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Site Characterization and Work Plan

Chisholm Energy Operating, LLC
COTTONWOOD 29-32 FED COM
Eddy County, New Mexico
Unit Letter "A", Section 29, Township 26 South, Range 26 East
Latitude 32.001087° North, Longitude 104.307703° West
NMOCD Reference #2RP-4768; 2RP-4986; 2RP- 5560

Prepared For:

Chisholm Energy Operating, LLC
801 Cherry Street, Suite 1200
Fort Worth, TX 76102

Prepared By:

Etech Environmental & Safety Solutions, Inc.
3100 Plains Highway
Lovington, New Mexico 88260

July 2019

A handwritten signature in black ink, which appears to read "Daniel Dominguez", is written over a horizontal line.

Daniel Dominguez
Project Manager



The following Site Characterization and Work Plan serves as a condensed update on field activities undertaken and proposed actions for the afore referenced Site.

BACKGROUND

The release site is located in Unit Letter A (NE $\frac{1}{4}$ of NE $\frac{1}{4}$), Section 29, Township 26 South, Range 26 East, approximately 12 miles south east of Whites City, in Eddy County, New Mexico. The property is owned by the Bureau of Land Management.

The release site is located on an active well site and battery; latitude 32.001087 North, longitude 104.307703 West. Area Map, Water Well Map, and Site/Sample Map are included as Figure 1, Figure 2, and Figure 3, respectively. The initial NMOCD Form C-141's indicate three separate releases have occurred at this site. On May 21, 2018, an estimated 195 barrels (bbls) of produced water were released when a lightning strike caused a fire. On July 15, 2018, an estimated 50 bbls of produced water were released from a tank being used as remedial storage. On May 26, 2019, an estimated 198 bbls of produced water were released when a dump valve washed out. These releases impacted approximately 13,841 sq. ft. of well pad as well as 18,648 sq. ft. of adjacent pipeline right-of-way. The initial NMOCD Form C-141's are included as Attachment IV.

NMOCD SITE CLASSIFICATION

A search for water wells was completed utilizing the New Mexico Office of the State Engineer (NMOSE) and the United States Geologic Survey (USGS) websites. There are thirteen wells located in the area surrounding the release site (reference Table 1). Also, no wells (domestic, agriculture or public) and no bodies of surface water exist within a 1,000-foot radius of the release site (reference Figure 2). The NMOSE database indicates average water depth is approximately 45 feet below ground surface (bgs) within a 2,000-meter radius (reference Attachment II).

Utilizing this information, the NMOCD guidelines indicate the Cottonwood release site to have an initial ranking score of twenty. Based on this score, the NMOCD soil remediation levels for vertical delineation on this Site were determined as follows:

- Benzene – 10 mg/kg
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) – 50 mg/kg
- Total petroleum hydrocarbons (TPH) – 100 mg/kg
- Chloride – 600 mg/kg

DELINEATION PROGRESS

Etech personnel were on site June 10th, July 1, and July 3, 2019, to begin remediation and delineation activities. Initial surface soil sample points were established within the noticeable impacted area. Twenty-five soil sample points, SP1 – SP25, were established and advanced vertically for purposes of delineation. Discrete soil samples were retrieved at surface level only for locations SP1 – SP10. Discrete soil samples were retrieved at surface level and approximately



one-foot bgs for locations SP11 – SP25. Field screens indicated vertical delineation for chlorides had been achieved at each location except SP15 where refusal was met at ten feet bgs. Laboratory analyses confirmed delineation was achieved for all sample locations except SP15. Laboratory analysis indicates elevated chloride concentrations at SP15 to at least ten feet bgs (reference Figure 3 and Table 2). Laboratory analytical reports are provided as Attachment III.

QA/QC PROCEDURES

Discrete soil samples were delivered to Cardinal Laboratories in Hobbs, New Mexico, for BTEX, TPH, and chloride analysis. EPA Methods 8021B, SW-846 8015M, and 4500 Cl-B were utilized to determine BTEX, TPH, and Chloride concentrations, respectively. Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned and rinsed with distilled water. The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody. These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

PROPOSED ACTIONS

Etech proposes to excavate the entire release area to varying depths based on laboratory analytical results presented in Table 2. Delineation was achieved for each sample location between one and three feet bgs, apart from SP15 where refusal was met at a hard gypsum layer at ten feet bgs.

The following excavation plan is proposed: the floor of the excavation in the areas characterized by SP2, SP3, and SP8 will be excavated to a depth of approximately one-foot bgs; the areas characterized by SP1, SP4, SP7 will be excavated to a depth of approximately two feet bgs; the areas characterized by SP5, and SP6 will be excavated to a depth of approximately three feet bgs; the area off pad will be excavated to a depth of approximately three feet bgs; the area characterized by SP15 will be excavated to a depth beyond ten feet bgs, until laboratory analytical results indicate BTEX, TPH, and chloride concentrations are below NMOCD closure criteria. Excavation sidewalls will be extended laterally until laboratory analytical results indicate BTEX, TPH, and chloride concentrations are below NMOCD closure criteria.

Upon completion of excavation activities, confirmation soil samples will be collected from the excavation floor and sidewalls. These samples will consist of five-point composites representing no more than 200 square feet. Composite samples will also be collected adjacent to the release area to confirm the lateral extents of the release have been reached. These samples will be sent to an NMOCD approved laboratory for analysis of concentrations of benzene, BTEX, TPH, and chloride.

Upon receipt of laboratory analysis confirming samples were below the regulatory remediation action levels established for the site by the NMOCD, the excavations will be backfilled with imported, clean soil. Caliche will be used to backfill the pad excavations, while topsoil will be used to backfill the excavated area in the pipeline right-of-way. Caliche and topsoil will be free of deleterious material or rocks or large clumps. Backfilling will continue until the excavations



are closed. Upon completion of backfill activities, the entire disturbed area will be contoured to blend with well pad, and off pad areas.

LIMITATIONS

Etech Environmental & Safety Solutions, Inc. has prepared this *Site Characterization and Work Plan* to the best of its ability. No other warranty, expressed or implied, is made or intended. Etech has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Etech Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. Etech Environmental has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Etech Environmental has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Etech notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Chisholm Energy Operating, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Etech Environmental & Safety Solutions, Inc. and/or Chisholm Energy Operating, LLC.

Following completion of NMOCD approved Proposed Actions, Etech will provide a detailed Remediation Summary & Closure Report to Chisholm and NMOCD personnel. Chisholm and Etech personnel would welcome an opportunity to briefly discuss the Work Plan at your earliest convenience. However, should you have any questions or concerns please feel free to contact me at (432) 813-1592 or via email at daniel@etechenv.com or Mr. Tim Green at (432) 413-9747 or via email at tgreen@chisholmenergy.com. All official communication should be addressed to:

Mr. Tim Green
Chisholm Energy Operating, LLC
801 Cherry Street, Suite 1200
Fort Worth, TX 76102

Sincerely,

Etech Environmental & Safety Solutions, Inc.

A handwritten signature in black ink, appearing to read "Daniel Dominguez", is written over a light blue circular stamp.

Daniel Dominguez
Project Manager



cc: Mike Bratcher, NMOCD District 2, Artesia, NM
Tim Green, Chisholm Energy
File

Encl.: Figure 1 – Area Map
Figure 2 – Water Well Map
Figure 3 – Site/Sample Map
Table 1 – Well Data
Table 2 – Concentrations of Benzene, BTEX, TPH, & Chloride in Soil
Attachment I – Photographs
Attachment II – NMOSE Average Depth to Groundwater
Attachment III – Laboratory Analytical Results
Attachment IV – NMOCD Form C-141

FIGURES

Figure 1

Area Map
Chisholm Energy
Cottonwood 29-32 Fed Com
UL A, Sec. 29, T26S R26E
N 32.001087 W 104.307703

Legend

● Site Location

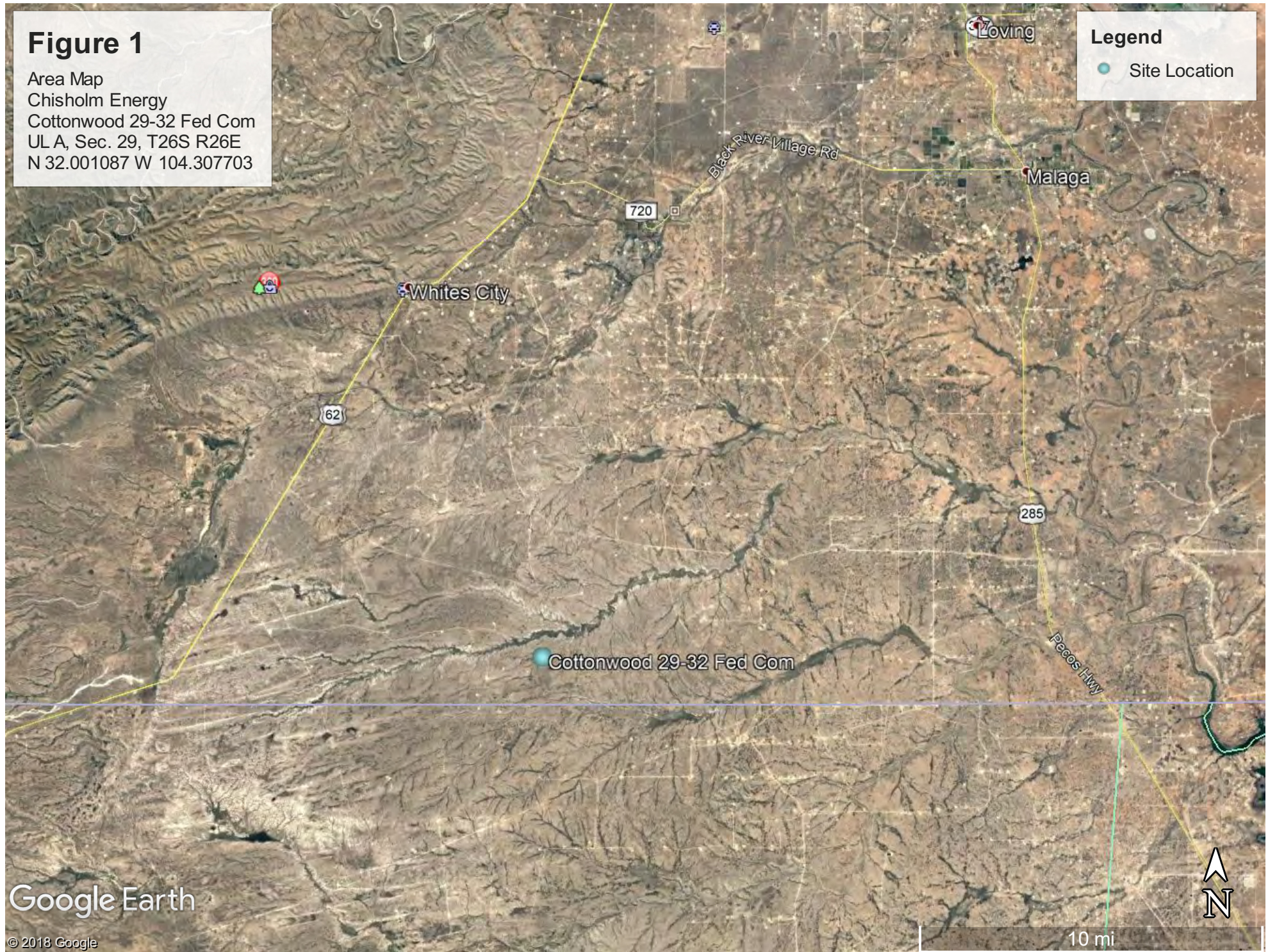


Figure 2

Water Well Map
Chisholm Energy
Cottonwood 29-32 Fed Com
UL A, Sec. 29, T26S R26E
N32.001087 W 104.307703

Legend

- 1,000 foot radius
- 2,000 meter radius
- Old Cavern Rd
- Site Location
- Well Locations

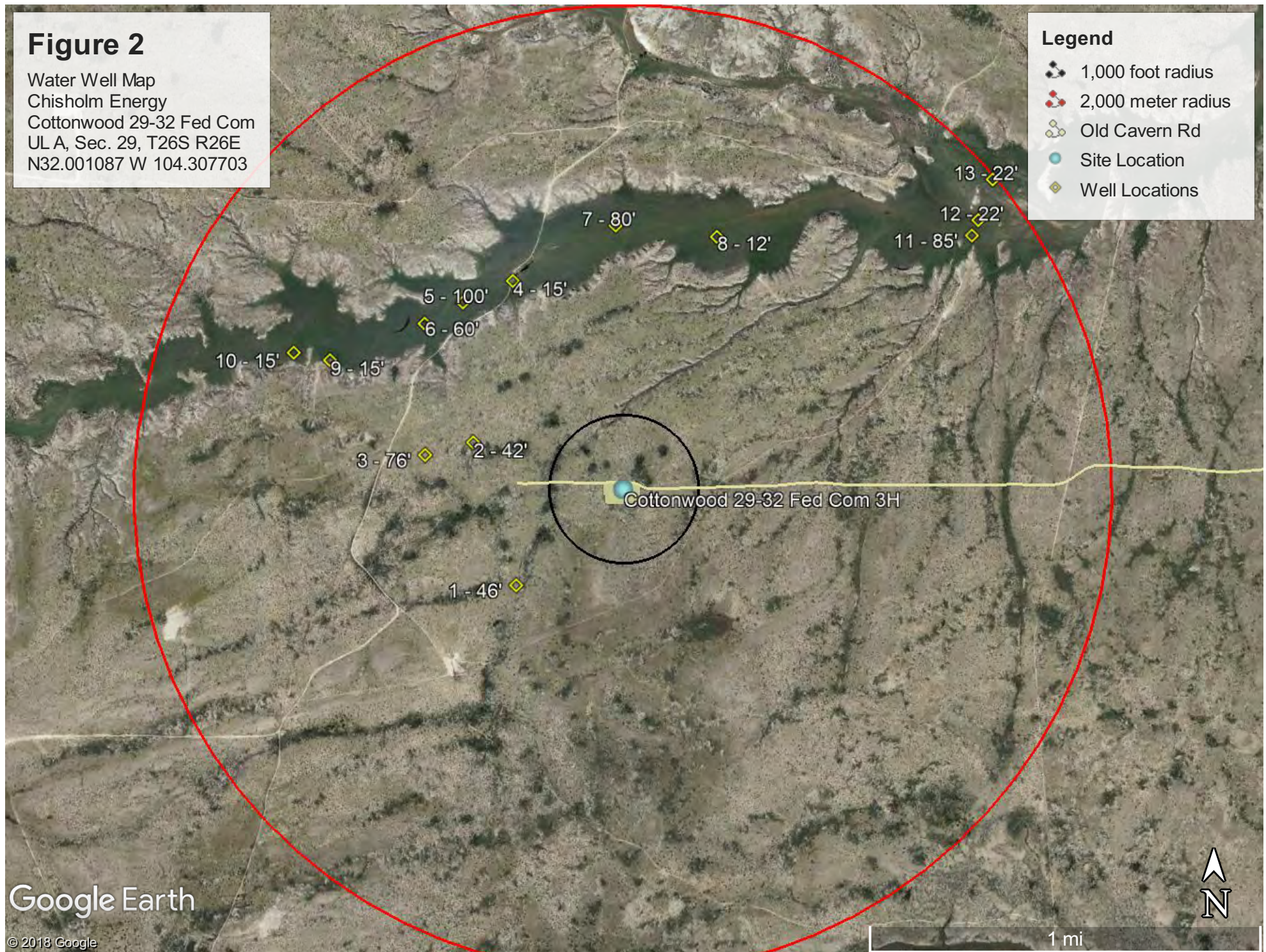
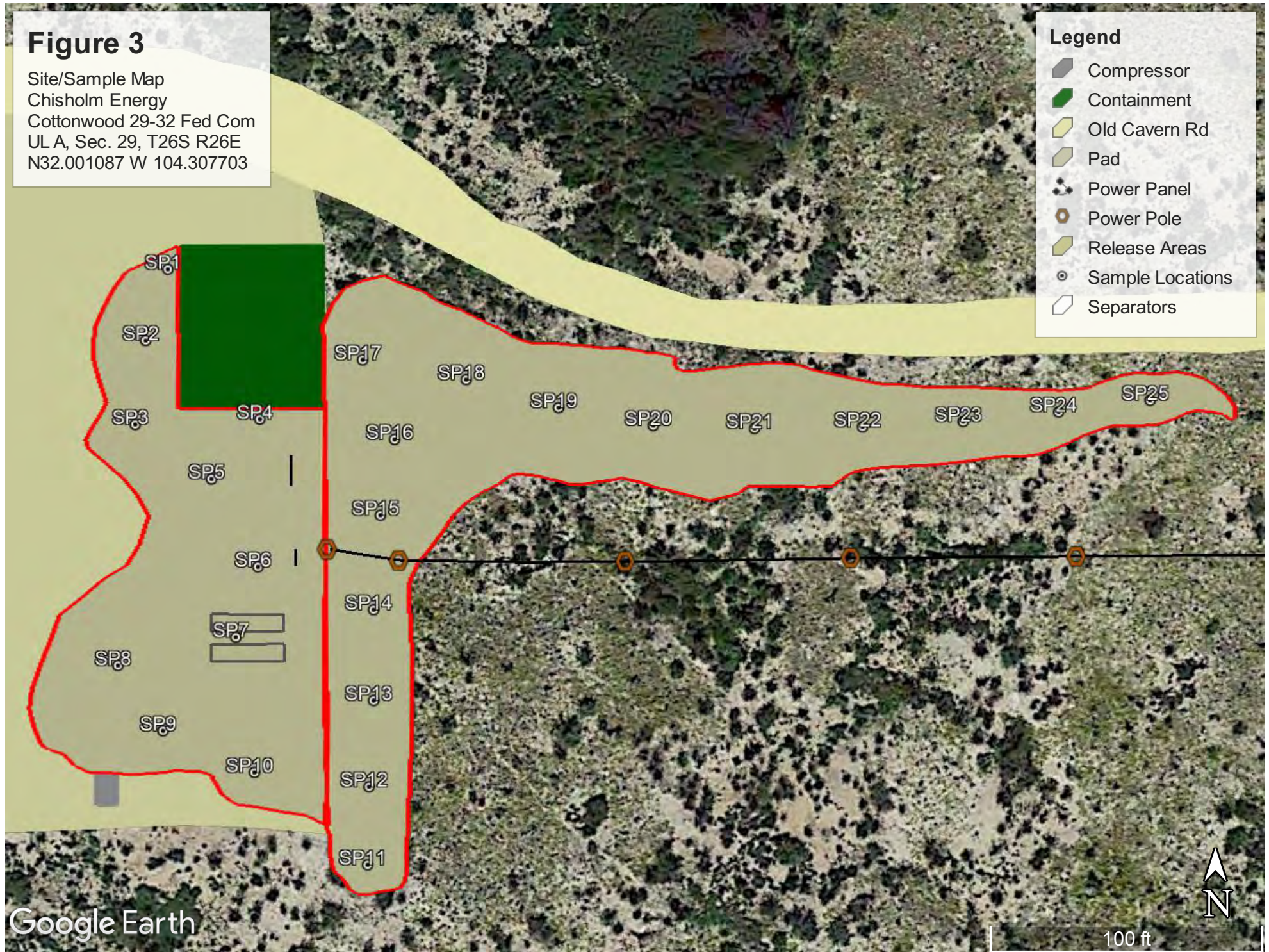


Figure 3

Site/Sample Map
Chisholm Energy
Cottonwood 29-32 Fed Com
UL A, Sec. 29, T26S R26E
N32.001087 W 104.307703

Legend

- Compressor
- Containment
- Old Cavern Rd
- Pad
- Power Panel
- Power Pole
- Release Areas
- Sample Locations
- Separators



TABLES

TABLE 1
Well Data
Chisholm Energy Operating, LLC
Cottonwood 29-32 Fed Com

Ref.#	Well Number	Use	Diversion ^A	Owner	q64	q16	q4	Sec	Tws	Rng	Easting	Northing	Distance ^B	Date Measured	Surface Elevation ^C	Depth to Water in ft bgs
1	320100104185501			USGS	3	4	1	29	26S	26E	564664	3542487	591	08-Jan-98	3,453	46
2	C 04270 POD3	MON	0	3BEAR ENERGY-OWNER	3	4	3	20	26S	26E	564484	3543072	645	18-Aug-18	3,457	42
3	C 04270 POD1	MON	0	3BEAR ENERGY-OWNER	3	4	3	20	26S	26E	564288	3543019	824	18-Aug-18	3,464	76
4	C 03812 POD1	STK	3	DAVID MALEY	4	4	1	20	26S	26E	564641	3543737	969	16-Jun-15	3,418	15
5	C 04046 POD1	PRO	0	CHISHOLM ENERGY	1	2	3	20	26S	26E	564437	3543647	1,011	19-May-17	3,423	100
6	C 04041 POD1	STK	3	DAVID MALEY	2	1	3	20	26S	26E	564281	3543559	1,061	13-Jun-17	3,427	60
7	C 04048 POD1	PRO	0	EVA LAVERNE MALEY	2	3	2	20	26S	26E	565061	3543969	1,084	23-Apr-17	3,395	80
8	C 04170 POD1	EXP	0	DAVID MALEY	4	4	2	20	26S	26E	565477	3543926	1,106	08-Nov-18	3,378	12
9	C 03810 POD1	STK	3	DAVID MALEY	3	1	3	20	26S	26E	563895	3543406	1,314	17-Jun-15	3,439	15
10	C 03811 POD1	STK	3	DAVID MALEY	4	1	4	19	26S	26E	563746	3543436	1,463	18-Jun-15	3,435	15
11	C 04091 POD1	EXP	0	DAVID MALEY	2	3	2	21	26S	26E	566527	3543940	1,773	19-Jun-17	3,345	85
12	C 04172 POD1	EXP	0	DAVID MALEY	2	3	2	21	26S	26E	566553	3544004	1,833	31-May-18	3,344	22
13	C 04173 POD1	EXP	0	DAVID MALEY	4	1	2	21	26S	26E	566611	3544172	1,983	29-May-18	3,347	22

Data obtained from the New Mexico Office of the State Engineer and USGS Website

^A = In acre feet per anum

^B = In meters

^C = Elevation interpolated from Google Earth based on referenced location

MON = Monitoring well

STK = 72-12-1 Livestock watering

PRO = 72-12-1 Prospecting or Development of Natural Resource

EXP = Exploration

quarters are 1=NW, 2=NE, 3=SW, 4=SE; quarters are smallest to biggest

TABLE 2
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL
CHISHOLM ENERGY OPERATING, LLC
Cottonwood 29-32 Fed Com

SAMPLE LOCATION	DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	FIELD CHLORIDE (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₀ (mg/Kg)	DRO C ₁₀ -C ₂₈ (mg/Kg)	EXT DRO C ₂₈ -C ₃₆ (mg/Kg)	TOTAL TPH C ₆ -C ₃₆ (mg/Kg)	CHLORIDE (mg/Kg)
SP1	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	1.07	1.07	11.8	338	<10.0	349.8	8,400
	1	7/1/2019	In-Situ	1,172	--	--	--	--	--	--	--	--	--	--
	2	7/1/2019	In-Situ	280	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	176
SP2	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	0.33	0.33	<10.0	22.5	<10.0	22.5	12,400
	1	7/1/2019	In-Situ	320	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	160
SP3	Surface	6/10/2019	In-Situ	--	<0.050	0.06	<0.050	1.04	1.10	13.4	782	191	986.4	9,000
	1	7/1/2019	In-Situ	364	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	288
SP4	Surface	6/10/2019	In-Situ	--	<0.050	0.08	<0.050	0.697	0.773	15.1	826	92.4	933.5	11,800
	1	7/1/2019	In-Situ	1,252	--	--	--	--	--	--	--	--	--	--
	2	7/1/2019	In-Situ	364	<0.050	<0.050	<0.050	0.379	0.379	<10.0	101	14.9	115.9	192
SP5	Surface	6/10/2019	In-Situ	--	<0.050	0.300	0.300	4.97	5.57	132	2,090	307	2,529	10,600
	1	7/1/2019	In-Situ	>2,428	--	--	--	--	--	--	--	--	--	--
	2	7/1/2019	In-Situ	1,728	--	--	--	--	--	--	--	--	--	--
	3	7/1/2019	In-Situ	320	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	42.70	<10.0	42.7	272
SP6	Surface	6/10/2019	In-Situ	--	<0.050	0.327	0.390	5.61	6.33	245	1,390	93	1,728	2,920
	1	7/1/2019	In-Situ	>2,428	--	--	--	--	--	--	--	--	--	--
	2	7/1/2019	In-Situ	2,428	--	--	--	--	--	--	--	--	--	--
	3	7/1/2019	In-Situ	320	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	160
SP7	Surface	6/10/2019	In-Situ	--	<0.050	5.69	2.35	38.9	47	1,290	12,100	178	13,568	2,280
	1	7/1/2019	In-Situ	2,260	--	--	--	--	--	--	--	--	--	--
	2	7/1/2019	In-Situ	504	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	384
SP8	Surface	6/10/2019	In-Situ	--	<0.050	1.81	1.31	13.6	16.7	644	4,820	440	5,904	1,280
	1	7/1/2019	In-Situ	280	<0.050	2.53	<0.050	21.9	24.5	1,380	2,980	112	4,472	128
SP9	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	240
SP10	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	192
SP 11	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	211	29.9	240.9	608
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	752
	2	7/3/2019	In-Situ	456	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	34.6	24.6	59.2	48

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CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL
CHISHOLM ENERGY OPERATING, LLC
Cottonwood 29-32 Fed Com

SAMPLE LOCATION	DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	FIELD CHLORIDE (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₀ (mg/Kg)	DRO C ₁₀ -C ₂₈ (mg/Kg)	EXT DRO C ₂₈ -C ₃₆ (mg/Kg)	TOTAL TPH C ₆ -C ₃₆ (mg/Kg)	CHLORIDE (mg/Kg)
SP12	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	0.89	0.89	20.20	993	167	1,180.2	49,600
	1	6/10/2019	In-Situ	--	<0.050	4.52	4.70	96.9	106	4,750	15,100	1,130	20,980	4,800
	2	7/3/2019	In-Situ	1,172	--	--	--	--	--	--	--	--	--	--
	3	7/3/2019	In-Situ	556	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	34.7	<10.0	34.7	320
SP13	Surface	6/10/2019	In-Situ	--	<0.050	0.109	0.161	2.61	2.88	98.4	4,960	971	6,029.4	11,400
	1	6/10/2019	In-Situ	--	<0.050	2.05	<0.050	42.0	44.1	1,520	6,220	759	8,499	7,760
	2	7/3/2019	In-Situ	660	--	--	--	--	--	--	--	--	--	--
	3	7/3/2019	In-Situ	556	<0.050	0.769	<0.050	9.32	10.1	1,010	6,860	887	8,757	272
SP14	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	242	<10.0	242	17,000
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	261	<10.0	261	2,240
	2	7/3/2019	In-Situ	896	--	--	--	--	--	--	--	--	--	--
	3	7/3/2019	In-Situ	408	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	18.6	<10.0	18.6	288
SP15	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	475	30.1	505.1	27,600
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	14,800
	2	7/3/2019	In-Situ	>2,428	--	--	--	--	--	--	--	--	--	--
	3	7/3/2019	In-Situ	>2,428	--	--	--	--	--	--	--	--	--	--
	4	7/3/2019	In-Situ	>2,428	--	--	--	--	--	--	--	--	--	--
	5	7/3/2019	In-Situ	5,316	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	6,960
	8	7/16/2019	In-Situ	>2,584	--	--	--	--	--	--	--	--	--	--
	10	7/16/2019	In-Situ	2,504	--	--	--	--	--	--	--	--	--	--
SP16	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	16.5	3,110	645	3,771.5	8,400
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	432
	2	7/3/2019	In-Situ	320	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	160
SP17	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	15,200
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	3,760
	2	7/3/2019	In-Situ	164	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	14.9	31.3	46.2	160
SP18	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	3,120
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	1,840
	2	7/3/2019	In-Situ	504	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	336

TABLE 2
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL
CHISHOLM ENERGY OPERATING, LLC
Cottonwood 29-32 Fed Com

SAMPLE LOCATION	DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	FIELD CHLORIDE (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₀ (mg/Kg)	DRO C ₁₀ -C ₂₈ (mg/Kg)	EXT DRO C ₂₈ -C ₃₆ (mg/Kg)	TOTAL TPH C ₆ -C ₃₆ (mg/Kg)	CHLORIDE (mg/Kg)
SP19	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	288
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	112
	2	7/3/2019	In-Situ	896	--	--	--	--	--	--	--	--	--	--
	3	7/3/2019	In-Situ	136	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	112
SP20	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	10.8	564	41.1	615.9	384
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	9,400
	2	7/3/2019	In-Situ	832	--	--	--	--	--	--	--	--	--	--
	3	7/3/2019	In-Situ	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	112
SP21	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	33.5	611	<10.0	644.5	1,150
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	4,000
	2	7/3/2019	In-Situ	556	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	224
SP22	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	0.272	<0.300	<10.0	98.8	<10.0	98.8	11,800
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	0.233	<0.300	10.4	54.3	<10.0	64.7	9,400
	2	7/3/2019	In-Situ	364	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	192
SP23	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	182	<10.0	182	2,720
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	38.7	<10.0	38.7	3,200
	2	7/3/2019	In-Situ	164	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	48
SP24	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	43.9	<10.0	43.9	512
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	2,720
	2	7/3/2019	In-Situ	136	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	32
SP25	Surface	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	1,070
	1	6/10/2019	In-Situ	--	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	96
	2	7/3/2019	In-Situ	364	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0	112
NMOCD Regulatory Standard					10				50				100	600

-- = Not Analyzed

Bold = in excess of NMOCD Regulatory Standard


ATTACHMENTS

ATTACHMENT I
Photographs

Project Name: Cottonwood 29-32 Fed Com
Project No: 10034

Photograph Log

Photo No: 1.	
Direction Taken: East	
Date Taken: 5/26/19	
Description: View across release area to the east	

Photo No: 2.	
Direction Taken: West	
Date Taken: 5/26/19	
Description: View across release area to the west	

Project Name: Cottonwood 29-32 Fed Com
Project No: 10034

Photograph Log



Photo No: 3.	
Direction Taken: East	
Date Taken: 5/26/19	
Description: Release area on well pad between to separators and off pad to the east	

Photo No: 4.	
Direction Taken: North	
Date Taken: 5/26/19	
Description: Release area under process lines flowing off pad to the east	

Project Name: Cottonwood 29-32 Fed Com
Project No: 10034

Photograph Log


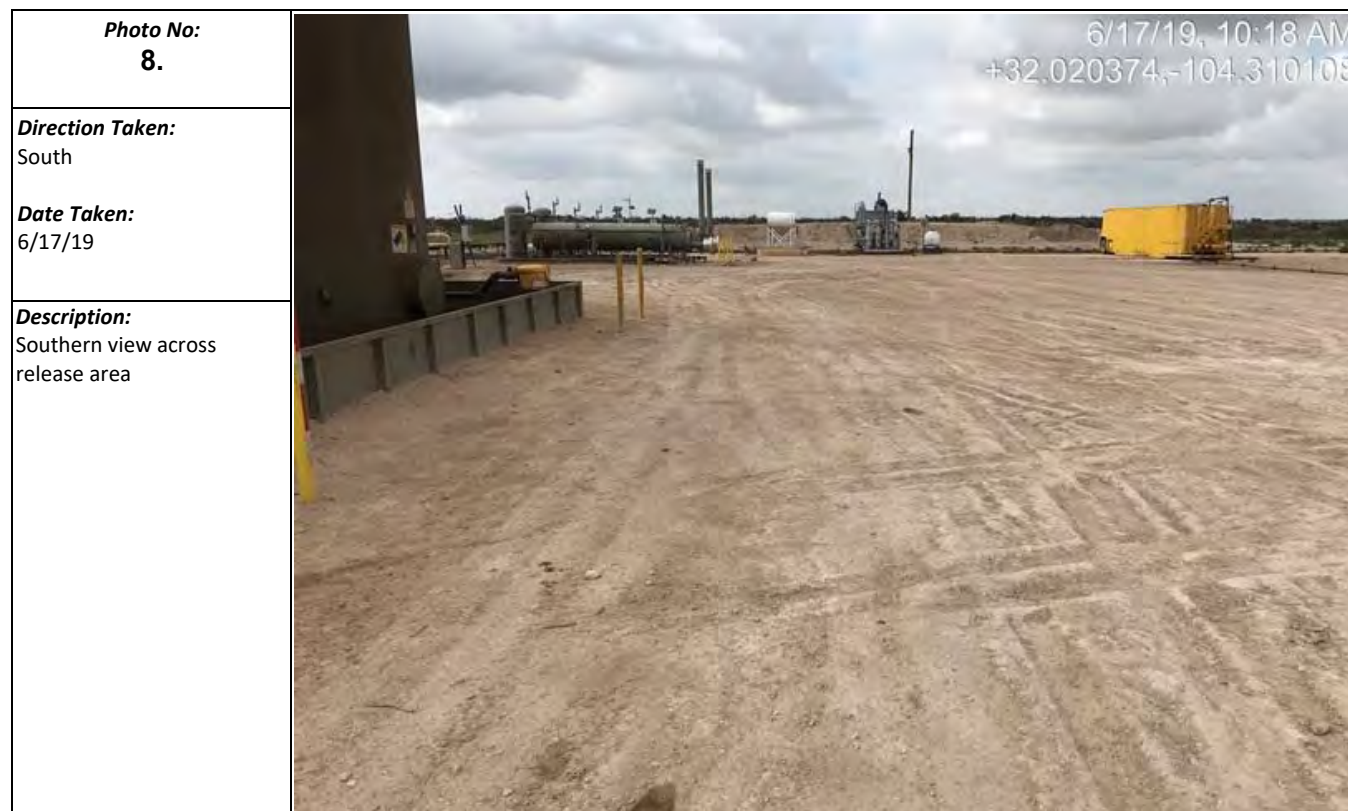
Photo No: 5.	 A wide-angle photograph showing a dirt road or pad area. In the background, there are several large cylindrical storage tanks and some industrial structures under a cloudy sky. The ground is sandy and uneven.
Direction Taken: West	
Date Taken: 6/17/19	
Description: Western view across release area off pad along lease road	

Photo No: 6.	 A photograph showing a dirt pad area next to several large cylindrical storage tanks. The tanks are situated on a raised platform. The ground is sandy and uneven. The sky is cloudy.
Direction Taken: South	
Date Taken: 6/17/19	
Description: Southern view across release area off pad	

Project Name: Cottonwood 29-32 Fed Com
Project No: 10034

Photograph Log





Project Name: Cottonwood 29-32 Fed Com
Project No: 10034

Photograph Log

Project Name: Cottonwood 29-32 Fed Com
Project No: 10034

Photograph Log

Photo No: 11.	
Direction Taken: West	
Date Taken: 7/16/19	
Description: Attempted delineation at SP15	
Photo No: 12.	
Direction Taken: North	
Date Taken: 7/16/19	
Description: Attempted delineation at SP15 with refusal at 10 feet bgs at hard gypsum layer	

ATTACHMENT II
NMOSE Average Depth to Groundwater



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
C 04270 POD3	CUB	ED	3	4	3	20	26S	26E	564484	3543072		645	50	42	8
C 04270 POD4	CUB	ED	3	4	3	20	26S	26E	564327	3542970		779	75		
C 04270 POD1	CUB	ED	3	4	3	20	26S	26E	564288	3543019		824	90	76	14
C 03812 POD1	C	ED	4	4	1	20	26S	26E	564641	3543737		969	96	15	81
C 04046 POD1	CUB	ED	1	2	3	20	26S	26E	564437	3543647		1011	140	100	40
C 04041 POD1	C	ED	2	1	3	20	26S	26E	564281	3543559		1061	100	60	40
C 01351 X	CUB	ED	4	4	1	20	26S	26E	564581	3543822*		1071	25		
C 04048 POD1	CUB	ED	2	3	2	20	26S	26E	565061	3543969		1084	140	80	60
C 04170 POD1	CUB	ED	4	4	2	20	26S	26E	565478	3543926		1106	136	12	124
C 01351 X-2	CUB	ED	3	1	3	20	26S	26E	563978	3543413*		1241	25		
C 03810 POD1	C	ED	3	1	3	20	26S	26E	563896	3543406		1314	100	15	85
C 01351	CUB	ED	4	2	4	19	26S	26E	563772	3543411*		1429	25		
C 03811 POD1	C	ED	4	1	4	19	26S	26E	563746	3543436		1463	46	15	31
C 04171 POD1	CUB	ED	1	3	2	21	26S	26E	566393	3543991		1700	153		
C 04091 POD1	CUB	ED	2	3	2	21	26S	26E	566528	3543940		1773	140	85	55
C 04172 POD1	CUB	ED	2	3	2	21	26S	26E	566553	3544004		1833	116	22	94
C 02791	CUB	ED		4	4	17	26S	26E	565288	3544739*		1862	100		
C 04173 POD1	CUB	ED	4	1	2	21	26S	26E	566612	3544172		1983	117	22	95

Average Depth to Water: **45 feet**

Minimum Depth: **12 feet**

Maximum Depth: **100 feet**

Record Count: 18

UTMNAD83 Radius Search (in meters):

Easting (X): 565101.83

Northing (Y): 3542885.48

Radius: 2000

*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.

6/12/19 7:37 AM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater

Geographic Area:

New Mexico

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for New Mexico

Click to hide state-specific text

Site Selection Results -- 1 sites found

lat_long_bounding_box

=

Position	Latitude	Longitude
Corner 1	32.038261	104.334814
Corner 2	32.002183	104.289468
Coordinates are entered as Decimal Degrees. DMS values are converted to Decimal degrees using NAD83 as the datum. Make your bounding box bigger if you are using NAD27 Datum for your DMS values		

Minimum number of 1
levels =

[Save file of selected sites](#) to local disk for future upload

Data for individual sites can be obtained by selecting the site number below

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Levels
USGS	<u>320100104185501</u>	26S.26E.29.143432	1983-02-17	1998-01-08	5

[Questions about sites/data?](#)

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Title: Groundwater levels -- 1 sites found

URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>



Page Contact Information: [New Mexico Water Data Maintainer](#)

Page Last Modified: 2019-06-12 09:51:00 EDT

0.52 0.48 nadww02

ATTACHMENT III
Laboratory Analytical Results



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

June 20, 2019

DANIEL DOMINGUEZ

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: COTTONWOOD 29-32 FED

Enclosed are the results of analyses for samples received by the laboratory on 06/12/19 14:05.

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/ga/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 "Coley D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 1 @ SURFACE (H902042-01)

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	06/18/2019	ND	2.14	107	2.00	2.43		
Toluene*	<0.050	0.050	06/18/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/18/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	1.07	0.150	06/18/2019	ND	6.11	102	6.00	2.16		
Total BTEX	1.07	0.300	06/18/2019	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	8400	16.0	06/14/2019	ND	400	100	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*	11.8	10.0	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	338	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	<10.0	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 88.1 % 41-142

Surrogate: 1-Chlorooctadecane 98.6 % 37.6-147

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:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 2 @ SURFACE (H902042-02)

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	06/18/2019	ND	2.14	107	2.00	2.43		
Toluene*	<0.050	0.050	06/18/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/18/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	0.331	0.150	06/18/2019	ND	6.11	102	6.00	2.16		
Total BTEX	0.331	0.300	06/18/2019	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	12400	16.0	06/14/2019	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 99.8 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 3 @ SURFACE (H902042-03)

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	06/18/2019	ND	2.14	107	2.00	2.43		
Toluene*	0.055	0.050	06/18/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/18/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	1.04	0.150	06/18/2019	ND	6.11	102	6.00	2.16		
Total BTEX	1.10	0.300	06/18/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	9000	16.0	06/14/2019	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 95.5 % 41-142

Surrogate: 1-Chlorooctadecane 125 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 4 @ SURFACE (H902042-04)

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	06/18/2019	ND	2.14	107	2.00	2.43		
Toluene*	0.076	0.050	06/18/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/18/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	0.697	0.150	06/18/2019	ND	6.11	102	6.00	2.16		
Total BTEX	0.773	0.300	06/18/2019	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	11800	16.0	06/14/2019	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						

Surrogate: 1-Chlorooctane 92.8 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 5 @ SURFACE (H902042-05)

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	06/18/2019	ND	2.14	107	2.00	2.43		
Toluene*	0.300	0.050	06/18/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	0.300	0.050	06/18/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	4.97	0.150	06/18/2019	ND	6.11	102	6.00	2.16		
Total BTEX	5.57	0.300	06/18/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 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	10600	16.0	06/14/2019	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
									S-04

GRO C6-C10*	132	10.0	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	2090	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	307	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 129 % 41-142

Surrogate: 1-Chlorooctadecane 152 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 6 @ SURFACE (H902042-06)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	06/18/2019	ND	2.14	107	2.00	2.43	
Toluene*	0.327	0.100	06/18/2019	ND	2.13	106	2.00	1.87	
Ethylbenzene*	0.390	0.100	06/18/2019	ND	2.02	101	2.00	1.39	
Total Xylenes*	5.61	0.300	06/18/2019	ND	6.11	102	6.00	2.16	
Total BTEX	6.33	0.600	06/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	2920	16.0	06/14/2019	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						S-04

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	245	10.0	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	1390	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	93.0	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 160 % 41-142

Surrogate: 1-Chlorooctadecane 130 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 7 @ SURFACE (H902042-07)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.500	0.500	06/19/2019	ND	2.14	107	2.00	2.43		
Toluene*	5.69	0.500	06/19/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	2.35	0.500	06/19/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	38.9	1.50	06/19/2019	ND	6.11	102	6.00	2.16		
Total BTEX	47.0	3.00	06/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	2280	16.0	06/14/2019	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
									S-06

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1290	100	06/14/2019	ND	236	118	200	4.47	
DRO >C10-C28*	12100	100	06/14/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	178	100	06/14/2019	ND					

Surrogate: 1-Chlorooctane 468 % 41-142

Surrogate: 1-Chlorooctadecane 412 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 8 @ SURFACE (H902042-08)

BTEX 8021B		mg/kg		Analyzed By: ms				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	06/19/2019	ND	2.14	107	2.00	2.43	
Toluene*	1.81	0.200	06/19/2019	ND	2.13	106	2.00	1.87	
Ethylbenzene*	1.31	0.200	06/19/2019	ND	2.02	101	2.00	1.39	
Total Xylenes*	13.6	0.600	06/19/2019	ND	6.11	102	6.00	2.16	
Total BTEX	16.7	1.20	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 131 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1280	16.0	06/17/2019	ND	400	100	400	0.00	
TPH 8015M									

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	644	10.0	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	4820	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	440	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 312 % 41-142

Surrogate: 1-Chlorooctadecane 215 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 9 @ SURFACE (H902042-09)

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	06/19/2019	ND	2.14	107	2.00	2.43	
Toluene*	<0.050	0.050	06/19/2019	ND	2.13	106	2.00	1.87	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	2.02	101	2.00	1.39	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	6.11	102	6.00	2.16	
Total BTEX	<0.300	0.300	06/19/2019	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	240	16.0	06/17/2019	ND	400	100	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	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	<10.0	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	<10.0	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 99.0 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 10 @ SURFACE (H902042-10)

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	06/19/2019	ND	2.14	107	2.00	2.43		
Toluene*	<0.050	0.050	06/19/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	<0.150	0.150	06/19/2019	ND	6.11	102	6.00	2.16		
Total BTEX	<0.300	0.300	06/19/2019	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	192	16.0	06/17/2019	ND	400	100	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	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	<10.0	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	<10.0	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 97.3 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 11 @ SURFACE (H902042-11)

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	06/19/2019	ND	2.14	107	2.00	2.43		
Toluene*	<0.050	0.050	06/19/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	<0.150	0.150	06/19/2019	ND	6.11	102	6.00	2.16		
Total BTEX	<0.300	0.300	06/19/2019	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	608	16.0	06/17/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/13/2019	ND	236	118	200	4.47		
DRO >C10-C28*	211	10.0	06/13/2019	ND	215	108	200	7.27		
EXT DRO >C28-C36	29.9	10.0	06/13/2019	ND						

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 154 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 11 @ 1' (H902042-12)

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	06/19/2019	ND	2.14	107	2.00	2.43		
Toluene*	<0.050	0.050	06/19/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	<0.150	0.150	06/19/2019	ND	6.11	102	6.00	2.16		
Total BTEX	<0.300	0.300	06/19/2019	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	752	16.0	06/17/2019	ND	400	100	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	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	<10.0	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	<10.0	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 95.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 12 @ SURFACE (H902042-13)

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	06/19/2019	ND	2.14	107	2.00	2.43		
Toluene*	<0.050	0.050	06/19/2019	ND	2.13	106	2.00	1.87		
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	2.02	101	2.00	1.39		
Total Xylenes*	0.887	0.150	06/19/2019	ND	6.11	102	6.00	2.16		
Total BTEX	0.887	0.300	06/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	49600	16.0	06/17/2019	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 92.4 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 12 @ 1' (H902042-14)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<2.00	2.00	06/19/2019	ND	2.13	107	2.00	0.957		
Toluene*	4.52	2.00	06/19/2019	ND	2.12	106	2.00	0.763		
Ethylbenzene*	4.70	2.00	06/19/2019	ND	1.98	98.8	2.00	1.94		
Total Xylenes*	96.9	6.00	06/19/2019	ND	5.95	99.1	6.00	1.78		
Total BTEX	106	12.0	06/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	4800	16.0	06/17/2019	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
									S-06

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	4750	100	06/14/2019	ND	236	118	200	4.47	
DRO >C10-C28*	15100	100	06/14/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	1130	100	06/14/2019	ND					

Surrogate: 1-Chlorooctane 790 % 41-142

Surrogate: 1-Chlorooctadecane 461 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 13 @ SURFACE (H902042-15)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	0.109	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	0.161	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	2.61	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	2.88	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	11400	16.0	06/17/2019	ND	400	100	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*	98.4	10.0	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	4960	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	971	10.0	06/13/2019	ND					

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	98.4	10.0	06/13/2019	ND	236	118	200	4.47	
DRO >C10-C28*	4960	10.0	06/13/2019	ND	215	108	200	7.27	
EXT DRO >C28-C36	971	10.0	06/13/2019	ND					

Surrogate: 1-Chlorooctane 134 % 41-142

Surrogate: 1-Chlorooctadecane 259 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 13 @ 1' (H902042-16)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.500	0.500	06/19/2019	ND	2.13	107	2.00	0.957		
Toluene*	2.05	0.500	06/19/2019	ND	2.12	106	2.00	0.763		
Ethylbenzene*	<0.500	0.500	06/19/2019	ND	1.98	98.8	2.00	1.94		
Total Xylenes*	42.0	1.50	06/19/2019	ND	5.95	99.1	6.00	1.78		
Total BTEX	44.1	3.00	06/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 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	7760	16.0	06/17/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1520	10.0	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	6220	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	759	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 361 % 41-142

Surrogate: 1-Chlorooctadecane 261 % 37.6-147

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Analytical Results For:

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 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 14 @ SURFACE (H902042-17)

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	06/19/2019	ND	2.13	107	2.00	0.957		
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763		
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94		
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78		
Total BTEX	<0.300	0.300	06/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	17000	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	242	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 96.7 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 14 @ 1' (H902042-18)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	2240	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	261	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 95.2 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 15 @ SURFACE (H902042-19)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	27600	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	475	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	30.1	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 95.7 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 15 @ 1' (H902042-20)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	14800	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 89.2 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 16 @ SURFACE (H902042-21)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	8400	16.0	06/17/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	16.5	10.0	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	3110	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	645	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 189 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 16 @ 1' (H902042-22)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	432	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 94.5 % 41-142

Surrogate: 1-Chlorooctadecane 97.4 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 17 @ SURFACE (H902042-23)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	15200	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 17 @ 1' (H902042-24)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	3760	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 97.4 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 18 @ SURFACE (H902042-25)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	3120	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 95.1 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 18 @ 1' (H902042-26)

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	06/19/2019	ND	2.13	107	2.00	0.957		
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763		
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94		
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78		
Total BTEX	<0.300	0.300	06/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	1840	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 84.1 % 41-142

Surrogate: 1-Chlorooctadecane 81.8 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 19 @ SURFACE (H902042-27)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	288	16.0	06/17/2019	ND	400	100	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 92.7 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 19 @ 1' (H902042-28)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	112	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 89.4 % 41-142

Surrogate: 1-Chlorooctadecane 86.7 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 20 @ SURFACE (H902042-29)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	384	16.0	06/17/2019	ND	432	108	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*	10.8	10.0	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	564	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	41.1	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 90.1 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 20 @ 1' (H902042-30)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	9400	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 84.1 % 41-142

Surrogate: 1-Chlorooctadecane 82.0 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 21 @ SURFACE (H902042-31)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	1150	16.0	06/17/2019	ND	432	108	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*	33.5	10.0	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	611	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 21 @ 1' (H902042-32)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	<0.150	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	4000	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 85.9 % 41-142

Surrogate: 1-Chlorooctadecane 85.0 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 22 @ SURFACE (H902042-33)

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	06/19/2019	ND	2.13	107	2.00	0.957	
Toluene*	<0.050	0.050	06/19/2019	ND	2.12	106	2.00	0.763	
Ethylbenzene*	<0.050	0.050	06/19/2019	ND	1.98	98.8	2.00	1.94	
Total Xylenes*	0.272	0.150	06/19/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	11800	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	98.8	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 91.2 % 41-142

Surrogate: 1-Chlorooctadecane 97.8 % 37.6-147

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Analytical Results For:

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 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 22 @ 1' (H902042-34)

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	06/15/2019	ND	2.21	111	2.00	1.65		
Toluene*	<0.050	0.050	06/15/2019	ND	2.24	112	2.00	0.599		
Ethylbenzene*	<0.050	0.050	06/15/2019	ND	2.08	104	2.00	1.59		
Total Xylenes*	0.233	0.150	06/15/2019	ND	6.26	104	6.00	1.43		
Total BTEX	<0.300	0.300	06/15/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	9400	16.0	06/17/2019	ND	432	108	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*	10.4	10.0	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	54.3	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 99.4 % 41-142

Surrogate: 1-Chlorooctadecane 99.2 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 23 @ SURFACE (H902042-35)

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	06/15/2019	ND	2.21	111	2.00	1.65	
Toluene*	<0.050	0.050	06/15/2019	ND	2.24	112	2.00	0.599	
Ethylbenzene*	<0.050	0.050	06/15/2019	ND	2.08	104	2.00	1.59	
Total Xylenes*	<0.150	0.150	06/15/2019	ND	6.26	104	6.00	1.43	
Total BTEX	<0.300	0.300	06/15/2019	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	2720	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	246	123	200	6.44	
DRO >C10-C28*	182	10.0	06/14/2019	ND	221	110	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 97.9 % 37.6-147

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 23 @ 1' (H902042-36)

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	06/15/2019	ND	2.21	111	2.00	1.65	
Toluene*	<0.050	0.050	06/15/2019	ND	2.24	112	2.00	0.599	
Ethylbenzene*	<0.050	0.050	06/15/2019	ND	2.08	104	2.00	1.59	
Total Xylenes*	<0.150	0.150	06/15/2019	ND	6.26	104	6.00	1.43	
Total BTEX	<0.300	0.300	06/15/2019	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	3200	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	185	92.3	200	3.85	
DRO >C10-C28*	38.7	10.0	06/14/2019	ND	183	91.4	200	6.10	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 87.7 % 41-142

Surrogate: 1-Chlorooctadecane 89.3 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 24 @ SURFACE (H902042-37)

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	06/15/2019	ND	2.21	111	2.00	1.65	
Toluene*	<0.050	0.050	06/15/2019	ND	2.24	112	2.00	0.599	
Ethylbenzene*	<0.050	0.050	06/15/2019	ND	2.08	104	2.00	1.59	
Total Xylenes*	<0.150	0.150	06/15/2019	ND	6.26	104	6.00	1.43	
Total BTEX	<0.300	0.300	06/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	512	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	185	92.3	200	3.85	
DRO >C10-C28*	43.9	10.0	06/14/2019	ND	183	91.4	200	6.10	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 85.7 % 41-142

Surrogate: 1-Chlorooctadecane 87.6 % 37.6-147

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Analytical Results For:

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 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 24 @ 1' (H902042-38)

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	06/15/2019	ND	2.21	111	2.00	1.65	
Toluene*	<0.050	0.050	06/15/2019	ND	2.24	112	2.00	0.599	
Ethylbenzene*	<0.050	0.050	06/15/2019	ND	2.08	104	2.00	1.59	
Total Xylenes*	<0.150	0.150	06/15/2019	ND	6.26	104	6.00	1.43	
Total BTEX	<0.300	0.300	06/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	2720	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	185	92.3	200	3.85	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	183	91.4	200	6.10	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 87.7 % 41-142

Surrogate: 1-Chlorooctadecane 89.3 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 25 @ SURFACE (H902042-39)

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	06/15/2019	ND	2.21	111	2.00	1.65	
Toluene*	<0.050	0.050	06/15/2019	ND	2.24	112	2.00	0.599	
Ethylbenzene*	<0.050	0.050	06/15/2019	ND	2.08	104	2.00	1.59	
Total Xylenes*	<0.150	0.150	06/15/2019	ND	6.26	104	6.00	1.43	
Total BTEX	<0.300	0.300	06/15/2019	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	1070	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	185	92.3	200	3.85	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	183	91.4	200	6.10	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 83.3 % 41-142

Surrogate: 1-Chlorooctadecane 83.0 % 37.6-147

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Received:	06/12/2019	Sampling Date:	06/10/2019
Reported:	06/20/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 25 @ 1' (H902042-40)

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	06/15/2019	ND	2.21	111	2.00	1.65		
Toluene*	<0.050	0.050	06/15/2019	ND	2.24	112	2.00	0.599		
Ethylbenzene*	<0.050	0.050	06/15/2019	ND	2.08	104	2.00	1.59		
Total Xylenes*	<0.150	0.150	06/15/2019	ND	6.26	104	6.00	1.43		
Total BTEX	<0.300	0.300	06/15/2019	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	96.0	16.0	06/17/2019	ND	432	108	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	06/14/2019	ND	185	92.3	200	3.85	
DRO >C10-C28*	<10.0	10.0	06/14/2019	ND	183	91.4	200	6.10	
EXT DRO >C28-C36	<10.0	10.0	06/14/2019	ND					

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 85.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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 that reads "Caley D. Keene".

Caley D. Keene, Lab Director/Quality Manager

94 jo 34 ebe d



CARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.		P.O. #:		BILL TO												ANALYSIS REQUEST															
Project Manager: Daniel Dominguez		Company:																													
Address: P.O. Box 301		Attn:																													
City: Lovington		Address:																													
Phone #: (575) 396-2378		City:																													
Fax #: (575) 396-1429		State:																													
Project #: 10034		Zip:																													
Project Name: Cottonwood 29-32 Fed		Project Owner: Chisholm Energy																													
Project Location: Eddy		State:																													
Sampler Name: Daniel Dominguez		Phone #:																													
Fax #:		Zip:																													
FOR LAB USE ONLY																															
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX						PRESERV.		SAMPLING															
SP 1 @ Surface		g		1																											
SP 2 @ Surface		g		1																											
SP 3 @ Surface		g		1																											
SP 4 @ Surface		g		1																											
SP 5 @ Surface		g		1																											
SP 6 @ Surface		g		1																											
SP 7 @ Surface		g		1																											
SP 8 @ Surface		g		1																											
SP 9 @ Surface		g		1																											
SP 10 @ Surface		g		1																											
DATE		TIME		DATE		TIME																									
6/10/19		12:00		6/10/19		12:00																									
6/10/19		12:10		6/10/19		12:10																									
6/10/19		12:20		6/10/19		12:20																									
6/10/19		12:30		6/10/19		12:30																									
6/10/19		12:40		6/10/19		12:40																									
6/10/19		12:50		6/10/19		12:50																									
6/10/19		13:00		6/10/19		13:00																									
6/10/19		13:10		6/10/19		13:10																									
6/10/19		13:20		6/10/19		13:20																									
6/10/19		13:30		6/10/19		13:30																									
Chloride		X		X		X																									
TPH (8015M)		X		X		X																									
BTEX (8021B)		X		X		X																									

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Relinquished By: *[Signature]* Date: *6/12/19* Received By: *[Signature]* Date: *6/12/19*

Relinquished By: *[Signature]* Date: *6/12/19* Received By: *[Signature]* Date: *6/12/19*

Delivered By: (Circle One) *UPS* *-3.6c* *#97* Sample Condition: ☒ Cool ☐ Intact ☐ Yes ☐ No ☐ Yes ☐ No

Checked By: *[Signature]* (Initials) *48*

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Revision 1.0

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Please email results to daniel@etechnv.com

Phone Result: ☐ Yes ☐ No Add'l Phone #:
 Fax Result: ☐ Yes ☐ No Add'l Fax #:
 REMARKS:



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc. Project Manager: Daniel Dominguez Address: P.O. Box 301 City: Lovington State: NM Zip: 88260 Phone #: (575) 396-2378 Fax #: (575) 396-1429 Project #: 10034 Project Owner: Chisholm Energy Project Name: Cottonwood 29-32 Fed Project Location: Eddy Sampler Name: Daniel Dominguez		P.O. #: Company: Attn: Address: City: State: Zip: Phone #: Fax #:		BILL TO										ANALYSIS REQUEST													
FOR LAB USE ONLY		Lab I.D. H902042		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:		PRESERV. ACID/BASE: ICE / COOL OTHER:		SAMPLING DATE TIME		Chloride TPH (8015M) BTEX (8021B)											
21		SP 16 @ Surface		g		1		x		x		x		6/10/19		14:30		x									
22		SP 16 @ 1'		g		1		x		x		x		6/10/19		14:35		x									
23		SP 17 @ Surface		g		1		x		x		x		6/10/19		14:40		x									
24		SP 17 @ 1'		g		1		x		x		x		6/10/19		14:45		x									
25		SP 18 @ Surface		g		1		x		x		x		6/10/19		14:50		x									
26		SP 18 @ 1'		g		1		x		x		x		6/10/19		14:55		x									
27		SP 19 @ Surface		g		1		x		x		x		6/10/19		15:00		x									
28		SP 19 @ 1'		g		1		x		x		x		6/10/19		15:05		x									
29		SP 20 @ Surface		g		1		x		x		x		6/10/19		15:10		x									
30		SP 20 @ 1'		g		1		x		x		x		6/10/19		15:15		x									

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Reinquished By: *[Signature]* **Date:** 6/12/19 **Received By:** *[Signature]*

Reinquished By: *[Signature]* **Date:** 6/12/19 **Received By:** *[Signature]*

Delivered By: (Circle One)
 Sampler - UPS - Bus - Other: *- 3.6 i #97*

Sample Condition
 Cool ☒ Intact ☒
 Yes ☒ No ☒
CHECKED BY: *[Signature]*

Phone Result: ☐ Yes ☐ No **Add'l Phone #:**
Fax Result: ☐ Yes ☐ No **Add'l Fax #:**

REMARKS:
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Eltech Environmental & Safety Solutions, Inc.		P.O. #:		BILL TO										ANALYSIS REQUEST																									
Project Manager: Daniel Dominguez		Company:																																					
Address: P.O. Box 301		Attn:																																					
City: Lovington		Address:																																					
Phone #: (575) 396-2378		City:																																					
Fax #: (575) 396-1429		State:																																					
Project #: 10034		Zip:																																					
Project Name: Cottonwood 29-32 Fed		Project Owner: Chisholm Energy																																					
Project Location: Eddy		State:																																					
Sampler Name: Daniel Dominguez		Phone #:																																					
Fax #:		Zip:																																					
FOR LAB USE ONLY		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											
H9D2D42		31		SP 21 @ Surface		g		1		x																6/10/19		15:15		Chloride									
32		SP 21 @ 1'		g		1		x																		6/10/19		15:20		TPH (8015M)									
33		SP 22 @ Surface		g		1		x																		6/10/19		15:25		BTEX (8021B)									
34		SP 22 @ 1'		g		1		x																		6/10/19		15:30											
35		SP 23 @ Surface		g		1		x																		6/10/19		15:35											
36		SP 23 @ 1'		g		1		x																		6/10/19		15:40											
37		SP 24 @ Surface		g		1		x																		6/10/19		15:45											
38		SP 24 @ 1'		g		1		x																		6/10/19		15:50											
39		SP 25 @ Surface		g		1		x																		6/10/19		15:55											
40		SP 25 @ 1'		g		1		x																		6/10/19		16:00											

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Relinquished By: *[Signature]* Date: 6/12/19 Received By: *[Signature]* Date: 6/12/19
 Relinquished By: *[Signature]* Date: 6/12/19 Received By: *[Signature]* Date: 6/12/19

Delivered By: (Circle One) ☒ UPS ☐ Bus ☐ Other: *-3.42* Sample Condition: ☒ Cool ☐ Intact ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No

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Revision 1.0

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Please email results to daniel@etechnv.com

Phone Result: ☐ Yes ☐ No Add'l Phone #:
 Fax Result: ☐ Yes ☐ No Add'l Fax #:
 REMARKS:



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July 11, 2019

DANIEL DOMINGUEZ

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: COTTONWOOD 29-32 FED

Enclosed are the results of analyses for samples received by the laboratory on 07/08/19 13:48.

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/ga/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 "Coley 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:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/01/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 7 @ 2' (H902314-01)

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	07/10/2019	ND	2.06	103	2.00	0.682		
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63		
Total BTEX	<0.300	0.300	07/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 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	384	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	<10.0	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 115 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/01/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 2 @ 1' (H902314-02)

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	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	<0.300	0.300	07/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 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	160	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	<10.0	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/01/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 8 @ 1' (H902314-03)

BTEX 8021B		mg/kg	Analyzed By: ms					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	2.53	0.200	07/10/2019	ND	2.09	104	2.00	1.06	
Ethylbenzene*	<0.200	0.200	07/10/2019	ND	1.98	99.0	2.00	2.19	
Total Xylenes*	21.9	0.600	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	24.5	1.20	07/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 157 % 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	07/10/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1380	10.0	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	2980	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	112	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 200 % 41-142

Surrogate: 1-Chlorooctadecane 160 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/01/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 4 @ 2' (H902314-04)

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	07/10/2019	ND	2.06	103	2.00	0.682		
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19		
Total Xylenes*	0.379	0.150	07/10/2019	ND	6.04	101	6.00	2.63		
Total BTEX	0.379	0.300	07/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	192	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	101	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	14.9	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 119 % 41-142

Surrogate: 1-Chlorooctadecane 123 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/01/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 1 @ 2' (H902314-05)

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	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	<0.300	0.300	07/10/2019	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	176	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	<10.0	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 115 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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Analytical Results For:

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Received:	07/08/2019	Sampling Date:	07/01/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 5 @ 3' (H902314-06)

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	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	<0.300	0.300	07/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	272	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	42.7	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 118 % 41-142

Surrogate: 1-Chlorooctadecane 122 % 37.6-147

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Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 3 @ 1' (H902314-07)

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	07/10/2019	ND	2.06	103	2.00	0.682		
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63		
Total BTEX	<0.300	0.300	07/10/2019	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	288	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	<10.0	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 122 % 41-142

Surrogate: 1-Chlorooctadecane 125 % 37.6-147

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Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 6 @ 3' (H902314-08)

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	07/10/2019	ND	2.06	103	2.00	0.682		
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63		
Total BTEX	<0.300	0.300	07/10/2019	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	160	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	<10.0	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 14 @ 3' (H902314-09)

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	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	<0.300	0.300	07/10/2019	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	288	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	18.6	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 121 % 41-142

Surrogate: 1-Chlorooctadecane 126 % 37.6-147

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 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 13 @ 3' (H902314-10)

BTEX 8021B		mg/kg		Analyzed By: ms				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	0.769	0.050	07/10/2019	ND	2.09	104	2.00	1.06	GC-NC
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19	GC-NC
Total Xylenes*	9.32	0.150	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	10.1	0.300	07/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 190 % 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	272	16.0	07/10/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1010	10.0	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	6860	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	887	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 254 % 41-142

Surrogate: 1-Chlorooctadecane 302 % 37.6-147

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Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 11 @ 2' (H902314-11)

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	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	<0.300	0.300	07/10/2019	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	07/10/2019	ND	400	100	400	3.92	

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	07/08/2019	ND	192	96.2	200	1.21	
DRO >C10-C28*	34.6	10.0	07/08/2019	ND	191	95.6	200	1.40	
EXT DRO >C28-C36	24.6	10.0	07/08/2019	ND					

Surrogate: 1-Chlorooctane 118 % 41-142

Surrogate: 1-Chlorooctadecane 123 % 37.6-147

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Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 12 @ 3' (H902314-12)

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	07/10/2019	ND	2.06	103	2.00	0.682	
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63	
Total BTEX	<0.300	0.300	07/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	320	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	34.7	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 15 @ 5' (H902314-13)

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	07/10/2019	ND	2.06	103	2.00	0.682		
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63		
Total BTEX	<0.300	0.300	07/10/2019	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	6960	16.0	07/10/2019	ND	400	100	400	3.92	

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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 125 % 37.6-147

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Analytical Results For:

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 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 16 @ 2' (H902314-14)

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	07/10/2019	ND	2.06	103	2.00	0.682		
Toluene*	<0.050	0.050	07/10/2019	ND	2.09	104	2.00	1.06		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	1.98	99.0	2.00	2.19		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.04	101	6.00	2.63		
Total BTEx	<0.300	0.300	07/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 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	160	16.0	07/10/2019	ND	400	100	400	3.92		

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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 121 % 37.6-147

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Analytical Results For:

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 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 17 @ 2' (H902314-15)

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	07/10/2019	ND	2.15	108	2.00	2.85		
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696		
Total BTEX	<0.300	0.300	07/10/2019	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	160	16.0	07/10/2019	ND	416	104	400	3.77	OR-03

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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	14.9	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	31.3	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 98.9 % 41-142

Surrogate: 1-Chlorooctadecane 118 % 37.6-147

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 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 18 @ 2' (H902314-16)

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	07/10/2019	ND	2.15	108	2.00	2.85	
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696	
Total BTEX	<0.300	0.300	07/10/2019	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	336	16.0	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 89.3 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 19 @ 3' (H902314-17)

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	07/10/2019	ND	2.15	108	2.00	2.85	
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696	
Total BTEX	<0.300	0.300	07/10/2019	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	112	16.0	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 20 @ 3' (H902314-18)

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	07/10/2019	ND	2.15	108	2.00	2.85		
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696		
Total BTEX	<0.300	0.300	07/10/2019	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	112	16.0	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 99.1 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 21 @ 2' (H902314-19)

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	07/10/2019	ND	2.15	108	2.00	2.85		
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696		
Total BTEX	<0.300	0.300	07/10/2019	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	224	16.0	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 90.4 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 22 @ 2' (H902314-20)

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	07/10/2019	ND	2.15	108	2.00	2.85		
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696		
Total BTEX	<0.300	0.300	07/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 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	192	16.0	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 96.9 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 23 @ 2' (H902314-21)

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	07/10/2019	ND	2.15	108	2.00	2.85	
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696	
Total BTEX	<0.300	0.300	07/10/2019	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	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 88.5 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 24 @ 2' (H902314-22)

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	07/10/2019	ND	2.15	108	2.00	2.85		
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913		
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512		
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696		
Total BTEX	<0.300	0.300	07/10/2019	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	32.0	16.0	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 99.9 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	07/08/2019	Sampling Date:	07/03/2019
Reported:	07/11/2019	Sampling Type:	Soil
Project Name:	COTTONWOOD 29-32 FED	Sampling Condition:	Cool & Intact
Project Number:	10034	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - EDDY CO NM		

Sample ID: SP 25 @ 2' (H902314-23)

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	07/10/2019	ND	2.15	108	2.00	2.85	
Toluene*	<0.050	0.050	07/10/2019	ND	2.16	108	2.00	0.913	
Ethylbenzene*	<0.050	0.050	07/10/2019	ND	2.03	101	2.00	0.512	
Total Xylenes*	<0.150	0.150	07/10/2019	ND	6.13	102	6.00	0.696	
Total BTEX	<0.300	0.300	07/10/2019	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	112	16.0	07/10/2019	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	07/09/2019	ND	202	101	200	3.95	
DRO >C10-C28*	<10.0	10.0	07/09/2019	ND	210	105	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	07/09/2019	ND					

Surrogate: 1-Chlorooctane 95.9 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
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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Caley D. Keene, Lab Director/Quality Manager

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ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

Pg 1 / 3

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:						Etech Environmental & Safety Solutions, Inc.										
Project Manager:						Daniel Dominguez										
Address:						P.O. Box 301 City: Lovington State: NM Zip: 88260 Attn: Phone #: (575) 396-2378 Fax #: (575) 396-1429 Address: Project #.: 10034 Project Owner: Chisholm Energy City: Project Name: Cottonwood 29-32 State: Zip: Project Location: Eddy Phone #: Sampler Name: Matthew Grieco Fax #:										
FOR LAB USE ONLY																
Lab I.D.						Sample I.D. 										
H902314	SP 7 @ 2'	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING	Date	Time	Chloride	TPH (8015M)	BTEX (8021B)	Add'l Phone #:	Fax Result:	Yes	No	Add'l Fax #:
1	g 1	x	x	SOIL OIL SLUDGE OTHER :	ACID/BASE: ICE / COOL OTHER :	DATE TIME	7/1/19 11:43	X X X	X X X							
2	SP 2 @ 1'	g 1	x			7/1/19 13:25	X X X	X X X								
3	SP 8 @ 1'	g 1	x			7/1/19 13:30	X X X	X X X								
4	SP 4 @ 2'	g 1	x			7/1/19 13:50	X X X	X X X								
5	SP 1 @ 2'	g 1	x			7/1/19 13:55	X X X	X X X								
6	SP 5 @ 3'	g 1	x			7/1/19 14:07	X X X	X X X								
7	SP 3 @ 1'	g 1	x			7/3/19 9:01	X X X	X X X								
8	SP 6 @ 3'	g 1	x			7/3/19 9:25	X X X	X X X								
9	SP 14 @ 3'	g 1	x			7/3/19 10:04	X X X	X X X								
10	SP 13 @ 3'	g 1	x			7/3/19 10:23	X X X	X X X								
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 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 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: Date: 7/8/19 Received By: [Signature] Time: 13:45																
Date: _____ Received By: [Signature]																
Time: _____																
Delivered BY: (Circle One) Cool Intact Sample Condition Checked BY: (Initials) Sampler - UPS - Bus - Other: 5:22 AM Yes No No No YES																
Please email results to daniield@etechenv.com.																

82 jo LZ ebe d



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Pg 2 / 3

Company Name: Elech Environmental & Safety Solutions, Inc.		P.O. #:		BILL TO		ANALYSIS REQUEST					
Project Manager: Daniel Dominguez		Company: Elech									
Address: P.O. Box 301		Attn:									
City: Lovington		State: NM		Zip: 88260							
Phone #: (575) 396-2378		Fax #: (575) 396-1429		Address:							
Project #: 10034		Project Owner: Chisholm Energy		City:							
Project Name: Cottonwood 29-32		State:		Zip:							
Project Location: Eddy		Phone #:									
Sampler Name: Matthew Grieco		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	Chloride	TPH (8015M)	BTEX (8021B)						
H9623/4	SP 11 @ 2'	g	1	x									7/3/19	10:38	x	x	x						
	SP 12 @ 3'	g	1	x									7/3/19	10:55	x	x	x						
	SP 15 @ 5'	g	1	x									7/3/19	11:45	x	x	x						
	SP 16 @ 2'	g	1	x									7/3/19	12:43	x	x	x						
	SP 17 @ 2'	g	1	x									7/3/19	12:52	x	x	x						
	SP 18 @ 2'	g	1	x									7/3/19	12:58	x	x	x						
	SP 19 @ 3'	g	1	x									7/3/19	13:21	x	x	x						
	SP 20 @ 3'	g	1	x									7/3/19	13:32	x	x	x						
	SP 21 @ 2'	g	1	x									7/3/19	13:45	x	x	x						
	SP 22 @ 2'	g	1	x									7/3/19	13:55	x	x	x						

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 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 90 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 rendered by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <i>W. J. L. Lino</i>	Date: 7/8/19	Received By: <i>Matthew Grieco</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #: _____
Relinquished By: _____	Date: _____	Received By: _____	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #: _____
Time: 13:48	Time: _____	Time: _____	REMARKS: _____	

Delivered By: (Circle One) *5.22* *497* *T. J. L.*

Sampler - UPS - Bus - Other: _____

Sample Condition: Cool ☒ Intact ☒ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No

CHECKED BY: (Initials) _____

Please email results to daniel@etechnv.com.

FORM-006
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

FORM-006
Revision 1.0

ATTACHMENT IV
NMOCD Form C-141

RECEIVED

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

MAY 22 2018

Form C-141
Revised April 3, 2017

Oil Conservation Division DISTRICT IV ARTESIA O.C.D.
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Chisholm Energy Operating, LLC <i>372137</i>	Contact	Jennifer Elrod
Address	801 Cherry St.; Suite 1200-Unit 20, Fort Worth, TX 76102	Telephone No.	817-953-3728
Facility Name	Cottonwood 29-32 East Pad	Facility Type	Well location

Surface Owner	Mineral Owner	API No.	30-015-43703 & 30-015-43705
---------------	---------------	---------	--------------------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	29	26S	26E	100	NORTH	1300	EAST	EDDY

Latitude 32.020228 Longitude -104.310622 NAD83

NATURE OF RELEASE

Type of Release	LIGHTNING STRIKE <i>P.W.</i>	Volume of Release	195 BBLS	Volume Recovered	195 BBLS
Source of Release	PRODUCED WATER TANK	Date and Hour of Occurrence	05/21/18	Date and Hour of Discovery	05/21/18 PM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	MIKE BRATCHER/RANELLE KLEIN		
By Whom?	JENNIFER ELROD	Date and Hour	05/22/18-8:00 AM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

LIGHTNING STRIKE CAUSING FIRE; MELTED PRODUCED WATER TANK INSIDE CONTAINMENT
WILL CLEAN UP AREA AND REPLACE WATER TANK AND FIX ANY DAMAGED CONTAINMENT

Describe Area Affected and Cleanup Action Taken.*

180 BBLS RELEASED INSIDE CONTAINMENT 15 BBLS REACH PAD; VACCUMED AND RECOVERED ALL RELEASED VOLUME. WILL
ALSO CLEAR ANY CONTAMINATED SOIL ON PAD 5/23/18

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

OIL CONSERVATION DIVISION

Signature: *Jennifer Elrod*

Printed Name: JENNIFER ELROD

Title: SR. REGULATORY ANALYST

E-mail Address: jelrod@chisholmenergy.com

Date: 05/22/2018

Phone: 817-953-3728

Signed By: *Mike Bratcher*
Approved by Environmental Specialist:

Approval Date: 5/22/18

Expiration Date: N/A

Conditions of Approval:

See Attached

Attached ☐

200-4708

* Attach Additional Sheets If Necessary

RECEIVED

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

JUL 16 2018

Form C-141
Revised April 3, 2017

Oil Conservation Division DISTRICT # ARTESIA 000 appropriate District Office in accordance with 19.15.29 NMAC.
1220 South St. Francis Dr.
Santa Fe, NM 87505

Release Notification and Corrective Action

NAB1820737351

312/37 OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	CHISHOLM ENERGY OPERATING, LLC	Contact	JENNIFER ELROD (OFFICE)/PAUL MARTINEZ (FIELD)
Address	801 CHERRY STREET, SUITE 1200-UNIT 20 FORT WORTH, TX 76104	Telephone No.	817-953-3728 (JENNIFER)/325-206-1722 (PAUL)
Facility Name	COTTONWOOD 29-32 FED COM WCA 3H/WCB 4H	Facility Type	WELL LOCATION
Surface Owner	STATE	Mineral Owner	FEDERAL
		API No.	30-015-43703 & 30-015-43705

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	29	26S	26E	100	NORTH	1300	EAST	EDDY

Latitude _____ Longitude _____ NAD83

NATURE OF RELEASE

Type of Release	FRAC TANK OVERFLOW	Volume of Release	50 BBLS	Volume Recovered	0 BBLS
Source of Release	TANK	Date and Hour of Occurrence	7/15/18	Date and Hour of Discovery	7/15/18
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.* HAULER DID NOT HAUL LOAD; USING FRAC TANKS AS REMEDIAL STORAGE WHILE WAITING ON TANK REPLACEMENT DUE TO LIGHTNING STRIKE. RELEASE WAS ON WELL PAD ONLY.					
Describe Area Affected and Cleanup Action Taken.* AREA WILL BE SCRAPED AND ANY OTHER REMEDIATION THAT IS NEEDED. PLANS TO START CLEANUP ON 7/16/18					

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

OIL CONSERVATION DIVISION

Signature: <i>Jennifer Elrod</i>	SIGNED BY <i>M. L. Brown</i>	
Printed Name: JENNIFER ELROD	Approved by Environmental Specialist:	
Title: SR. REGULATORY ANALYST	Approval Date: 7/20/18	Expiration Date: N/A
E-mail Address: jelrod@chisholmenergy.com	Conditions of Approval: See attached	Attached <input checked="" type="checkbox"/> 2P-48609
Date: 07/16/2018	Phone: 817-953-3728	

* Attach Additional Sheets If Necessary

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

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

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

Incident ID	
District RP	2RP-5560
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	CHISHOLM ENERGY OPERATING,, LLC	OGRID	372137
Contact Name	TIM GREEN	Contact Telephone	432-413-9747
Contact email	TGREEN@CHISHOLMENERGY.COM	Incident # (assigned by OCD)	
Contact mailing address	801 CHERRY STREET, SUITE 1200, UNIT-20 FORT WORTH, TX 76102		

Location of Release Source

Latitude 32.001087 Longitude -104.307703
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	COTTONWOOD 29-32 FED COM WCB 4H	Site Type	WELL LOCATION
Date Release Discovered	05/26/2019	API# (if applicable)	30-015-43705

Unit Letter	Section	Township	Range	County
A	29	26S	26E	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) 198.8	Volume Recovered (bbls) 150
	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 DUMP VALVE WASHED OUT CAUSING A SPILL OF APPROXIMATELY 198.8 BBLs
40"X20"X2" = 23.7 BBLs, 2"X100"X2" = 5.9 BBLs, 40"X200"X2" = 237.5 BBLs
TOTAL @ 75% POROSITY IS 198.8 BBLs SPILLED

Form C-141

State of New Mexico
Oil Conservation Division

Page 2

Incident ID	
District RP	
Facility ID	
Application ID	

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? OVER 25 BBLS
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? YES, CHISHOLM EMPLOYEE CALLED DIST 2 OFFICE AND LEFT MESSAGE	

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: <u>JENNIFER ELROD</u>	Title: <u>SR. REGULATORY ANALYST</u>
Signature: <u>Jennifer Elrod</u>	Date: <u>06/06/2019</u>
email: <u>JELROD@CHISHOLMENERGY.COM</u>	Telephone: <u>817-953-3728</u>
<u>OCD Only</u> Received by: _____ Date: _____	

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State of New Mexico
Oil Conservation Division

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Site Assessment/Characterization*This information must be provided to the appropriate district office no later than 90 days after the release discover date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>45 ft</u> (ft. bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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

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Printed Name: Jennifer Elrod

Title: Sr. Regulatory Analyst

Signature: _____

Date: _____

email: jelrod@chisholmenergy.com

Telephone: 817-953-3728

OCD Only

Received by: _____

Date: _____

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State of New Mexico
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Incident ID	nAB1814341650
District RP	
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Remediation Plan**Remediation Plan Checklist:** *Each of the following items must be included in the report.*

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

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

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

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

Printed Name: Jennifer ElrodTitle: Sr. Regulatory Analyst

Signature: _____

Date: _____

email: jelrod@chisholmenergy.comTelephone: 817-953-3728**OCD Only**

Received by: _____ Date: _____

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

Signature: Karen CollinsDate: 6/23/2021

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 2547

CONDITIONS

Operator: CHISHOLM ENERGY OPERATING, LLC 801 Cherry Street Fort Worth, TX 76102	OGRID: 372137
	Action Number: 2547
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
kcollins	The offered remediation plan is approved for all 3 release incidents covered currently with nAB1814341650. In the future for closure report each individual incident will need to be placed into OCD portal. Remember one closure report can be utilized but must be placed 3 individual times associated with each incident.	6/23/2021