



[MCollier@H-R\\_Enterprises.com](mailto:MCollier@H-R_Enterprises.com) 575-909-0326

## **Remediation, Reclamation, and Closure Report**

Cottonwood Draw 22 Federal Com #005H  
API# 30-015-37431  
Eddy County, New Mexico  
Incident ID: NKMW1106054103

### **Prepared For:**

Cimarex Energy Co. of Colorado  
600 Marienfeld St.  
Midland, TX 79701

### **Prepared By:**

H&R Enterprises, LLC  
5120 W. Kansas St.  
Hobbs, New Mexico 88242

**February 22, 2022**

Mr. Crisha Morgan  
**Bureau of Land Management**  
602 E. Green St.  
Carlsbad, NM 88240

Subject: **Reclamation, Reclamation, and Closure Report**  
Cottonwood Draw 22 Federal Com #005H  
Eddy County, NM

Dear Ms. Morgan,

Cimarex Energy Co. of Colorado has contracted H&R Enterprises (H&R) to perform site assessment and reclamation services at the above-referenced location. The results of our site assessment and reclamation activities are contained herein.

### **Site Information**

The Cottonwood Draw 22 Federal Com #005H is located approximately 20 miles South of Carlsbad, New Mexico. The legal location for this release is Unit Letter A, Section 22, Township 25 South and Range 26 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.1210938 North and -104.2726517 West. Site plans are presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Reeves Gypsum land complex, 0 to 3 percent slopes. Drainage courses in this area are typically dry. The project site is in a high Karst potential area.

## Groundwater and Site Characterization

The New Mexico Office of the State Engineer web site indicates that the nearest reported depth to groundwater is 44-feet below ground surface (BGS).

<b>Approximate Depth to Groundwater</b>	<b>44 Feet/BGS</b>
---	--------------------

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within 300 feet of any continuously flowing watercourse or any other significant watercourse
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within 200 feet of any lakebed, sinkhole, or a playa lake
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within 300 feet from an occupied permanent residence, school, hospital, institution, or church
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within 500 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 checked="" type="checkbox"/> No	Within 1000 feet of any freshwater well or spring
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within incorporated municipal boundaries or within a defined municipal freshwater well field covered under a municipal ordinance adopted pursuant to Section 3-2703 NMSA 1978
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within 300 feet of a wetland
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within the area overlying a subsurface mine
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within an unstable area
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Within a 100-year floodplain

As this is a reclamation as well as being in an area with a depth to groundwater of less than 50-feet BGS, the closure criteria for this site is as follows:

Table I			
Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride **	EPA 300.0 or SM4500 CIB	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

### Site Assessment, Remediation, and Reclamation Activities

On February 20, 2022, H&R mobilized personnel to begin site assessment, sampling, and reclamation activities of the location. Grab samples were obtained by way of test trenching in the tank battery as well as throughout the location to identify possible areas of contamination. Field chloride titrations were performed, and the results are presented in the following data table (Table 1). Laboratory analysis was also performed by Cardinal Laboratories on samples collected from test trenches 1 through 3 due to encountering possible petroleum hydrocarbon contamination. Those results are presented in the following data table (Table 1a). Initial site assessment sampling and excavation locations are illustrated on Test Trench Map, [Appendix I](#). After remediation and reclamation was complete, 4 composite confirmation samples were collected from the Northeast, Northwest, Southeast, and Southwest quadrants of the location and sent to Cardinal Laboratories to confirm NMOCD closure criteria had been met. Before and after photographs of the location are attached in [Appendix II](#). Complete laboratory reports can be found in [Appendix III](#).



Table 1: Initial Soil Samples Analysis

Sample ID	Sample Date	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
NMOCD Table 1 Closure Criteria 19.15.29 NMAC			50 mg/kg	10 mg/kg	100 mg/kg			100 mg/kg	600 mg/kg
TT-1	1/25/2022	1-2'	ND	ND	ND	ND	ND	0	80
TT-2	1/25/2022	5-5.5'	ND	ND	ND	ND	ND	0	528
TT-3	1/25/2022	2-3'	7.21	ND	87.6	1340	162	1589.6	48

TT = Test Trench ND = Analyte Not Detected

Table 1a: Field Chloride Titrations

Sample ID	Date	Depth	Field Titrations (Cl)
TT-4	1/25/2022	2'R	77
TT-5	1/25/2022	4'	262
TT-6	1/25/2022	4'	219
TT-7	1/25/2022	4'	283
TT-8	1/25/2022	4'	425
TT-9	1/25/2022	4'D-9'H	502
TT-10	1/25/2022	4'D-9'H	283
TT-11	1/25/2022	4'	134
TT-12	1/25/2022	4'	49
TT-13	1/25/2022	4'	141
TT-14	2/1/2022	1'R	219
TT-15	2/1/2022	2'R	126
TT-16	2/1/2022	3'R	49
TT-17	2/1/2022	1'R	232
TT-18	2/1/2022	2'R	156
TT-19	2/1/2022	2'R	283

R = Refusal w/excavator D = Vertical Depth H = Horizontal Movement

Based on the results of our site assessment and upon client authorization, further excavation activities of the impacted area commenced. Confirmation samples were collected to confirm that NMOCD closure criteria had been met, the results of which can be found in the following data table. Confirmation sample locations and excavation dimensions can be found on Confirmation Sample Map in [Appendix I](#). Complete laboratory reports are attached in [Appendix III](#).

Table 2: Confirmation and Final Quadrant Soil Sample Analysis

Sample ID	Sample Date	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
NMOCD Table 1 Closure Criteria 19.15.29 NMAC			50 mg/kg	10 mg/kg	100 mg/kg			100 mg/kg	600 mg/kg
S-1	2/8/2022	5'	ND	ND	ND	11	16.7	27.7	192
S-2	2/8/2022	5'	ND	ND	ND	ND	ND	0	32
S-3	2/8/2022	5'	ND	ND	ND	ND	ND	0	128
S-4	2/8/2022	5'	ND	ND	ND	13.9	16.7	30.6	160
S-5	2/8/2022	5'	ND	ND	ND	ND	ND	0	128
S-6	2/8/2022	5'	ND	ND	ND	26.5	12.1	38.6	208
N.SW	2/8/2022	5'	ND	ND	ND	26.7	15.5	42.2	192
W.SW	2/8/2022	5'	ND	ND	ND	39.1	20.1	59.2	192
E.SW	2/8/2022	5'	ND	ND	ND	ND	ND	0	144
NE	2/15/2022	0-1'	ND	ND	ND	ND	ND	0	160
NW	2/15/2022	0-1'	ND	ND	ND	ND	ND	0	160
SE	2/15/2022	0-1'	ND	ND	ND	ND	ND	0	160
SW	2/15/2022	0-1'	ND	ND	ND	ND	ND	0	96

ND = Analyte Not Detected SW = Sidewall NE,NW,SE,SW = Final Quadrant Samples

### Remedial Actions

- The impacted area in the vicinity of TT-3 was excavated to a total depth of 5 feet BGS.
- Composite confirmation samples were obtained from the sidewalls and bottoms of the excavated area to verify that all contaminants above closure criteria had been removed. The results from those samples as well as the final quadrant samples are shown on Table 2 and the corresponding lab reports may be found in [Appendix III](#).
- All the excavated material (540 yards) was hauled to Lea Land, a NMOCD approved solid waste disposal facility.
- The excavated area was backfilled with surrounding soil at depth and brought to grade, ripped, and contoured to match the surrounding location.
- The location will be seeded with the appropriate BLM seed mixture in accordance with the monsoon season to ensure proper seed germination and growth.

## Closure

Based on the site assessment, remedial/reclamation activities, and confirmation sampling results completed for this project, on behalf of Cimarex Energy Co. of Colorado we request that no further actions be required, and that closure of this incident be granted.

Should you have any questions or if further information is required, please do not hesitate to contact our office at 575-909-0326.

Respectfully submitted,

H&R Enterprises, LLC

A handwritten signature in black ink, appearing to read "Michael Collier".

Michael Collier  
Environmental Project Manager

### Attachments:

Appendix I Site Maps  
Appendix II Photographic Documentation  
Appendix III Laboratory Reports

# **APPENDIX I**

## **SITE/SAMPLE MAPS**



# Cottonwood Draw 22 Federal #005H

Cimarex Energy Co. of Colorado  
API# 30-015-37431  
Eddy County, NM  
Test Trench Map

## Legend

▣ Test Trench





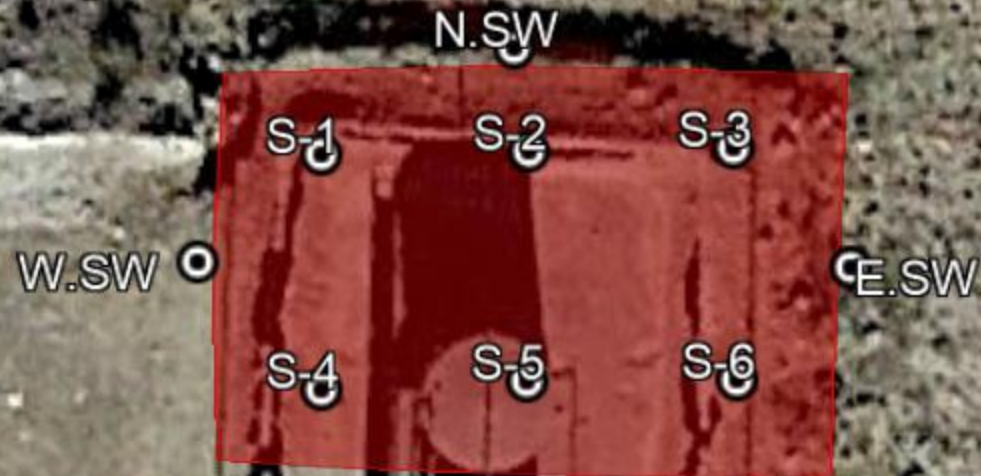


# Cottonwood Draw 22 Federal Com #005H

Cimarex Energy Co. of Colorado  
API# 30-015-37431  
Eddy County, NM  
Confirmation Sample Map

## Legend

-  5ft. Excavation
-  Confirmation Sample Point



# **APPENDIX II**

## **PHOTOGRAPHIC DOCUMENTATION**



PHOTOGRAPHIC DOCUMENTATION





PHOTOGRAPHIC DOCUMENTATION



# **APPENDIX III**

## **LABORATORY REPORTS**



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

January 27, 2022

MICHAEL COLLIER  
H & R ENTERPRISES  
1010 GAMBLIN ROAD  
HOBBS, NM 88240

RE: COTTONWOOD DRAW 22 FED COM #5H

Enclosed are the results of analyses for samples received by the laboratory on 01/26/22 10:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://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



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	01/26/2022	Sampling Date:	01/25/2022
Reported:	01/27/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: TT - 1 1-2' (H220302-01)**

BTEx 8021B		mg/kg		Analyzed By: MS/				A-01	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2022	ND	2.04	102	2.00	6.04	
Toluene*	<0.050	0.050	01/26/2022	ND	1.97	98.4	2.00	5.94	
Ethylbenzene*	<0.050	0.050	01/26/2022	ND	1.94	96.9	2.00	6.26	
Total Xylenes*	<0.150	0.150	01/26/2022	ND	5.81	96.9	6.00	6.41	
Total BTEX	<0.300	0.300	01/26/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	01/27/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS				A-01	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/26/2022	ND	198	99.1	200	1.41	
DRO >C10-C28*	<10.0	10.0	01/26/2022	ND	205	102	200	3.74	
EXT DRO >C28-C36	<10.0	10.0	01/26/2022	ND					

Surrogate: 1-Chlorooctane 87.9 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.3 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	01/26/2022	Sampling Date:	01/25/2022
Reported:	01/27/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: TT - 2 5-5.5' (H220302-02)**

BTEx 8021B		mg/kg	Analyzed By: MS/					A-01	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2022	ND	2.04	102	2.00	6.04	
Toluene*	<0.050	0.050	01/26/2022	ND	1.97	98.4	2.00	5.94	
Ethylbenzene*	<0.050	0.050	01/26/2022	ND	1.94	96.9	2.00	6.26	
Total Xylenes*	<0.150	0.150	01/26/2022	ND	5.81	96.9	6.00	6.41	
Total BTEX	<0.300	0.300	01/26/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	01/27/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS					A-01	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/26/2022	ND	198	99.1	200	1.41	
DRO >C10-C28*	<10.0	10.0	01/26/2022	ND	205	102	200	3.74	
EXT DRO >C28-C36	<10.0	10.0	01/26/2022	ND					

Surrogate: 1-Chlorooctane 67.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 67.4 % 59.5-142

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	01/26/2022	Sampling Date:	01/25/2022
Reported:	01/27/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: TT - 3 2-3' (H220302-03)**

BTEx 8021B		mg/kg	Analyzed By: MS/					A-01, S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2022	ND	2.04	102	2.00	6.04	
Toluene*	<0.050	0.050	01/26/2022	ND	1.97	98.4	2.00	5.94	GC-NC
Ethylbenzene*	2.86	0.050	01/26/2022	ND	1.94	96.9	2.00	6.26	GC-NC1
Total Xylenes*	4.35	0.150	01/26/2022	ND	5.81	96.9	6.00	6.41	GC-NC1
Total BTEX	7.21	0.300	01/26/2022	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 360 % 69.9-140

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/27/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS					A-01	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	87.6	10.0	01/26/2022	ND	198	99.1	200	1.41	
DRO >C10-C28*	1340	10.0	01/26/2022	ND	205	102	200	3.74	
EXT DRO >C28-C36	162	10.0	01/26/2022	ND					

Surrogate: 1-Chlorooctane 95.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 111 % 59.5-142

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
A-01	Sample collected in plastic bag. Results may be biased low.
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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\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager





101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: H&R Enterprises		<b>BILL TO</b>		ANALYSIS REQUEST																						
Project Manager: Michael Collier		P.O. #:																								
Address: 5120 W. Kansas St.		Company: Cimarex																								
City: Hobbs		Attn: Laci Luig																								
State: NM Zip: 88242		Address:																								
Phone #: 575.909.0326/575.605.3471 Fax #:		City:																								
Project #: Project Owner: Cimarex Energy		State:																								
Project Name: Cottonwood Draw 22 Federal Corn #5H (Cottonwood Draw 22)		Zip:																								
Project Location: Eddy County, NM		Phone #:																								
Sampler Name: M. Collier		Fax #:																								
FOR LAB USE ONLY																										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.	SAMPLING																
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE																		
H220302	1 TT-1 1-3'	6	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓													
														OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME							
														1	1	1	1	1	1	1	1	1	1	1	1	1
														2 TT-2 5-5.5'	3 TT-3 3-3'	1	1	1	1	1	1	1	1	1	1	1
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 the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.																										
Relinquished By: <i>M. Collier</i>		Date: 5-24-23		Received By: <i>James Delaney</i>		Date: 5-24-23		Time: 1:45		Remarks: <i>*Samples in plastic bags. OK 1/27/22</i>																
Relinquished By: <i>M. Collier</i>		Date: 5-24-23		Received By: <i>James Delaney</i>		Date: 5-24-23		Time: 1:45		Remarks: <i>*Samples in plastic bags. OK 1/27/22</i>																
Delivered By: (Circle One)		Observed Temp.: °C		Sample Condition		CHECKED BY: (Initials)		Turnaround Time:		Standard		Bacteria (only) Sample Condition														
Sampler - UPS - Bus - Other:		Corrected Temp.: °C		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		9-20		Rush <input checked="" type="checkbox"/> Standard <input type="checkbox"/>		Cool <input type="checkbox"/> Intact <input type="checkbox"/>		Cool <input type="checkbox"/> Intact <input type="checkbox"/>														
		0.3		No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>				Thermometer ID #113		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Observed Temp.: °C														
				No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>				Correction Factor -0.5°C		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Corrected Temp.: °C														

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com





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

---

February 14, 2022

MICHAEL COLLIER

H & R ENTERPRISES

1010 GAMBLIN ROAD

HOBBS, NM 88240

RE: COTTONWOOD DRAW 22 FED COM #5H

Enclosed are the results of analyses for samples received by the laboratory on 02/11/22 12:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://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



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: S - 1 5' (H220546-01)**

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	02/11/2022	ND	2.01	100	2.00	6.95	
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04	
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59	
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23	
Total BTX	<0.300	0.300	02/11/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	02/11/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	11.0	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	16.7	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 92.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 111 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: S - 2 5' (H220546-02)**

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	02/11/2022	ND	2.01	100	2.00	6.95		
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04		
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59		
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23		
Total BTEX	<0.300	0.300	02/11/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/11/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	<10.0	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	<10.0	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 111 % 66.9-136

Surrogate: 1-Chlorooctadecane 133 % 59.5-142

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: S - 3 5' (H220546-03)**

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	02/11/2022	ND	2.01	100	2.00	6.95	
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04	
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59	
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23	
Total BTEX	<0.300	0.300	02/11/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	02/11/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	<10.0	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	<10.0	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 106 % 66.9-136

Surrogate: 1-Chlorooctadecane 127 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: S - 4 5' (H220546-04)**

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	02/11/2022	ND	2.01	100	2.00	6.95	
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04	
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59	
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23	
Total BTEX	<0.300	0.300	02/11/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/11/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	13.9	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	16.7	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 94.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 113 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: S - 5 5' (H220546-05)**

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	02/11/2022	ND	2.01	100	2.00	6.95		
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04		
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59		
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23		
Total BTEx	<0.300	0.300	02/11/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	02/11/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	<10.0	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	<10.0	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 101 % 66.9-136

Surrogate: 1-Chlorooctadecane 120 % 59.5-142

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: S - 6 5' (H220546-06)**

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	02/11/2022	ND	2.01	100	2.00	6.95		
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04		
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59		
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23		
Total BTEX	<0.300	0.300	02/11/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	02/11/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985		
DRO >C10-C28*	26.5	10.0	02/12/2022	ND	251	126	200	0.328		
EXT DRO >C28-C36	12.1	10.0	02/12/2022	ND						

Surrogate: 1-Chlorooctane 108 % 66.9-136

Surrogate: 1-Chlorooctadecane 131 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: N. SW 5' (H220546-07)**

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	02/11/2022	ND	2.01	100	2.00	6.95	
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04	
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59	
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23	
Total BTEX	<0.300	0.300	02/11/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	02/11/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	26.7	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	15.5	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 106 % 66.9-136

Surrogate: 1-Chlorooctadecane 128 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: W. SW 5' (H220546-08)**

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	02/11/2022	ND	2.01	100	2.00	6.95		
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04		
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59		
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23		
Total BTEx	<0.300	0.300	02/11/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	02/11/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	39.1	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	20.1	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 108 % 66.9-136

Surrogate: 1-Chlorooctadecane 130 % 59.5-142

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/11/2022	Sampling Date:	02/08/2022
Reported:	02/14/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD DRAW 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: E. SW 5' (H220546-09)**

BTEx 8021B		mg/kg		Analyzed By: MS/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.95	
Toluene*	<0.050	0.050	02/11/2022	ND	2.01	100	2.00	6.04	
Ethylbenzene*	<0.050	0.050	02/11/2022	ND	1.94	96.9	2.00	6.59	
Total Xylenes*	<0.150	0.150	02/11/2022	ND	6.06	101	6.00	5.23	
Total BTEx	<0.300	0.300	02/11/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	02/11/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2022	ND	228	114	200	0.985	
DRO >C10-C28*	<10.0	10.0	02/12/2022	ND	251	126	200	0.328	
EXT DRO >C28-C36	<10.0	10.0	02/12/2022	ND					

Surrogate: 1-Chlorooctane 102 % 66.9-136

Surrogate: 1-Chlorooctadecane 122 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: <b>H&amp;R ENTERPRISES</b>		P.O. #:	
Project Manager: <b>M. COLLIER</b>		Company: <b>CIMAREX</b>	
Address:		Attn: <b>Laci Luit</b>	
City:	State:	Zip:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner: <b>CIMAREX</b>		
Project Name: <b>COTTONWOOD OAKS 22 RD 5th (COTTONWOOD 22)</b>		City:	Zip:
Project Location: <b>EDDY COUNTY, NM</b>		State:	Phone #:
Sampler Name: <b>M. COLLIER</b>		Fax #:	

FOR LAB USE ONLY		MATRIX		PRESERV		SAMPLING											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH	BTEX	CHLORIDES
<b>H220546</b>	1 5-1 5'	<input checked="" type="checkbox"/>	1			<input checked="" type="checkbox"/>							2-8-22	12:45	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	2 5-2 5'													12:50			
	3 5-3 5'													12:55			
	4 5-4 5'													1:00			
	5 5-5 5'													1:05			
	6 5-6 5'													1:10			
	7 N.S.W 5'													1:15			
	8 W.S.W 5'													1:30			
	9 E.S.W 5'													1:25			

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Relinquished By: <b>M. COLLIER</b>	Date: <b>2-11-22</b>	Received By: <b>J. Keene</b>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date: <b>2-11-22</b>	Received By:	All Results are emailed. Please provide Email address:	
REMARKS: <b>TPH 12/11/22 Rush!</b>				

Delivered By: (Circle One)	Observed Temp. °C <b>22</b>	Sample Condition	CHECKED BY: (Initials)	Turnaround Time:	Standard	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C <b>1.7</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>JK</b>	Thermometer ID #113	<b>Rush</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Observed Temp. °C
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Correction Factor -0.5°C		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Corrected Temp. °C

FORM 006-R 3.2 10/07/12

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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

---

February 21, 2022

MICHAEL COLLIER  
H & R ENTERPRISES  
1010 GAMBLIN ROAD  
HOBBS, NM 88240

RE: COTTONWOOD DRAW 22 FED COM #5H

Enclosed are the results of analyses for samples received by the laboratory on 02/16/22 8:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://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 fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene  
Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/16/2022	Sampling Date:	02/15/2022
Reported:	02/21/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: NE 0-1' (H220589-01)**

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	02/18/2022	ND	1.93	96.4	2.00	14.0	
Toluene*	<0.050	0.050	02/18/2022	ND	1.91	95.5	2.00	14.7	
Ethylbenzene*	<0.050	0.050	02/18/2022	ND	1.84	92.0	2.00	14.9	
Total Xylenes*	<0.150	0.150	02/18/2022	ND	5.69	94.8	6.00	15.6	
Total BTX	<0.300	0.300	02/18/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	02/17/2022	ND	432	108	400	7.69		

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	02/18/2022	ND	219	110	200	3.38	
DRO >C10-C28*	<10.0	10.0	02/18/2022	ND	216	108	200	1.54	
EXT DRO >C28-C36	<10.0	10.0	02/18/2022	ND					

Surrogate: 1-Chlorooctane 77.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 81.5 % 59.5-142

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/16/2022	Sampling Date:	02/15/2022
Reported:	02/21/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: NW 0-1' (H220589-02)**

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	02/18/2022	ND	1.93	96.4	2.00	14.0		
Toluene*	<0.050	0.050	02/18/2022	ND	1.91	95.5	2.00	14.7		
Ethylbenzene*	<0.050	0.050	02/18/2022	ND	1.84	92.0	2.00	14.9		
Total Xylenes*	<0.150	0.150	02/18/2022	ND	5.69	94.8	6.00	15.6		
Total BTEx	<0.300	0.300	02/18/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	02/17/2022	ND	432	108	400	7.69		

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	02/18/2022	ND	219	110	200	3.38	
DRO >C10-C28*	<10.0	10.0	02/18/2022	ND	216	108	200	1.54	
EXT DRO >C28-C36	<10.0	10.0	02/18/2022	ND					

Surrogate: 1-Chlorooctane 70.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 73.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/16/2022	Sampling Date:	02/15/2022
Reported:	02/21/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: SE 0-1' (H220589-03)**

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	02/19/2022	ND	1.93	96.4	2.00	14.0	
Toluene*	<0.050	0.050	02/19/2022	ND	1.91	95.5	2.00	14.7	
Ethylbenzene*	<0.050	0.050	02/19/2022	ND	1.84	92.0	2.00	14.9	
Total Xylenes*	<0.150	0.150	02/19/2022	ND	5.69	94.8	6.00	15.6	
Total BTX	<0.300	0.300	02/19/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	02/17/2022	ND	432	108	400	7.69		

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	02/18/2022	ND	219	110	200	3.38	
DRO >C10-C28*	<10.0	10.0	02/18/2022	ND	216	108	200	1.54	
EXT DRO >C28-C36	<10.0	10.0	02/18/2022	ND					

Surrogate: 1-Chlorooctane 73.9 % 66.9-136

Surrogate: 1-Chlorooctadecane 80.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

H & R ENTERPRISES  
 MICHAEL COLLIER  
 1010 GAMBLIN ROAD  
 HOBBS NM, 88240  
 Fax To: NONE

Received:	02/16/2022	Sampling Date:	02/15/2022
Reported:	02/21/2022	Sampling Type:	Soil
Project Name:	COTTONWOOD DRAW 22 FED COM #5	Sampling Condition:	Cool & Intact
Project Number:	( COTTONWOOD 22 )	Sample Received By:	Tamara Oldaker
Project Location:	CIMAREX - EDDY CO NM		

**Sample ID: SW 0-1' (H220589-04)**

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	02/19/2022	ND	1.93	96.4	2.00	14.0		
Toluene*	<0.050	0.050	02/19/2022	ND	1.91	95.5	2.00	14.7		
Ethylbenzene*	<0.050	0.050	02/19/2022	ND	1.84	92.0	2.00	14.9		
Total Xylenes*	<0.150	0.150	02/19/2022	ND	5.69	94.8	6.00	15.6		
Total BTEX	<0.300	0.300	02/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	02/17/2022	ND	432	108	400	7.69		

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	02/18/2022	ND	224	112	200	1.62	
DRO >C10-C28*	<10.0	10.0	02/18/2022	ND	226	113	200	0.675	
EXT DRO >C28-C36	<10.0	10.0	02/18/2022	ND					

Surrogate: 1-Chlorooctane 88.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 93.8 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager




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Notes and Definitions

- QR-04            The RPD for the BS/BSD was outside of historical limits.
- 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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: **HAR ENTERPRISES**  
Project Manager: **Michael Couper**

Address:

City:

Phone #:

Project #:

Project Name: **COTTONWOOD DRAW 22 FEB #5 (COTTONWOOD 22)**

Project Location: **EDDY COUNTY, NM**

Sampler Name: **M. Couper**

FOR LAB USE ONLY

BILL TO

ANALYSIS REQUEST

P.O. #:

Company: **CIMAREX**

Attn: **WELLS**

Address:

City:

State:

Zip:

Phone #:

Fax #:

Lab I.D.

**H220589**

Sample I.D.

1 AE 0-1'  
2 NW 0-1'  
3 SE 0-1'  
4 SW 0-1'

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER:

ACID/BASE:

ICE / COOL

OTHER:

DATE

TIME

TPH

BTEX

CHLORIDES

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Relinquished By:

Date: **2-16-22**

Time: **0800**

Date:

Time:

Received By:

Date:

Time:

Received By:

Date:

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Form 500 Rev 2/10/07

Observed Temp. °C **6.4**

Corrected Temp. °C **5.9**

Sample Condition

Cool Intact

Yes No

CHECKED BY:

(Initials)

✓

Turnaround Time:

Standard

Rush

Thermometer ID #113

Correction Factor -0.5°C

Bacteria (only)

Cool Intact

Yes No

Corrected Temp. °C

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

REMARKS:

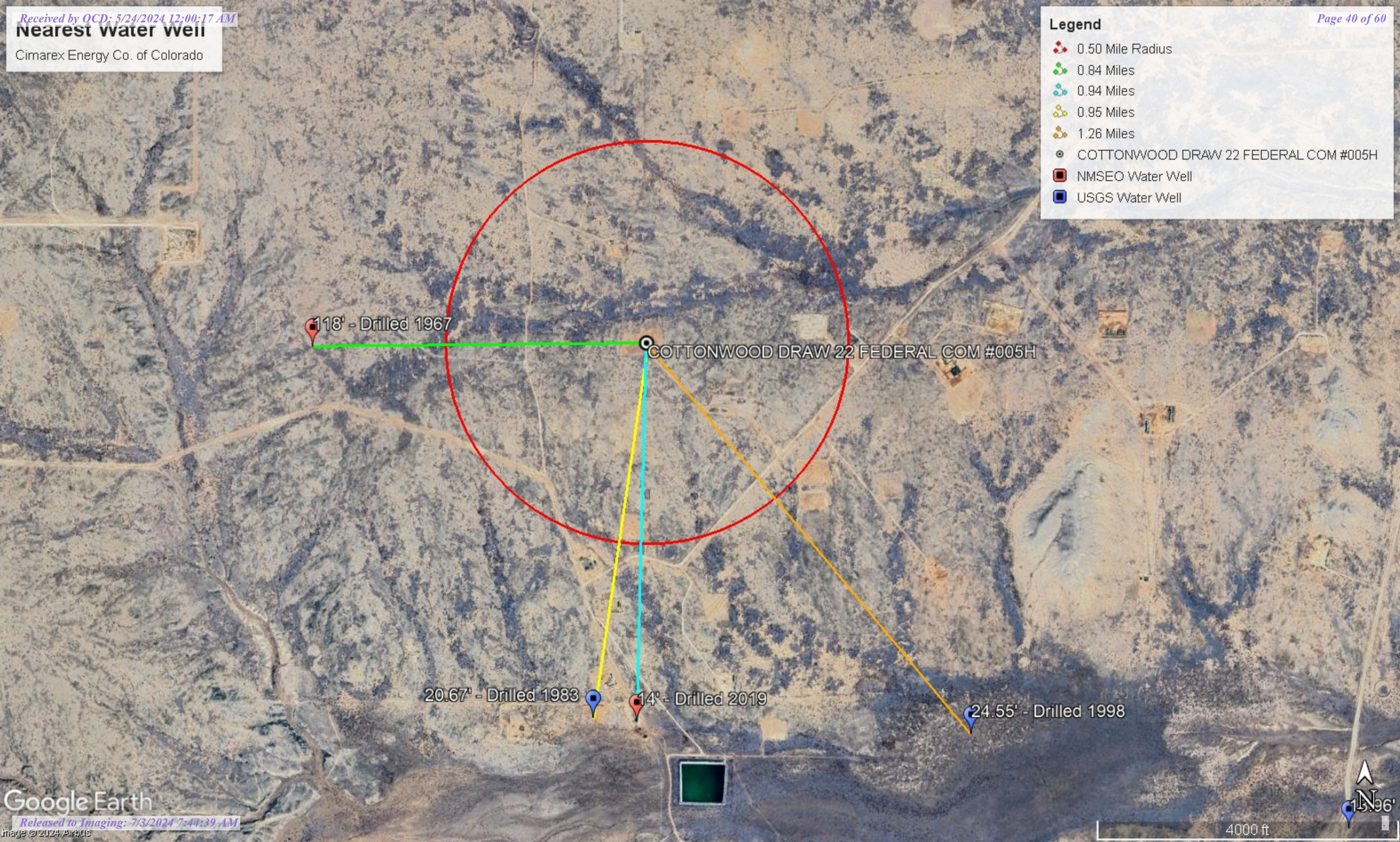


**Nearest water well**

Cimarex Energy Co. of Colorado

**Legend**

- 0.50 Mile Radius
- 0.84 Miles
- 0.94 Miles
- 0.95 Miles
- 1.26 Miles
- COTTONWOOD DRAW 22 FEDERAL COM #005H
- NMSEO Water Well
- USGS Water Well








# High Karst

Cimarex Energy Co. of Colorado

## Legend

-  COTTONWOOD DRAW 22 FEDERAL COM #005H
-  High


 COTTONWOOD DRAW 22 FEDERAL COM #005H





# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)				(quarters are smallest to largest)				(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y		
	C 01368	1	1	22	25S	26E		567261	3554059*		
x											
Driller License:		28		Driller Company:			SMITH, A.F.				
Driller Name:		SMITH, A.F.									
Drill Start Date:		06/15/1967		Drill Finish Date:			06/19/1967		Plug Date:		
Log File Date:		08/01/1967		PCW Rcv Date:					Source:		Shallow
Pump Type:					Pipe Discharge Size:					Estimated Yield:	
Casing Size:		7.00		Depth Well:			143 feet		Depth Water:		118 feet
x											
Water Bearing Stratifications:				Top	Bottom	Description					
				118	120	Sandstone/Gravel/Conglomerate					
x											
Casing Perforations:				Top	Bottom						
				113	143						
x											

\*UTM location was derived from PLSS - see Help


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# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)							
		(quarters are smallest to largest)				(NAD83 UTM in meters)			
<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
222B5	C 04329 POD1	2	2	2	27	25S	26E	568577	3552567 
<hr/>									
<b>Driller License:</b> 1348		<b>Driller Company:</b>		TAYLOR WATER WELL SERVICE					
<b>Driller Name:</b> CLINTON E TAYLOR									
<b>Drill Start Date:</b> 06/07/2019		<b>Drill Finish Date:</b>		06/08/2019		<b>Plug Date:</b>			
<b>Log File Date:</b> 06/17/2019		<b>PCW Rcv Date:</b>				<b>Source:</b>		Shallow	
<b>Pump Type:</b>		<b>Pipe Discharge Size:</b>				<b>Estimated Yield:</b>		100 GPM	
<b>Casing Size:</b> 4.50		<b>Depth Well:</b>		57 feet		<b>Depth Water:</b>		14 feet	
<hr/>									
<b>Water Bearing Stratifications:</b>				<b>Top</b>	<b>Bottom</b>	<b>Description</b>			
				14	24	Other/Unknown			
				24	57	Other/Unknown			
<hr/>									
<b>Casing Perforations:</b>				<b>Top</b>	<b>Bottom</b>				
				20	57				
<hr/>									

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POINT OF DIVERSION SUMMARY



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National Water Information System: Web Interface


USGS Water Resources

Data Category:  
Groundwater

Geographic Area:  
New Mexico

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Groundwater levels for New Mexico

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 Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

Agency code = usgs  
site\_no list =

- 320627104163001

Minimum number of levels = 1  
[Save file of selected sites](#) to local disk for future upload

USGS 320627104163001 25S.26E.27.21144

Eddy County, New Mexico  
Latitude 32°06'27", Longitude 104°16'30" NAD27  
Land-surface elevation 3,251 feet above NAVD88  
This well is completed in the Other aquifers (N9999OTHER) national aquifer.  
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1983-02-15			D	62610	3228.66	NGVD29	1	Z		
1983-02-15			D	62611	3230.33	NAVD88	1	Z		
1983-02-15			D	72019	20.67		1	Z		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static



Section	Code	Description
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

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**Title: Groundwater for New Mexico: Water Levels**  
**URL: [https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?](https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?site_no=320627104163001&agency_cd=USGS&format=html)**



Page Contact Information: [New Mexico Water Data Maintainer](#)  
Page Last Modified: 2024-05-23 12:14:50 EDT  
0.29 0.25 nadww01



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">C 03655 POD3</a>	CUB	ED		1	4	4	22	25S	26E	568458	3553019	1079			
<a href="#">C 01368</a>	C	ED			1	1	22	25S	26E	567261	3554059*	1349	143	118	25
<a href="#">C 04329 POD1</a>	C	ED		2	2	2	27	25S	26E	568577	3552567	1520	57	14	43
<a href="#">C 03569 POD1</a>	CUB	ED		2	1	1	14	25S	26E	568862	3555746	1678	30	0	30
<a href="#">C 02220</a>	CUB	ED		3	1	2	26	25S	26E	569598	3552352*	1996	35		
<a href="#">C 03654 POD1</a>	CUB	ED		2	3	1	24	25S	26E	570654	3553773	2068			
<a href="#">C 02221</a>	CUB	ED		4	3	2	25	25S	26E	571412	3551961*	3517	35		
<a href="#">C 01013</a>	C	ED				4	25	25S	26E	571505	3551456*	3912	245		
<a href="#">C 02675</a>	C	ED		1	4	1	09	25S	26E	565907	3556978*	3957	180	45	135

Average Depth to Water: **44 feet**

Minimum Depth: **0 feet**

Maximum Depth: **118 feet**

Record Count: 9

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 568610.37

**Northing (Y):** 3554087.66

**Radius:** 4000

\*UTM location was derived from PLSS - see Help

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5/23/24 10:12 AM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER



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National Water Information System: Web Interface


USGS Water Resources

Data Category:  
Groundwater

Geographic Area:  
New Mexico

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Groundwater levels for New Mexico

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Search Results -- 1 sites found

Agency code = usgs  
site\_no list =

- 320625104153201

Minimum number of levels = 1  
[Save file of selected sites](#) to local disk for future upload

USGS 320625104153201 25S.26E.26.213213

Eddy County, New Mexico  
Latitude 32°06'25", Longitude 104°15'32" NAD27  
Land-surface elevation 3,219 feet above NAVD88  
This well is completed in the Other aquifers (N9999OTHER) national aquifer.  
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1983-02-01			D 62610		3199.04	NGVD29	1		Z	
1983-02-01			D 62611		3200.71	NAVD88	1		Z	
1983-02-01			D 72019	18.29			1		Z	
1987-10-08			D 62610		3202.18	NGVD29	1		Z	
1987-10-08			D 62611		3203.85	NAVD88	1		Z	
1987-10-08			D 72019	15.15			1		Z	
1992-11-04			D 62610		3202.16	NGVD29	1		S	
1992-11-04			D 62611		3203.83	NAVD88	1		S	
1992-11-04			D 72019	15.17			1		S	
1998-01-07			D 62610		3192.78	NGVD29	1		S	
1998-01-07			D 62611		3194.45	NAVD88	1		S	
1998-01-07			D 72019	24.55			1		S	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

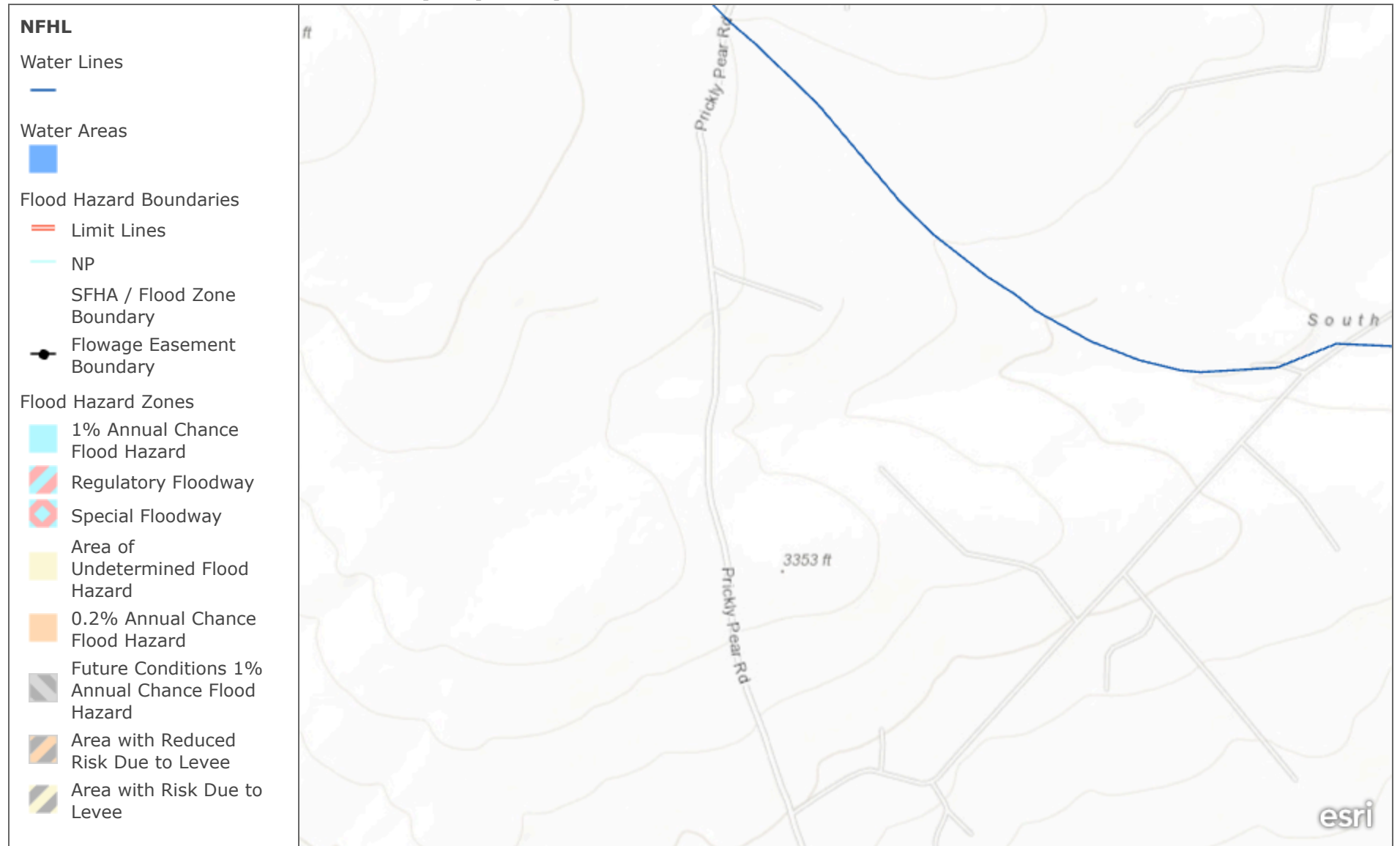
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**Title: Groundwater for New Mexico: Water Levels**  
**URL: [https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?](https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?site_no=320625104153201&agency_cd=USGS&format=html)**



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0.3 0.25 nadww01

## FEMA National Flood Hazard Layer (NFHL)



FEMA flood layer

0.3mi

Bureau of Land Management, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA



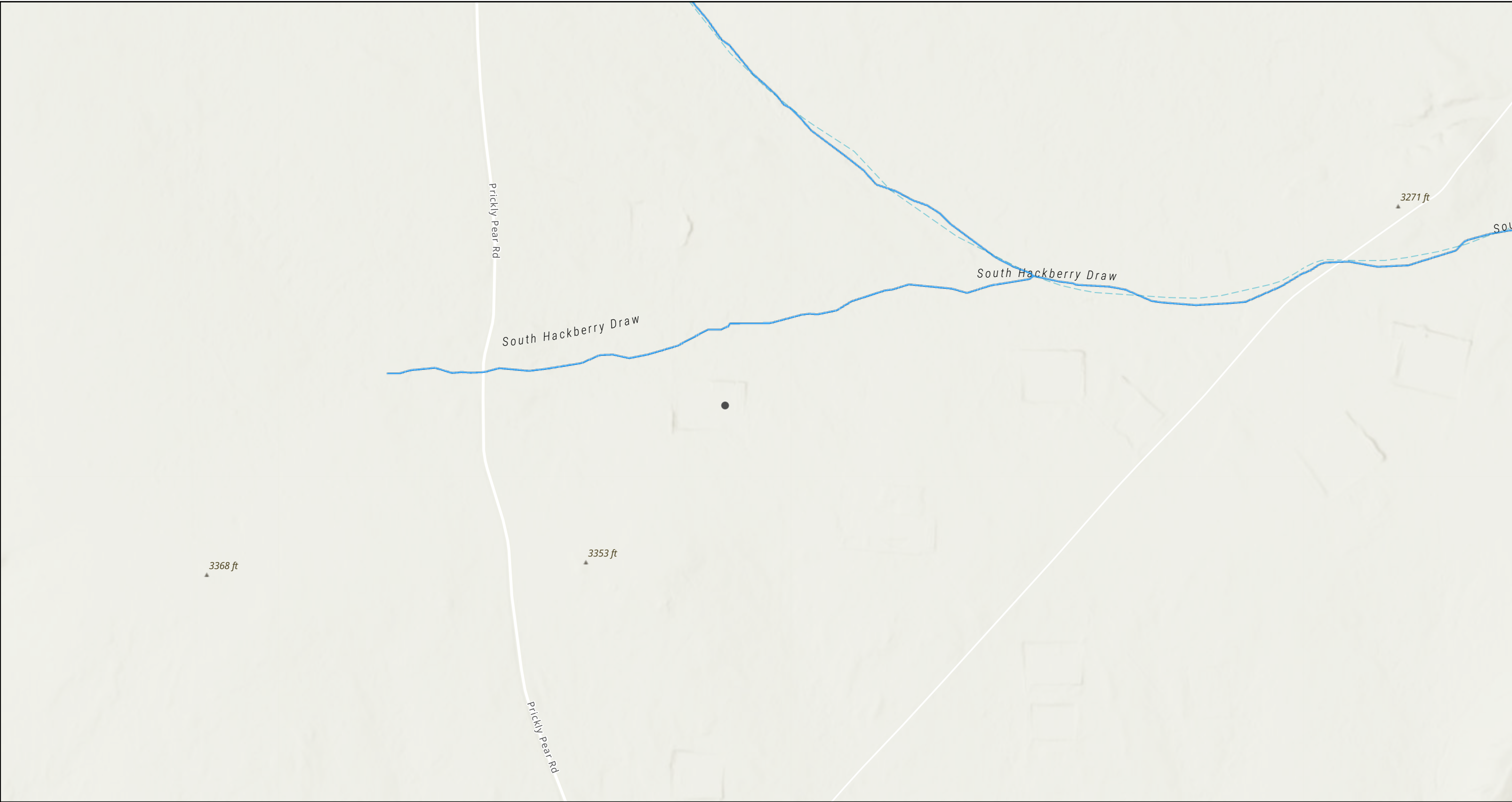
## FEMA National Flood Hazard Layer (NFHL)



FEMA flood layer

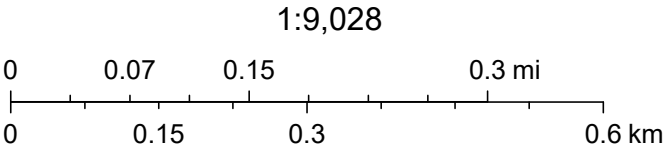
Maxar | Esri Community Maps Contributors, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

# COTTONWOOD DRAW 22 FEDERAL COM #005H



5/23/2024, 11:10:32 AM

— OSE Streams



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

QUESTIONS  
  
Action 347214

QUESTIONS

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:	162683
	Action Number:	347214
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	nKMW1106054103
Incident Name	NKMW1106054103 COTTONWOOD DRAW 22 FEDERAL COM #005H @ 30-015-37431
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received
Incident Well	[30-015-37431] COTTONWOOD DRAW 22 FEDERAL COM #005H

Location of Release Source	
Please answer all the questions in this group.	
Site Name	COTTONWOOD DRAW 22 FEDERAL COM #005H
Date Release Discovered	08/30/2010
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause:    Produced Water   Released: 0 BBL   Recovered: 0 BBL   Lost: 0 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.



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QUESTIONS, Page 2

Action 347214

**QUESTIONS (continued)**

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:	162683
	Action Number:	347214
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>More info needed to determine if this will be treated as a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Unavailable.
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Laci Luig Title: ES&H Specialist Email: DL_PermianEnvironmental@coterra.com Date: 05/23/2024
--	---

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**Santa Fe, NM 87505**

QUESTIONS, Page 3

Action 347214

**QUESTIONS (continued)**

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:
	162683
	Action Number:
	347214
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Less than or equal 25 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 200 and 300 (ft.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Zero feet, overlying, or within area
Categorize the risk of this well / site being in a karst geology	High
A 100-year floodplain	Between 200 and 300 (ft.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride	(EPA 300.0 or SM4500 Cl B)	528
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	1590
GRO+DRO	(EPA SW-846 Method 8015M)	1427
BTEX	(EPA SW-846 Method 8021B or 8260B)	7.2
Benzene	(EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	02/05/2022
On what date will (or did) the final sampling or liner inspection occur	02/08/2022
On what date will (or was) the remediation complete(d)	02/15/2022
What is the estimated surface area (in square feet) that will be reclaimed	148000
What is the estimated volume (in cubic yards) that will be reclaimed	540
What is the estimated surface area (in square feet) that will be remediated	1050
What is the estimated volume (in cubic yards) that will be remediated	540

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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**Santa Fe, NM 87505**

QUESTIONS, Page 4

Action 347214

**QUESTIONS (continued)**

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:	162683
	Action Number:	347214
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	LEA LAND LANDFILL [fEEM0112342028]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Laci Luig Title: ES&H Specialist Email: DL_PermianEnvironmental@coterra.com Date: 05/23/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
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**Santa Fe, NM 87505**

QUESTIONS, Page 5  
  
Action 347214

**QUESTIONS (continued)**

Operator:  CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:  162683
	Action Number:  347214
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Deferral Requests Only</b>	
<i>Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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Action 347214

**QUESTIONS (continued)**

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:	162683
	Action Number:	347214
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	347212
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	02/08/2022
What was the (estimated) number of samples that were to be gathered	13
What was the sampling surface area in square feet	1050

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	1050
What was the total volume (cubic yards) remediated	540
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	148000
What was the total volume (in cubic yards) reclaimed	540
Summarize any additional remediation activities not included by answers (above)	Dug and hauled impacted material to landfill. Backfilled with clean backfill material. Reclaimed entire pad (148,000 sqft) and then reseeded the entire area with BLM approved seed mix. Berms have been installed for no access to site or lease road

*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 (in .pdf format) 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.*

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.

I hereby agree and sign off to the above statement	Name: Laci Luig Title: ES&H Specialist Email: DL_PermianEnvironmental@coterra.com Date: 05/23/2024
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QUESTIONS, Page 7

Action 347214

**QUESTIONS (continued)**

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:	162683
	Action Number:	347214
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS****Reclamation Report**

*Only answer the questions in this group if all reclamation steps have been completed.*

Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	148000
What was the total volume of replacement material (in cubic yards) for this site	540

*Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.*

Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeding commence(d)	04/01/2022

Summarize any additional reclamation activities not included by answers (above)	Dug and hauled impacted material to landfill. Backfilled with clean backfill material. Reclaimed entire pad (148,000 sqft) and then reseeded the entire area with BLM approved seed mix. Berms have been installed for no access to site or lease road
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*The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseeding plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.*

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.

I hereby agree and sign off to the above statement	Name: Laci Luig Title: ES&H Specialist Email: DL_PermianEnvironmental@coterra.com Date: 05/23/2024
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Action 347214

QUESTIONS (continued)

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID: 162683
	Action Number: 347214
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Revegetation Report	
Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.	
Requesting a restoration complete approval with this submission	No
Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.	

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CONDITIONS

Action 347214

CONDITIONS

Operator: CIMAREX ENERGY CO. OF COLORADO 6001 Deauville Blvd Midland, TX 79706	OGRID:
	162683
	Action Number:
	347214
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

CONDITIONS

Created By	Condition	Condition Date
amaxwell	The reclamation report has been approved pursuant to 19.15.29.13 E. NMAC. The acceptance of this 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; or if the location fails to revegetate properly. In addition, OCD approval does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.	7/3/2024
amaxwell	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	7/3/2024