

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Canvasback 13 Federal #002H					
Company:	COG Operating LLC					
Section, Township and Range	Unit A	Sec. 13	T 24S	R 31E		
Lease Number:	API No. 30-015-40538					
County:	Eddy County					
GPS:	32.22300			-103.72300		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 128 and Buck Johnson Rd., head Southwest on Buck Johnson Rd for 0.43 miles, turn south onto unnamed lease road and go 0.53 miles and arrive at location.					

Release Data:

RP#	2RP-5008	2RP-5016
Date Released:	9/28/2018	10/6/2018
Type Release:	Produced Water	Produced Water
Source of Contamination:	Flowline	Flowline
Fluid Released:	52 bbl water	24 bbl water
Fluids Recovered:	20 bbls water	15 bbl water

Official Communication:

Name:	Ike Tavaréz		Clair Gonzales
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) 687-8110
Fax:	(432) 684-7137		
Email:	itavarez@concho.com		Clair.Gonzales@tetrattech.com

Site Characterization

Depth to Groundwater:	160' below surface
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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

WTBX2-190918-C-1410



September 12, 2019

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

Re: Closure Report for the COG Operating, LLC, Canvasback 13 Federal #002H, Unit A, Section 13, Township 24 South, Range 31 East, Eddy County, New Mexico. 2RP-5008 and 2RP-5016

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess two releases that occurred at the Canvasback 13 Federal #002H, Unit A, Section 13, Township 24 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.22300°, -103.72300°. The site location is shown on Figures 1 and 2.

Background

Two releases occurred at the site and the release footprints overlapped. The releases migrated into the pasture along the sides of the lease road and impacted areas measuring approximately 15'x480' and 20'x115'. The initial C-141 Forms are included in Appendix A.

- **2RP-5008:** According to the State of New Mexico C-141 Initial Report the leak was discovered on September 28, 2018, and released approximately 52 barrels of produced water due to a ruptured flowline. Vacuum trucks were used to remove all freestanding fluids, recovering approximately 20 barrels of produced water.
- **2RP-5016:** According to the State of New Mexico C-141 Initial Report the leak was discovered on October 6, 2018, and released approximately 24 barrels of produced water due to a ruptured flowline. Vacuum trucks were used to remove all freestanding fluids, recovering approximately 15 barrels of produced water.

Site Characterization

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. No water wells were listed within Section 13 on the New Mexico

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com



Office of the State Engineer's (NMOSE) database, the Geology and Groundwater Resources of Eddy County (Report 3), or the USGS National Water Information Database. The nearest well is listed in Section 02 on the NMOSE website, approximately 2.37 miles Northwest of the site, and has a reported depth to groundwater of 160' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 300' and 325' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with 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 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 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, the proposed RRAL for TPH is 2,500 mg/kg (GRO + DRO + MRO). Additionally, based on the site characterization, the proposed RRAL for chlorides is 20,000 mg/kg.

Soil Assessment and Analytical Results

On October 16, 2018, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of ten (10) auger holes (AH-1 through AH-10) were installed in the release area to total depths ranging from 2-2.5' to 5-5.5' below surface. A total of eleven (11) horizontal delineation samples (H-1 through H-11) were collected around the perimeter of the spill footprint to total depths of 0-1' below surface. 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.

Auger Holes

Referring to Table 1, all analyzed samples showed benzene and total BTEX concentrations below the laboratory reporting limits. The area of auger hole (AH-7) showed a TPH concentration of 1,580 mg/kg at 0-1', which then declined with depth to 27.3 mg/kg at 1-1.5' below surface. No other samples analyzed showed TPH concentrations above the laboratory reporting limits. Additionally, all samples collected showed chloride concentrations below the RRAL, with concentrations ranging from below the laboratory reporting limits to 10,900 mg/kg.



Horizontals

Referring to Table 1, none of the samples collected showed benzene, total BTEX, or total TPH concentrations above the laboratory reporting limits. Additionally, none of the samples showed any significant chloride concentrations, with concentrations ranging from below the laboratory reporting limits to 58.2 mg/kg.

All samples collected showed TPH, benzene, total BTEX, and chlorides below the RRALs and no remediation activities were performed. However, reclamation activities were performed, as approved in the work plan dated December 17, 2018.

Reclamation Activities

Based on the approved workplan, dated December 17th, 2018, Tetra Tech personnel were onsite to perform and supervise the reclamation activities between July 30th and August 5th, 2019. The impacted areas of auger holes (AH-1, AH-3, AH-7 and AH-8) were excavated to 4'1" below surface. A total of twelve (12) bottom hole samples (Bottom Hole 1 through Bottom Hole 12) and sixteen (16) sidewall samples (North Sidewall 1 through North Sidewall 3, East Sidewall 1 through East Sidewall 5, West Sidewall 1 through West Sidewall 5, and South Sidewall 1 through South Sidewall 3) were collected every 200 square feet. Selected samples were 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 and Table 2. The sample locations and excavation depths are shown on Figure 4.

Additionally, due to safety and access issues, an auger hole was installed in the area of AH-6 to 0-1' below surface in order to re-evaluate the surficial impact. Referring to Table 1, the sample collected at AH-6 at 0-1' below surface showed a chloride below 600 mg/kg of 48.0 mg/kg. Based on the results and the multiple lines in the area, the area of AH-6 was not excavated.

Referring to Table 2, none of the bottom hole samples collected showed benzene, total BTEX, TPH, or chloride concentrations above the RRALs. Additionally, none of the sidewall samples collected showed benzene, total BTEX, TPH, or chloride concentrations above the reclamation standards.

Approximately 440 cubic yards of material were hauled for proper disposal. Once the excavation activities were completed, the areas were backfilled with clean material to surface grade.

Revegetation

Reseeding will be performed in June 2020 to coincide with the rainy season in Southeastern New Mexico and aid in revegetation. Based on the soils at the site, the BLM Loamy Sites Seed Mixture will be used 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 handheld broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds PLS per acre will be doubled.



TETRA TECH

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 BLM 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 BLM seed mixture details and corresponding pounds PLS per acre are included in Appendix D.

Conclusion

Based on the laboratory results and remediation activities performed, COG requests closure of this spill issue. The final C-141 form is included in Appendix A. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales, P.G.
Project Manager

cc: Ike Tavaréz – COG
Dakota Neel - COG
Rebecca Haskell - COG
Sheldon Hitchcock - COG
DeAnn Grant – COG
Jim Amos - BLM

Figures



OVERALL VIEW 1:1,468,827



0 2,000 4,000
Feet
1 inch = 4,000 feet



FIGURE 1

CANVASBACK 13 FEDERAL #2H
(32.22300°, -103.72300°)

OVERVIEW MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01452

Date : 11/15/2018

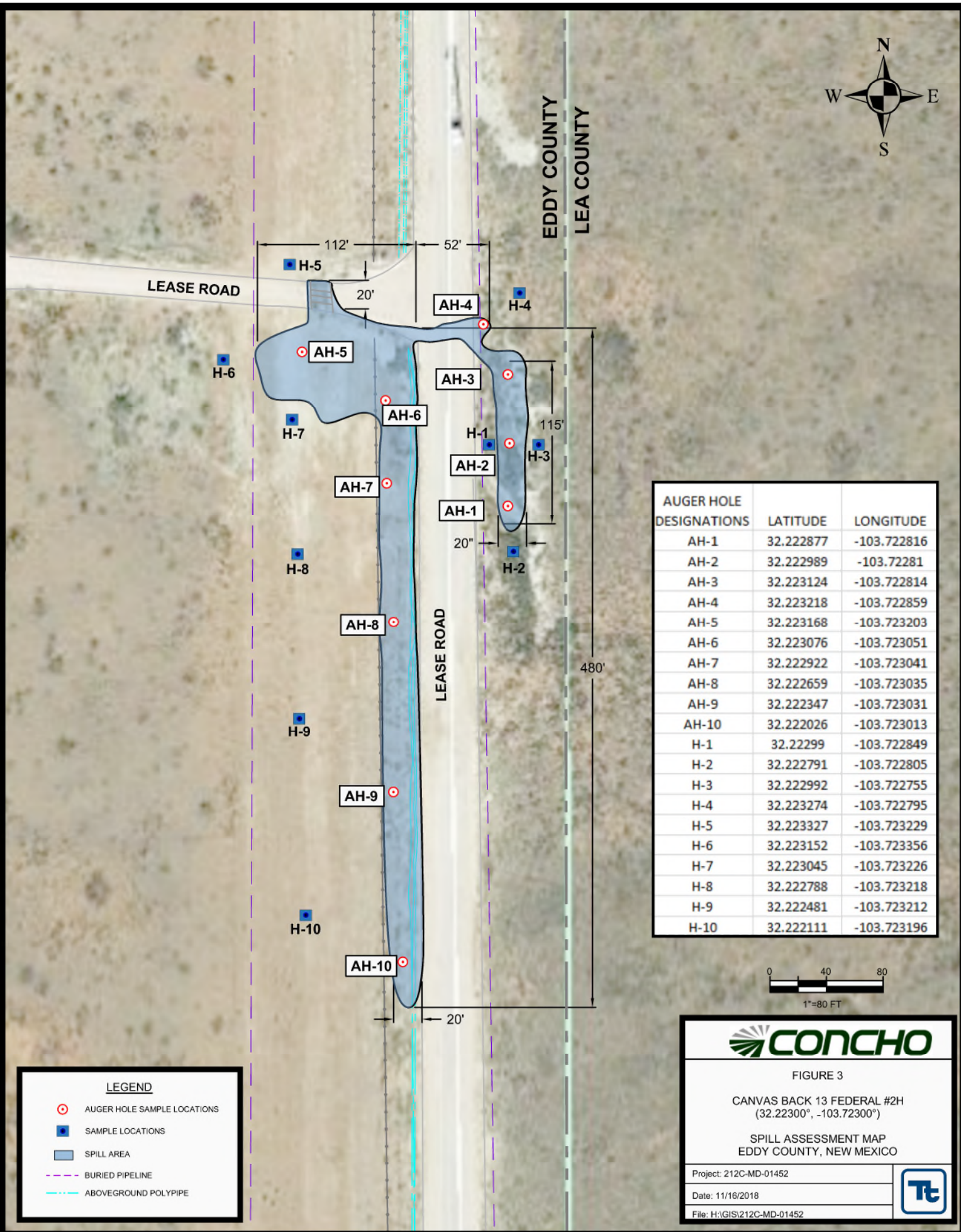
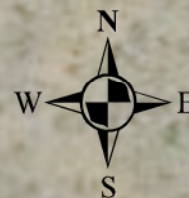
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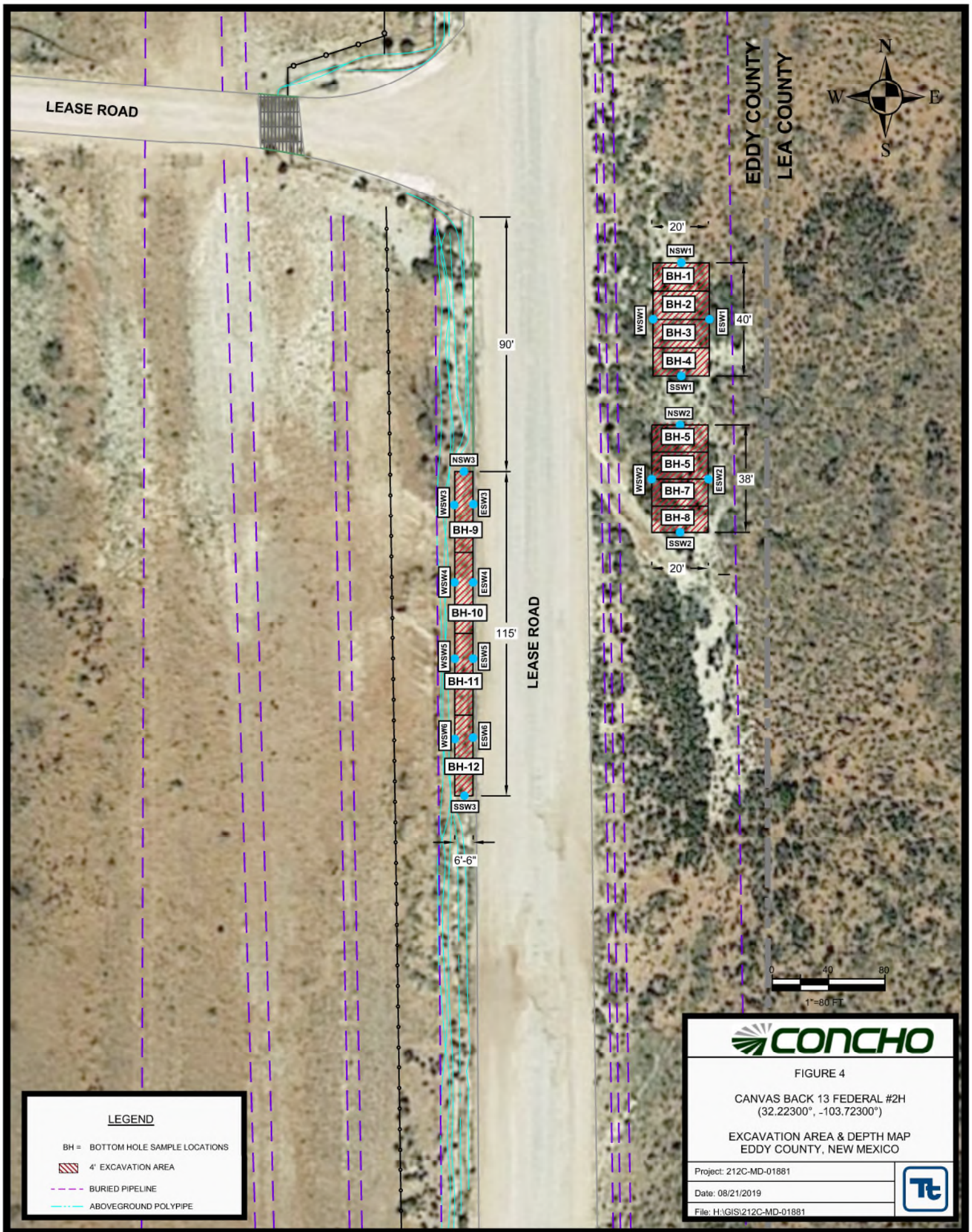


LEGEND

● SITE LOCATION

Sources: Esri, HERE, Garmin, U
Japan, METI, Esri China (Hong
OpenStreetMap contributors, and the GIS User Community





Tables

Table 1
COG
Canvasback 13 Federal #002H
Eddy County, New Mexico

[illegible]

Table 1
COG
Canvasback 13 Federal #002H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	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	ORO	Total						
AH-8	10/16/2018	0-1	-		X	<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	932
	"	1-1.5	-		X	<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	191
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	-	10,700
AH-9	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	89.3
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.96
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	8.85
AH-10	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	179
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	46.7
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	49.2
H-1	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	58.2
H-2	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	37.5
H-3	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<5.00
H-4	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.95
H-5	10/16/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	48.9
H-6	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99
H-7	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	8.75
H-8	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<5.00
H-9	10/16/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.00
H-10	10/16/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99

Table 2
COG
Canvasback 13 Federal #002H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	ORO	Total						
Bottom Hole 1	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	64.0
Bottom Hole 2	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	64.0
Bottom Hole 3	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	64.0
Bottom Hole 4	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	2,120
Bottom Hole 5	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	176
Bottom Hole 6	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	96.0
Bottom Hole 7	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	48.0
Bottom Hole 8	7/31/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	32.0
Bottom Hole 9	8/2/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	16.0
Bottom Hole 10	8/2/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	48.0
Bottom Hole 11	8/2/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	736
Bottom Hole 12	8/2/2019	-	4.1	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	1,180
North Sidewall 1	7/31/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	16.0
North Sidewall 2	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	16.0
North Sidewall 3	8/2/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	128
East Sidewall 1	7/31/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	<16.0
East Sidewall 2	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	32.0
East Sidewall 3	8/2/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	64.0
East Sidewall 4	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	48.0
East Sidewall 5	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	16.0
West Sidewall 1	7/31/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	<16.0
West Sidewall 2	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	<16.0
West Sidewall 3	8/2/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	32.0
West Sidewall 4	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	32.0
West Sidewall 5	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	64.0
South Sidewall 1	7/31/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	64.0
South Sidewall 2	"	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	112
South Sidewall 3	8/2/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.0300	272

Photos

COG
Canvasback 13 Fed 2H
Eddy County, New Mexico



View Northwest – Area of AH-1



View South – Area of AH-2

COG
Canvasback 13 Fed 2H
Eddy County, New Mexico



View West-northwest – Area of AH-3



View West – Area of AH-4

COG
Canvasback 13 Fed 2H
Eddy County, New Mexico



View North – Area of AH-5



View Southeast – Area of AH-6

COG
Canvasback 13 Fed 2H
Eddy County, New Mexico



View North-northeast – Area of AH-7



View South – Area of AH-8

COG
Canvasback 13 Fed 2H
Eddy County, New Mexico



View North – Area of AH-9



View North – Area of AH-10

COG
Canvasback 13 Fed 2H
Eddy County, New Mexico



View North – Excavated Area of AH-1



View North – Excavated Area of AH-3

COG
Canvasback 13 Fed 2H
Eddy County, New Mexico



View South – Excavated areas of AH-7 and AH-8

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	NMAP1828466301
District RP	2RP-5008
Facility ID	N/A
Application ID	pMAP1828466072

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Robert McNeill	Contact Telephone	(432) 683-7443
Contact email	RMcNeill@conhco.com	Incident # (assigned by OCD)	NMAP1828466301
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.22300 Longitude -103.72300
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Canvasback 13 Federal #002H	Site Type	Flowline
Date Release Discovered	September 28, 2018	API# (if applicable)	30-015-40538

Unit Letter	Section	Township	Range	County
A	13	24S	31E	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 52	Volume Recovered (bbls) 20
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a ruptured flowline. The flowline is being replaced.
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.

Incident ID	NMAP1828466301
District RP	2RP-5008
Facility ID	N/A
Application ID	pMAP1828466072

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? The volume released was equal to or 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 Sheldon Hitchcock via e-mail September 28, 2018 at 6:36pm to Maria Pruett and Shelly Tucker.	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: DeAnn Grant	Title: HSE Administrative Assistant
Signature: _____	Date: 10/3/2018
email: agrant@concho.com	Telephone: (432) 253-4513
<u>OCD Only</u>	
Received by: 	Date: 10/11/18

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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


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

<p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.<input type="checkbox"/> Field data<input type="checkbox"/> Data table of soil contaminant concentration data<input type="checkbox"/> Depth to water determination<input type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release<input type="checkbox"/> Boring or excavation logs<input type="checkbox"/> Photographs including date and GIS information<input type="checkbox"/> Topographic/Aerial maps<input type="checkbox"/> 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.

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: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure


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

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

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

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

Printed Name: _____ Title: _____

Signature:  _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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	NMAP1829543220
District RP	2RP-5016
Facility ID	N/A
Application ID	pMAP1829541513

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Robert McNeill	Contact Telephone	(432) 683-7443
Contact email	RMcNeill@concho.com	Incident # (assigned by OCD)	
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.22324 Longitude -103.72283
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Canvasback 13 Federal #002H Battery	Site Type	Flowline
Date Release Discovered	October 6, 2018	API# (if applicable)	30-015-40538

Unit Letter	Section	Township	Range	County
D	18	24S	32E	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 24	Volume Recovered (bbls) 15
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a flowline rupture. The flowline is being replaced.
The release was in the pasture and overlapped the release on September 28, 2018. 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.

Incident ID	NMAP1829543220
District RP	2RP-5016
Facility ID	N/A
Application ID	pMAP1829541513

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

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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Printed Name: <u>DeAnn Grant</u>	Title: <u>HSE Administrative Assistant</u>
Signature: _____	Date: <u>10/8/2018</u>
email: <u>agrant@concho.com</u>	Telephone: <u>(432) 253-4513</u>
<u>OCD Only</u>	
Received by: 	Date: <u>10/22/18</u>

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)
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--

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Incident ID	
District RP	2RP-5016
Facility ID	
Application ID	

Closure


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Printed Name: _____ Title: _____

Signature:  _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG-Canvasback 13 Federal #002H

23 South			30 East		
6	5	4	3	2	1
110				250	
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
			440		

23 South			31 East		
6	5	4	3	2	1
85	354	168			
140					
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South			32 East		
6	5	4	3	2	1
7	639		480		
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
	186				
18	17	16	15	14	13
19	231	20	21	22	23
	150			400	
30	29	28	27	26	25
31	32	33	34	35	36

24 South			31 East		
6	5	4	3	2	1
		436		160	
7	8	9	10	11	12
18	17	16	15	14	13
	74				
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
		474			

24 South			32 East		
6	5	4	3	2	1
	380				
7	8	9	10	11	12
18	17	16	15	14	13
			20		
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
		290			

25 South			30 East		
6	5	4	3	2	1
				295	
7	264	8	9	295	12
					390
18	17	16	15	14	13
19	20	21	22	23	24
		265			
30	29	28	27	26	25
31	32	33	34	35	36
31	32	33	34	35	36

25 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
		390			
30	29	28	27	26	25
31	32	33	34	35	36
31	32	33	34	35	36
		290			

25 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
		290			
31	32	33	34	35	36
	290				

- 88** New Mexico State Engineers Well Reports
- 105** USGS Well Reports
- 90** Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
- 90** Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34** NMOCD - Groundwater Data
- 121** Abandoned Waterwell (recently measured)



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	DepthWell	DepthWater	Water Column
C 02405		CUB	ED	4	1	02	24S	31E		617690	3568631*	275	160	115
C 02440		C	ED	2	3	10	24S	31E		616103	3566599*	350		
C 02460		C	ED		3	02	24S	31E		617496	3568022*	320		
C 02460 POD2		C	ED		3	02	24S	31E		617496	3568022*	320		
C 02464		C	ED	3	4	1	02	24S	31E	617589	3568530*	320	205	115
C 02661		CUB	ED	3	3	1	04	24S	31E	613969	3568485*	708		
C 02783		CUB	ED	3	3	1	04	24S	31E	613911	3568461	708		
C 02783 POD2		CUB	ED	3	3	1	04	24S	31E	613911	3568461	672		
C 02784		C	ED	4	2	4	04	24S	31E	613911	3568461	584		
C 02785		CUB	ED	3	3	1	04	24S	31E	613969	3568485*	692		

Average Depth to Water: **182 feet**

Minimum Depth: **160 feet**

Maximum Depth: **205 feet**

Record Count: 10

PLSS Search:

Township: 24S **Range:** 31E

*UTM location was derived from PLSS - see Help

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

10/24/18 1:09 PM

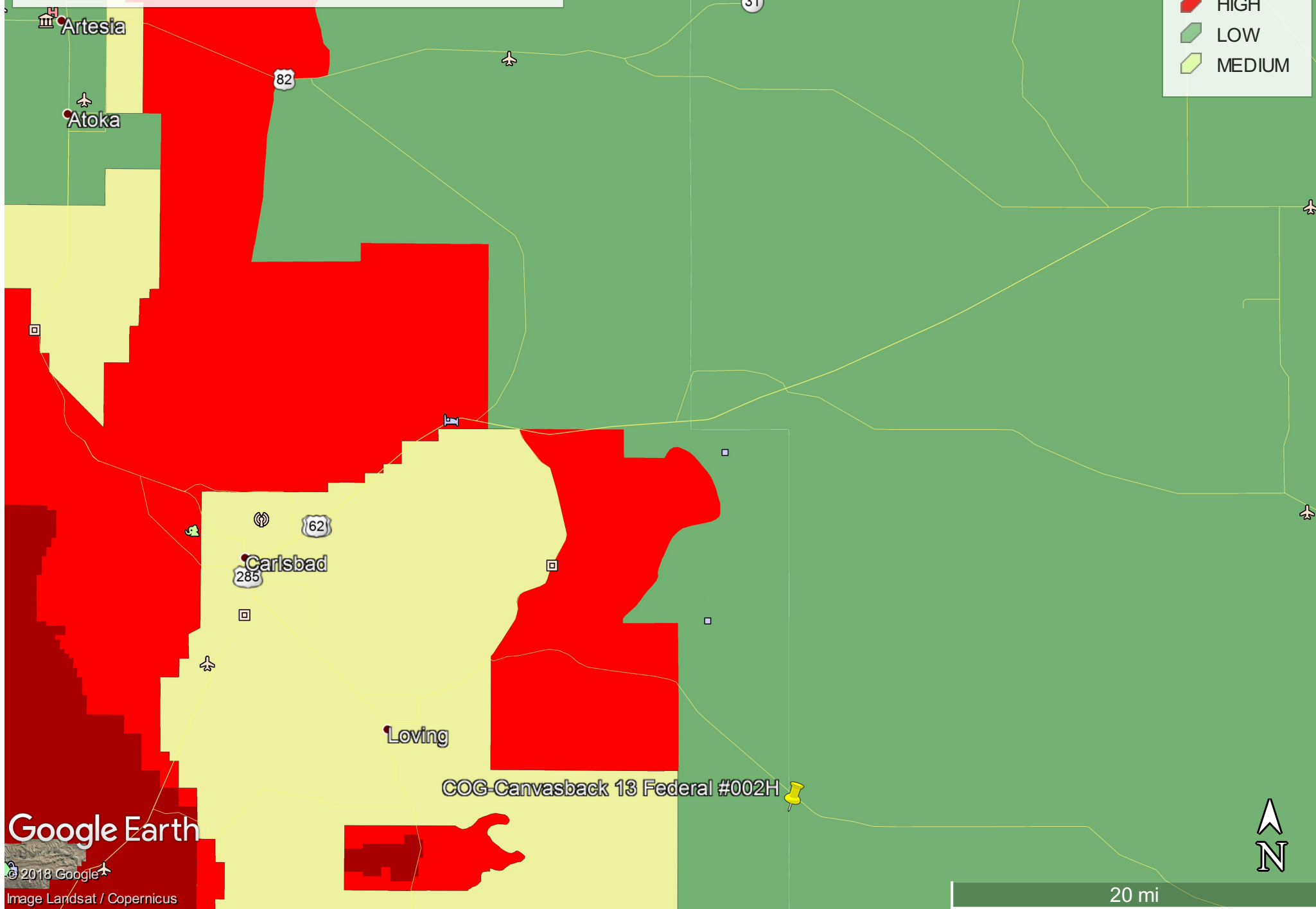
WATER COLUMN/ AVERAGE DEPTH TO WATER

COG-Canvasback 13 Federal #002H

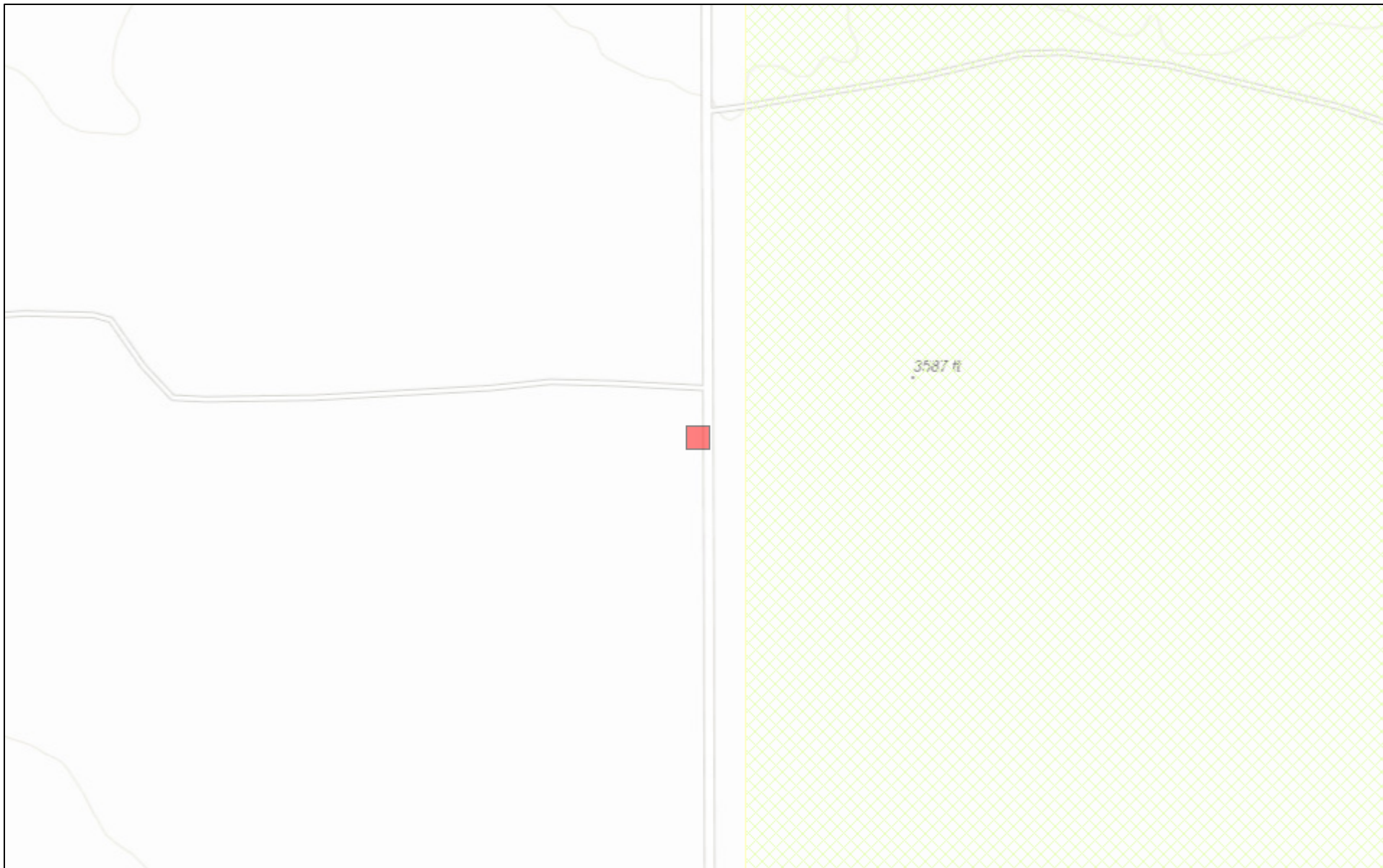
Karst Potential

Legend

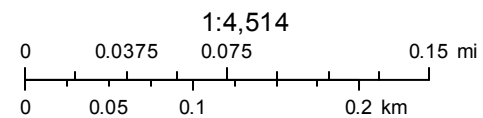
- CRIT
- HIGH
- LOW
- MEDIUM



New Mexico NFHL Data



November 2, 2018



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

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

Appendix C

August 01, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CANVASBACK 13 FED 2

Enclosed are the results of analyses for samples received by the laboratory on 07/31/19 16:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received: 07/31/2019
Reported: 08/01/2019
Project Name: CANVASBACK 13 FED 2
Project Number: NONE GIVEN
Project Location: COG - EDDY CO NM

Sampling Date: 07/31/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NORTH 1 SIDEWALL (H902619-01)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEX	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

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	08/01/2019	ND	432	108	400	0.00	

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 99.9 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: NORTH 2 SIDEWALL (H902619-02)

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	08/01/2019	ND	1.96	98.2	2.00	4.23		
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10		
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20		
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30		
Total BTEx	<0.300	0.300	08/01/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-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	08/01/2019	ND	432	108	400	0.00	

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 96.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: EAST 1 SIDEWALL (H902619-03)

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	08/01/2019	ND	1.96	98.2	2.00	4.23		
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10		
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20		
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30		
Total BTEx	<0.300	0.300	08/01/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-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	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 98.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: EAST 2 SIDEWALL (H902619-04)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-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	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 121 % 41-142

Surrogate: 1-Chlorooctadecane 118 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: WEST 1 SIDEWALL (H902619-05)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

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	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 121 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: WEST 2 SIDEWALL (H902619-06)

BTX 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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTX	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

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	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 124 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SOUTH 1 SIDEWALL (H902619-07)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 123 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SOUTH 2 SIDEWALL (H902619-08)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	08/01/2019	ND	432	108	400	0.00	

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 125 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Custody Record



Tetra Tech, Inc.

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

Client Name: Concho		Site Manager: Mike Carmona	
Project Name: Canvashack 13 Fed 2		Project #: PENDING	
Project Location: Eddy Co, NM (county, state)		Invoice to: COG - Ike Tavaarez	
Receiving Laboratory: Cardinal		Sampler Signature: Conner Moehring	
Comments:			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD					# CONTAINERS	FILTERED (Y/N)	ANALYSIS REQUEST (Circle or Specify Method No.)		
		DATE	TIME	WATER	SOIL	HCL	HNO ₃	ICE	None						
										YEAR: 2019					
1	NORTH 1 SIDEWALK	7/31/14			X			X				1	2	X	BTEX 8021B BTEX 8260B
2	NORTH 2 SIDEWALK	7/31/14			X			X				1	2	X	TPH TX1005 (Ext to C35)
3	EAST 1 SIDEWALK	7/31/14			X			X				1	2	X	TPH 8015M (GRO - DRO - ORO - MRO)
4	EAST 2 SIDEWALK	7/31/14			X			X				1	2	X	PAH 8270C
5	WEST 1 SIDEWALK	7/31/14			X			X				1	2	X	Total Metals Ag As Ba Cd Cr Pb Se Hg
6	WEST 2 SIDEWALK	7/31/14			X			X				1	2	X	TCLP Metals Ag As Ba Cd Cr Pb Se Hg
7	SOUTH 1 SIDEWALK	7/31/14			X			X				1	2	X	TCLP Volatiles
8	SOUTH 2 SIDEWALK	7/31/14			X			X				1	2	X	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

Reinquired by: <i>Conner Moehring</i>	Date: 7/31/14	Time: 1615	Received by: <i>Conner Moehring</i>	Date: 7-31-14	Time: 1615
Reinquired by:	Date:	Time:	Received by:	Date:	Time:

Reinquired by:	Date:	Time:	Received by:	Date:	Time:
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LAB USE ONLY	REMARKS:
<input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report	Sample Temperature 5.32 #97 5.72 Corrected

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

August 01, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CANVASBACK 13 FED 2

Enclosed are the results of analyses for samples received by the laboratory on 07/31/19 16:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 1 (4.1' BEB) (H902620-01)

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	08/01/2019	ND	1.96	98.2	2.00	4.23		
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10		
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20		
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30		
Total BTEX	<0.300	0.300	08/01/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	08/01/2019	ND	432	108	400	0.00	

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	08/01/2019	ND	203	101	200	0.833	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	189	94.7	200	2.38	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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 TETRA TECH
 MIKE CARMONA
 901 WEST WALL STREET , STE 100
 MIDLAND TX, 79701
 Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 2 (4.1' BEB) (H902620-02)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	198	99.0	200	2.04	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	193	96.5	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 81.5 % 41-142

Surrogate: 1-Chlorooctadecane 82.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 TETRA TECH
 MIKE CARMONA
 901 WEST WALL STREET , STE 100
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 Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 3 (4.1' BEB) (H902620-03)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	198	99.0	200	2.04	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	193	96.5	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 85.7 % 41-142

Surrogate: 1-Chlorooctadecane 92.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 4 (4.1' BEB) (H902620-04)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2120	16.0	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	198	99.0	200	2.04	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	193	96.5	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 83.5 % 41-142

Surrogate: 1-Chlorooctadecane 87.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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901 WEST WALL STREET , STE 100
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Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 5 (4.1' BEB) (H902620-05)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	198	99.0	200	2.04	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	193	96.5	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 75.5 % 41-142

Surrogate: 1-Chlorooctadecane 76.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 6 (4.1' BEB) (H902620-06)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	08/01/2019	ND	432	108	400	0.00		

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	08/01/2019	ND	198	99.0	200	2.04	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	193	96.5	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 85.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 7 (4.1' BEB) (H902620-07)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEx	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/01/2019	ND	432	108	400	0.00	

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	08/01/2019	ND	198	99.0	200	2.04	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	193	96.5	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 85.0 % 41-142

Surrogate: 1-Chlorooctadecane 96.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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 Fax To: (432) 682-3946

Received:	07/31/2019	Sampling Date:	07/31/2019
Reported:	08/01/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 8 (4.1' BEB) (H902620-08)

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	08/01/2019	ND	1.96	98.2	2.00	4.23		
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10		
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20		
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30		
Total BTEx	<0.300	0.300	08/01/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-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	08/01/2019	ND	416	104	400	0.00		

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	08/01/2019	ND	198	99.0	200	2.04	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	193	96.5	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 82.0 % 41-142

Surrogate: 1-Chlorooctadecane 87.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Custody Record



Tetra Tech, Inc.

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

Client Name:	Concho	Site Manager:	Mike Carmona
Project Name:	Canvasback 13 Fed 2		
Project Location: (county, state)	Eddy Co, NM	Project #:	PENDING
Invoice to:	COG - Ike Tavaarez		
Receiving Laboratory:	Cardinal	Sampler Signature:	Conner Moehring
Comments:			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)	
		DATE	TIME	WATER	SOIL	HCL	HNO ₃	ICE	None			
												YEAR: 2019
1	Bottom Hole #1 (4.1' BEB)	7/31/19		X				X			1	N
2	Bottom Hole #2 (4.1' BEB)	7/31/19		X				X			1	N
3	Bottom Hole #3 (4.1' BEB)	7/31/19		X				X			1	N
4	Bottom Hole #4 (4.1' BEB)	7/31/19		X				X			1	N
5	Bottom Hole #5 (4.1' BEB)	7/31/19		X				X			1	N
6	Bottom Hole #6 (4.1' BEB)	7/31/19		X				X			1	N
7	Bottom Hole #7 (4.1' BEB)	7/31/19		X				X			1	N
8	Bottom Hole #8 (4.1' BEB)	7/31/19		X				X			1	N

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Conner Moehring	7/31/19	1615	Mike Carmona	7-31-19	14:15
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

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

LAB USE ONLY

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

Sample Temperature

5.3c H97

(Circle) HAND DELIVERED - FEDEX UPS Tracking #:

5.7c

ORIGINAL COPY

August 05, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CANVASBACK 13 FED 2

Enclosed are the results of analyses for samples received by the laboratory on 08/02/19 16:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: NORTH 3 SIDEWALL (H902663-01)

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	08/05/2019	ND	1.66	83.2	2.00	5.86	
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22	
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18	
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84	
Total BTEX	<0.300	0.300	08/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	08/05/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 96.4 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: EAST 3 SIDEWALL (H902663-02)

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	08/05/2019	ND	1.66	83.2	2.00	5.86		
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22		
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18		
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84		
Total BTEx	<0.300	0.300	08/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	08/05/2019	ND	416	104	400	3.77	

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	08/05/2019	ND	205	103	200	2.42	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 99.1 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: WEST 3 SIDEWALL (H902663-03)

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	08/05/2019	ND	1.66	83.2	2.00	5.86	
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22	
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18	
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84	
Total BTEx	<0.300	0.300	08/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

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	08/05/2019	ND	416	104	400	3.77	

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	08/05/2019	ND	205	103	200	2.42	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: EAST 4 SIDEWALL (H902663-04)

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	08/05/2019	ND	1.66	83.2	2.00	5.86	
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22	
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18	
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84	
Total BTEX	<0.300	0.300	08/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/05/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 98.0 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: EAST 5 SIDEWALL (H902663-05)

BTX 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	08/05/2019	ND	1.66	83.2	2.00	5.86	
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22	
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18	
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84	
Total BTX	<0.300	0.300	08/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

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	08/05/2019	ND	416	104	400	3.77	

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	08/05/2019	ND	205	103	200	2.42	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 99.1 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: WEST 4 SIDEWALL (H902663-06)

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	08/05/2019	ND	1.66	83.2	2.00	5.86		
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22		
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18		
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84		
Total BTEx	<0.300	0.300	08/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

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	08/05/2019	ND	416	104	400	3.77	

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	08/05/2019	ND	205	103	200	2.42	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: WEST 5 SIDEWALL (H902663-07)

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	08/05/2019	ND	1.66	83.2	2.00	5.86		
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22		
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18		
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84		
Total BTEx	<0.300	0.300	08/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/05/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.05	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 74.9 % 41-142

Surrogate: 1-Chlorooctadecane 68.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SOUTH 3 SIDEWALL (H902663-08)

BTX 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	08/05/2019	ND	1.66	83.2	2.00	5.86	
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22	
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18	
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84	
Total BTX	<0.300	0.300	08/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	08/05/2019	ND	416	104	400	3.77	

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	08/05/2019	ND	205	103	200	2.05	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 79.9 % 41-142

Surrogate: 1-Chlorooctadecane 74.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Custody Record



Tetra Tech, Inc.

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

Client Name:		Concho		Site Manager:		Mike Carmona	
Project Name:		Canvasback 13 Fed 2 (9.28.14) (10.6.14)					
Project Location:		Eddy Co, NM		Project #:		PENDING	
Invoice to:		COG - Ike Tavaarez					
Receiving Laboratory:		Cardinal		Sampler Signature:		Conner Moehring	
Comments:							

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)	ANALYSIS REQUEST (Circle or Specify Method No.)	
		DATE	TIME	WATER	SOIL	HCL	HNO ₃	ICE	None				
													YEAR: 2019
1	NORTH 3 SIDEWALK	8/2/14		X		X					1	2	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
2	EAST 3 SIDEWALK	8/2/14		X		X					1	2	
3	WEST 3 SIDEWALK	8/2/14		X		X					1	2	
4	EAST 4 SIDEWALK	8/2/14		X		X					1	2	
5	EAST 5 SIDEWALK	8/2/14		X		X					1	2	
6	WEST 4 SIDEWALK	8/2/14		X		X					1	2	
7	WEST 5 SIDEWALK	8/2/14		X		X					1	2	
8	SOUTH 3 SIDEWALK	8/2/14		X		X					1	2	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Conner Moehring	8/2/14	16:05	Mike Carmona	8-2-14	16:05
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

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

LAB USE ONLY	REMARKS:
<input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRAP Report	Sample Temperature -0.2°C -0.6°C Corrected

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

August 05, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CANVASBACK 13 FED 2

Enclosed are the results of analyses for samples received by the laboratory on 08/02/19 16:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 9 (4.1' BEB) (H902666-01)

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	08/05/2019	ND	1.66	83.2	2.00	5.86	
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22	
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18	
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84	
Total BTEX	<0.300	0.300	08/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

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	08/05/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.05	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 82.5 % 41-142

Surrogate: 1-Chlorooctadecane 74.6 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 10 (4.1' BEB) (H902666-02)

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	08/05/2019	ND	1.66	83.2	2.00	5.86		
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22		
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18		
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84		
Total BTEx	<0.300	0.300	08/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/05/2019	ND	416	104	400	3.77	

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	08/05/2019	ND	205	103	200	2.05	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 84.5 % 41-142

Surrogate: 1-Chlorooctadecane 76.0 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 11 (4.1' BEB) (H902666-03)

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	08/05/2019	ND	1.66	83.2	2.00	5.86		
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22		
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18		
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84		
Total BTEX	<0.300	0.300	08/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	736	16.0	08/05/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.05	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 81.9 % 41-142

Surrogate: 1-Chlorooctadecane 72.9 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/02/2019	Sampling Date:	08/02/2019
Reported:	08/05/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM HOLE # 12 (4.1' BEB) (H902666-04)

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	08/05/2019	ND	1.66	83.2	2.00	5.86		
Toluene*	<0.050	0.050	08/05/2019	ND	2.05	102	2.00	5.22		
Ethylbenzene*	<0.050	0.050	08/05/2019	ND	2.02	101	2.00	5.18		
Total Xylenes*	<0.150	0.150	08/05/2019	ND	6.28	105	6.00	4.84		
Total BTEx	<0.300	0.300	08/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1180	16.0	08/05/2019	ND	416	104	400	3.77	

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	08/05/2019	ND	205	103	200	2.05	
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94	
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND					

Surrogate: 1-Chlorooctane 72.2 % 41-142

Surrogate: 1-Chlorooctadecane 63.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

Tetra Tech, Inc.

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB USE ONLY

REMARKS:STANDARD

Sample Temperature

☒ **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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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

August 06, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CANVASBACK 13 FED 2

Enclosed are the results of analyses for samples received by the laboratory on 08/05/19 16:34.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	08/05/2019	Sampling Date:	08/05/2019
Reported:	08/06/2019	Sampling Type:	Soil
Project Name:	CANVASBACK 13 FED 2	Sampling Condition:	Cool & Intact
Project Number:	(9-28-19) (10-6-19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: AH # 6 (0-1') (H902680-01)

BTX 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	08/06/2019	ND	1.98	98.9	2.00	0.851	
Toluene*	<0.050	0.050	08/06/2019	ND	2.05	102	2.00	0.652	
Ethylbenzene*	<0.050	0.050	08/06/2019	ND	1.94	96.8	2.00	0.429	
Total Xylenes*	<0.150	0.150	08/06/2019	ND	5.90	98.3	6.00	0.117	
Total BTX	<0.300	0.300	08/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/06/2019	ND	432	108	400	0.00	

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	08/06/2019	ND	210	105	200	0.746	
DRO >C10-C28*	<10.0	10.0	08/06/2019	ND	202	101	200	1.51	
EXT DRO >C28-C36	<10.0	10.0	08/06/2019	ND					

Surrogate: 1-Chlorooctane 96.8 % 41-142

Surrogate: 1-Chlorooctadecane 99.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

[illegible]

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(Circle or Specify Method No.)

Appendix D

Eddy Area, New Mexico

PA—Pajarito loamy fine sand, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w54

Elevation: 2,700 to 5,500 feet

Mean annual precipitation: 5 to 15 inches

Mean annual air temperature: 57 to 70 degrees F

Frost-free period: 180 to 250 days

Farmland classification: Not prime farmland

Map Unit Composition

Pajarito and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pajarito

Setting

Landform: Interdunes, dunes, plains

Landform position (three-dimensional): Side slope

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 13 inches: loamy fine sand

H2 - 13 to 36 inches: fine sandy loam

H3 - 36 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High
(2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0
to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 1.0

Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Minor Components

Wink

Percent of map unit:

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Berino

Percent of map unit:

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 14, Sep 12, 2018

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 15, Sep 12, 2018

BLM SERIAL #:

COMPANY REFERENCE:

3.1 Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed