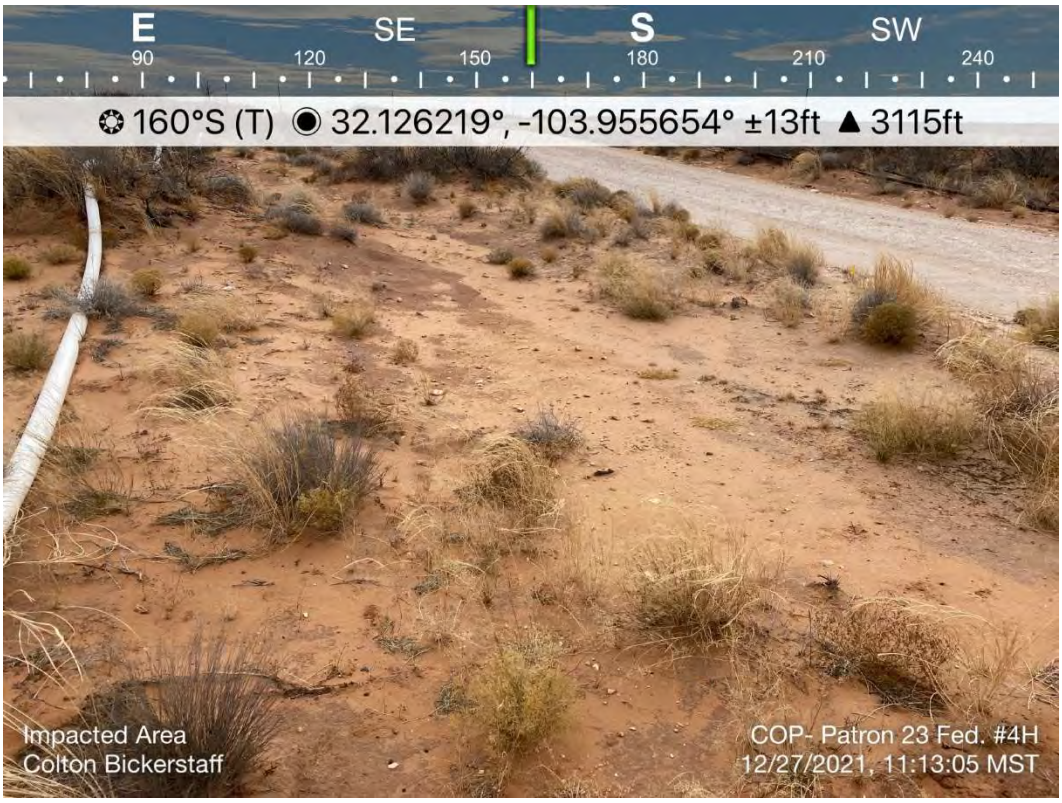


TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View east. H-12 sample location.	4
	SITE NAME	Patron 23 Federal 4H	12/27/2021



TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View northeast. H-13 sample location.	5
	SITE NAME	Patron 23 Federal 4H	12/27/2021

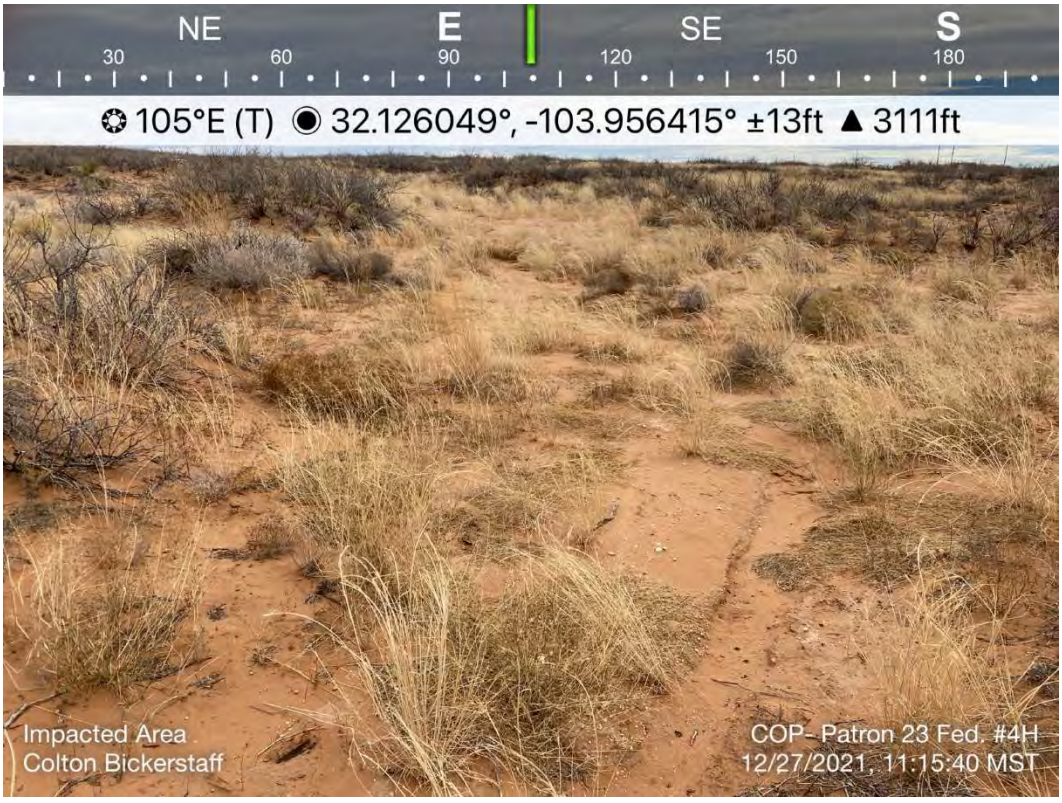
TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View south-southeast. Northeastern section of release extent.	6
	SITE NAME	Patron 23 Federal 4H	12/27/2021



TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View south-southeast. Southeastern section of release extent.	7
	SITE NAME	Patron 23 Federal 4H	12/27/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View west-southwest. Central section of release extent.	8
	SITE NAME	Patron 23 Federal 4H	12/27/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View west. Central section of release extent.	9
	SITE NAME	Patron 23 Federal 4H	12/27/2021



TETRA TECH, INC. PROJECT NO. 212C-MD-02646	DESCRIPTION	View east. Western section of release extent.	10
	SITE NAME	Patron 23 Federal 4H	12/27/2021

APPENDIX F
NMSLO Seed Mix Details

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eddy Area, New Mexico

January 10, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 17, Sep 12, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
TC	Tonuco loamy sand, 0 to 3 percent slopes, eroded	6.5	100.0%
Totals for Area of Interest		**6.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eddy Area, New Mexico

TC—Tonuco loamy sand, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w60
Elevation: 3,000 to 4,100 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 200 to 217 days
Farmland classification: Not prime farmland

Map Unit Composition

Tonuco and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tonuco

Setting

Landform: Plains, alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 5 inches: loamy sand
H2 - 5 to 15 inches: loamy fine sand
H3 - 15 to 19 inches: indurated

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 6 to 20 inches to petrocalcic
Drainage class: Excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R042XC004NM - Sandy
Hydric soil rating: No

Minor Components

Tonuco

Percent of map unit: 1 percent

Ecological site: R042XC004NM - Sandy
Hydric soil rating: No

Dune land

Percent of map unit: 1 percent
Hydric soil rating: No

1 REVEGETATION PLANS

The following Revegetation Plans were developed for revegetation of sites in southeastern New Mexico. To determine which revegetation plan is appropriate follow procedures in the section titled Determining the Revegetation Plan.

Revegetation Plans contain seed mixtures, as well as seed bed preparation and planting requirements. The detailed instructions for seedbed preparation and planting can be found in the section Revegetation Techniques.

Table 3 - Revegetation Plans, Codes, and Soil Types for Southeastern New Mexico

REVEGTATION PLANS	CODE	SOIL TEXTURES
Clay	C	Clay, Silty Clay, Stony Silty Clay, Clay Loam, Silty Clay Loam (including saline and sodic Clay soils)
Loam	L	Silty Loam, Cobbly Silt Loam, Stony Silt Loam, Silt, Loam, Sandy, Clay Loam
Sandy Loam	SL	Very Fine Sandy Loam, Fine Sandy Loam, Cobbly Fine Sandy Loam, Sandy Loam, Cobbly Sandy Loam, Gravelly Fine Sandy Loam, Very Gravelly Fine Sand Loam, Stony Fine Sandy Loam, Stony Sandy Loam
Shallow	SH	Rocky Loam, Cobbly Loam
Course	CS	Gravelly Loam, very Gravelly Loam, Gravelly Sandy Loam, Very Gravelly Sandy Loam, Stony Loam, Stony Sandy Loam
Sandy	S	Loamy Fine Sand, Loam Sand, Very Gravelly Loamy Fine Sand
Blow Sand	BS	Fine Sand, Sand, Coarse Sand
Mountain Meadow	MM	Clay, Loam
Mountain Upland	MU	Clay Loam, Loam

NMSLO Seed Mix Sandy (S)

SANDY (S) SITES SEED MIXTURE:

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
Grasses:			
Sand bluestem	**Elida, VNS, So.**	**2.0**	**F**
Little bluestem	**Cimarron, Pastura**	**3.0**	**F**
Black grama	**VNS, Southern**	**1.0**	**D**
Sand dropseed	**VNS, Southern**	**4.0**	**S**
Plains bristlegrass	**VNS, Southern**	**2.0**	**D**
Forbs:			
Firewheel (Gaillardia)	**VNS, Southern**	**1.0**	**D**
Annual Sunflower	**VNS, Southern**	**1.0**	**D**
Shrubs:			
Fourwing Saltbush	**VNS, Southern**	**1.0**	**F**
	Total PLS/acre	**16.0**	

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 74691

CONDITIONS

Operator: COG PRODUCTION, LLC 600 W. Illinois Ave Midland, TX 79701	OGRID: 217955
	Action Number: 74691
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	Closure report due 05/09/2022.	2/9/2022
chensley	Variance for sampling approved for 500 sq/ft.	2/9/2022