Cimarex Energy
Sandy Unit Well Pad
Remediation Scope of Work
Incident ID nHMP1415024377
October 2020

Purpose:

To complete the remediation of the well pad area due to a brine-based mud spill (May 28, 2014) at the Sandy Unit Well Pad. The remediation will be completed per the following: the OCD and BLM guidance, XEC protocol and agency approval.

Phase II Scope of Work

1. Complete the EMC (electro-magnetic conductivity) survey of the surface area. The survey will utilize an EM 38 at a 0.5-meter and 1.0-meter sensitivity. Completed
2. Review the completed EMC survey to determine the impact onsite and if any impact occurred offsite. Completed – See Attachment A.
3. The area of spill impacts are noted on the EMC plat.
4. XEC will submit the scope of work for the remediation to the Artesia OCD offices for approval.

Phase III Scope of Work

1. XEC will request bids from an XEC approved contractor to remove the impacted soils on the well pad site. Note - The area to excavate will be per the soil sample (lab data) and EMC survey, and will be at a depth of 4.0 to 5.0 ft. to ensure adequate removal of the NaCl impacted soil.
2. The site will be surveyed for all buried flow lines, pipelines and gas lift lines via Line-Quest and a hydro-vacuum third party service. All lines within the impacted soil area will be flagged and marked to ensure safety of the excavation phase.
3. XEC will notify the OCD Artesia office and BLM Carlsbad office of the scheduled date for the field work.
4. XEC will complete a secondary line-sweep prior to commencing the field work.

5. Excavation will be completed with one or more of the following methods:
    a. Skid-Steer excavator
    b. Back hoe or track-hoe
    c. Hydro-Vac
6. The excavated soil will be transported to an approved New Mexico E&P waste treatment/disposal site for proper handling.
7. The on-site remediation technician will take random soil samples and test on-site to ensure the excavation depth is acceptable.
8. Soil samples will be taken of the excavation bottom and side walls per the OCD guidance rule 19.15.29.12 and sent to an XEC approved lab.
9. Upon confirmation of the clean bottom and side-walls, the excavation will be back-filled with clean caliche material.
10. Refer to Attachment B for reference to the depth of groundwater.
11. A completed C – 141 form, summary plat and soil analysis will be submitted to the OCD upon completion of the field work.

Attachment A

LEGEND

★ LOCATION OF WELLHEAD

• LOCATION OF WELL DEADMAN

N

40 0 40 80

SCALE FEET

SOURCE: AERIAL PHOTOGRAPH DATED NOVEMBER 2, 2017, GOOGLE EARTH IMAGE SERVICES (GEIS), GEOREFERENCED IMAGE

EQUUS Environmental, LLC
1323 East 71st Street, Suite 200
Tulsa, Oklahoma 74136-5065
918.921.5331
www.EQUUSENV.com

DOCUMENT TITLE: RESULTS OF EM38 SURVEY

FIGURE TITLE: ***SITE AERIAL***

CLIENT: CIMAREX ENERGY CO.

LOCATION: SANDY FEDERAL 21H WELL PAD
PERMIAN BASIN-HOBBS, EDDY CO., NEW MEXICO

DESIGNED BY	GHR		
APPROVED BY	GHR	SCALE	1"= 80'
DRAWN BY	SKG	DATE	10/5/2020

PROJECT NUMBER	FIGURE NUMBER
XECSANDY:F21H	1

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LEGEND

EM38 0.5-METER VERTICAL DIPOLE TERRAIN CONDUCTIVITY SURVEY

LOCATIONS OF EM38-MK2 GROUND CONDUCTIVITY MEASUREMENTS IN mS/m

LOCATION OF WELLHEAD

LOCATION OF WELL DEADMAN

APPARENT TERRAIN CONDUCTIVITIES

Minimum mS/m	Maximum mS/m	Color
0	20	
20	40	
40	60	
60	80	
80	100	
100	120	
120	140	
140	>160	

N

40 0 40 80

SCALE FEET

NOTES:

1) EM SURVEY PERFORMED BY EQUUS ENVIRONMENTAL, LLC ON SEPTEMBER 22, 2020. EM38-MK2 METER CONFIGURED IN VERTICAL DIPOLE MODE.

2) AERIAL PHOTOGRAPH DATED NOVEMBER 2, 2017, GOOGLE EARTH IMAGE SERVICES (GEIS), GEOREFERENCED IMAGE

3) APPARENT CONDUCTIVITY IN MILLISIEMENS PER METER (mS/m)

4) MAXIMUM DEPTH OF INVESTIGATION APPROXIMATELY 2.5 FEET BELOW GROUND SURFACE.

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DOCUMENT TITLE: RESULTS OF EM38 SURVEY

FIGURE TITLE: *EM38 0.5-METER VD CONDUCTIVITY SURVEY RESULTS*

CLIENT: CIMAREX ENERGY CO.

LOCATION: SANDY FEDERAL 21H WELL PAD
PERMIAN BASIN-HOBBS, EDDY CO., NEW MEXICO

DESIGNED BY	GHR		
APPROVED BY	GHR	SCALE	1"= 80'
DRAWN BY	SKG	DATE	10/5/2020

PROJECT NUMBER	FIGURE NUMBER
XECSANDY:F21H	2

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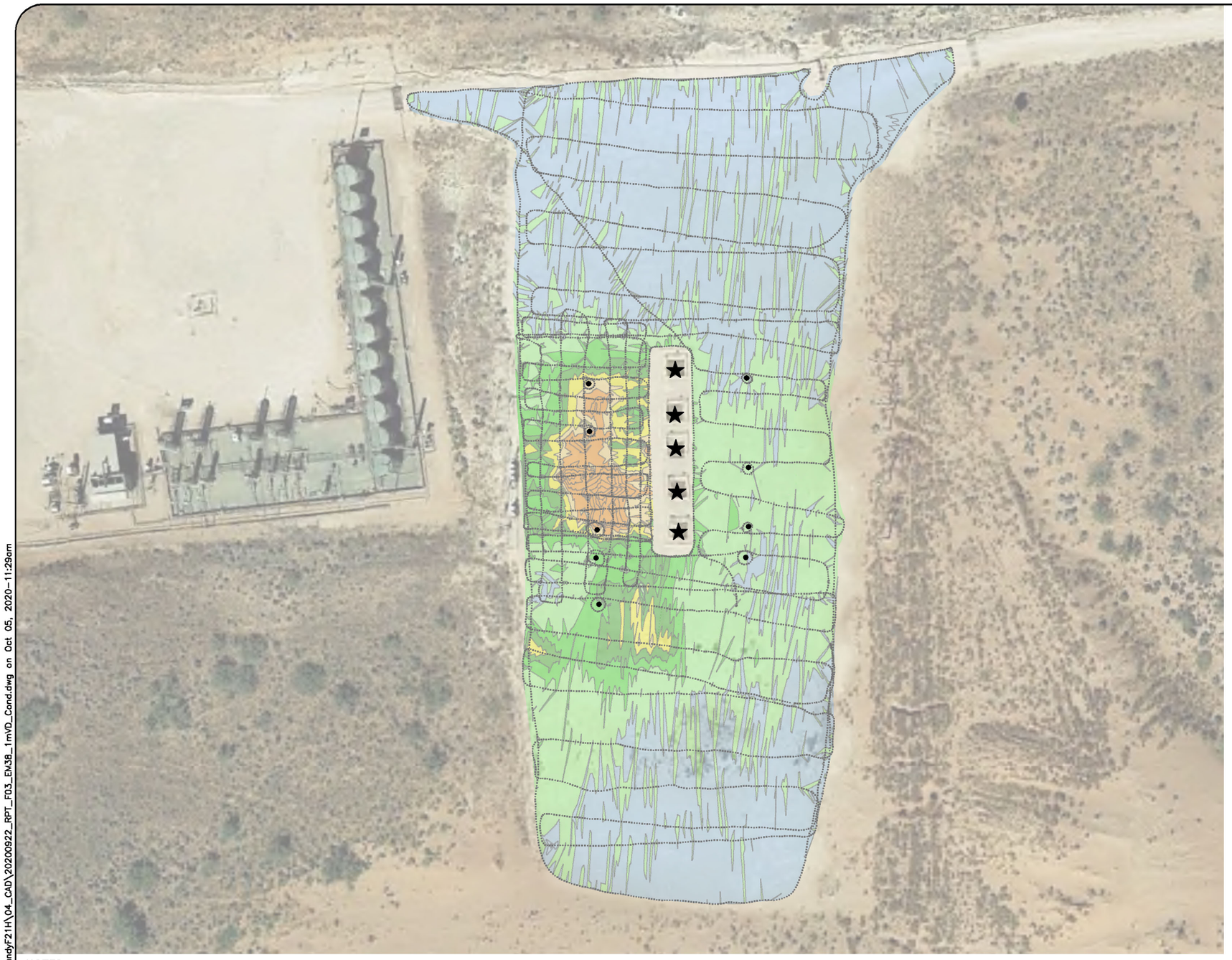

LEGEND

EM38 1.0-METER VERTICAL DIPOLE TERRAIN CONDUCTIVITY SURVEY

LOCATIONS OF EM38-MK2 GROUND CONDUCTIVITY MEASUREMENTS IN mS/m

LOCATION OF WELLHEAD

LOCATION OF WELL DEADMAN

APPARENT TERRAIN CONDUCTIVITIES

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SCALE FEET

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2) AERIAL PHOTOGRAPH DATED NOVEMBER 2, 2017, GOOGLE EARTH IMAGE SERVICES (GEIS), GEOREFERENCED IMAGE

3) APPARENT CONDUCTIVITY IN MILLISIEMENS PER METER (mS/m)

4) MAXIMUM DEPTH OF INVESTIGATION APPROXIMATELY 5 FEET BELOW GROUND SURFACE.

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DOCUMENT TITLE: RESULTS OF EM38 SURVEY

FIGURE TITLE: ***EM38 1.0-METER VD CONDUCTIVITY SURVEY RESULTS***

CLIENT: CIMAREX ENERGY CO.

LOCATION: SANDY FEDERAL 21H WELL PAD
PERMIAN BASIN-HOBBS, EDDY CO., NEW MEXICO

DESIGNED BY	GHR		
APPROVED BY	GHR	SCALE	1"= 80'
DRAWN BY	SKG	DATE	10/5/2020

PROJECT NUMBER	FIGURE NUMBER
XECSANDY:F21H	3

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Attachment B

Sandy Unit 21H Groundwater Levels

USGS Groundwater for NM

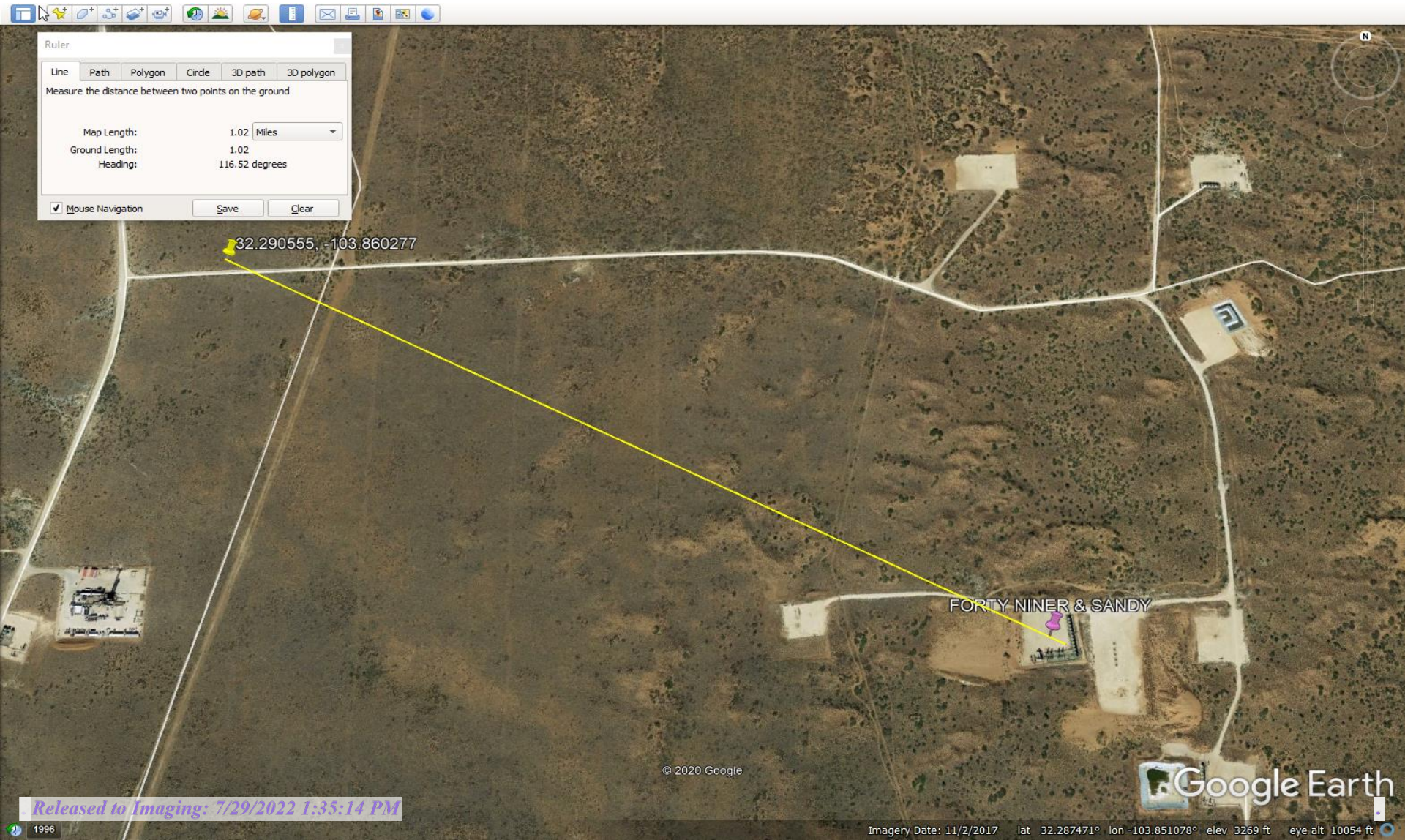
Sec/Twn/Rng	Coordinates	Date	Water Level (bgs)	Distance from area of concern
**22/23S/30E	32.290555, -103.860277	12/14/1976	226’	1.02 miles NW

NM Water Rights Reporting System

Sec/Twn/Rng	Coordinates	Date	Water Level (bgs)	Distance from area of concern
21/23S/30E	32.294939, -103.888656	7/11/2016	105’	2.68 miles NW

** Well used in Google Earth screen shot

USGS Groundwater for NM



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

COMMENTS

Action 10813

COMMENTS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 10813
	Action Type: [C-141] Release Corrective Action (C-141)

COMMENTS

Created By	Comment	Comment Date
jharimon	Closure report approved on 03/26/2021 by Bradford Billings	7/29/2022

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CONDITIONS

Created By	Condition	Condition Date
jharimon	None	7/29/2022