



September 1, 2020

NMOCD District 1
1625 N. French Dr.
Hobbs, NM 88240

Re: Remediation Plan
Apache Corporation
WS MARSHALL B-011
1RP-5456

RXSoil, Inc. is pleased to submit the remediation plan for the on-site remediation of impacted soil for the above release in Lea County, New Mexico.

Sincerely,

Jace Caraway
Chief Operating Officer
RXSoil, Inc.
(940) 210-2051

Zach Robbins
Technical and Engineering Analyst
RXSoil, Inc.
(210) 400-7645

RXSoil, Inc.
201 Main St. Ste. 1360, Fort Worth, TX 76102

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I. Introduction

On behalf of Apache Corporation ("Apache"), RXSoil, Inc. ("RXSoil") has prepared this work plan that describes remediation of the release of crude oil at the W.S. Marshall B-011 battery.

The release was discovered on 4/22/2019 in Unit Letter L, Section 27, Township 21S, Range 37E (see *Figure 1* for Vicinity Map) at approximate coordinates 32.44928, -103.15499. It was reported that 10 barrels of crude oil and 25 barrels of produced water were released, and 8 barrels of crude oil 4 barrels of produced water were recovered during the initial response.

In the fall of 2019, soils on the pad were excavated to NMOCD Table I standards and hauled to an NMOCD approved disposal facility. Soils inside of the battery were excavated by hand shovels to a depth of 6" and hauled to an NMOCD approved disposal facility. Samples were collected and tested above Table I standards but due to the proximity to infrastructure, excavation was stopped. A deferment request was submitted in February 2020 and denied in May.

II. Site Assessment/Characterization

1. **Site Map** – See *Figure 2*
2. **Depth to ground water** – Remediation standards for <50 feet will be used on this remediation project, based on the minimum depth to water of nearby wells (CP 01001 POD1) at 40' BGS (*Appendix*)
3. **Wellhead protection area** – There are no known wellheads in the area.
4. **Distance to nearest significant watercourse** – There is no significant watercourse within a half-mile of any horizontal boundary of the release (see *Figure 3*).
5. **Soil/waste characteristics** – Samples were collected inside of the battery at various depths. The sample locations are shown in *Figure 2* with results summarized in *Appendix A*.

III. Remediation Plan

RXSoil's will utilize an in-situ application of RXBiotics, RXSoil's naturally occurring, non-genetically modified bioremediation agent. This product, along with physical agitation will lead to the degradation of hydrocarbons. RXSoil agrees to significantly reduce hydrocarbon contamination in soils inside of the berm to approximately 24". Efforts will be made to reduce deeper hydrocarbons via boreholes.

Because of the active infrastructure in the area, some soil may not be able accessed due to safety or practicality. Best efforts will be made to remediate all soils without compromising safety.

Samples will be taken using a stainless-steel hand shovel while remediation samples will be taken using a stainless-steel bucket auger. All tools are to be decontaminated before each sample, as specified in *Field Equipment Cleaning and Decontamination* (EPA, 2015). This includes wiping the equipment clean, water-rinsing the equipment, washing the equipment in detergent and water, and rinsing the equipment in water.

RXSoil, Inc.

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Samples will temporarily be transferred to a new plastic bag in the field. Once in a location safer for handling glass, the samples will be transferred to glass jars, supplied by an approved laboratory. The threads on all jars will be wiped clean to allow an air-tight seal. Samples will be transferred on ice to a third-party laboratory to ensure tests are completed within an appropriate timeline

Remediation efforts will commence following the approval of this remediation plan and are estimated to take approximately 90 days. It is estimated that 100 cubic yards will be remediated.

IV. Restoration, Reclamation and Re-Vegetation

Following remediation, RXSoil will ensure the battery has been restored to its initial state.

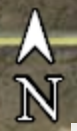
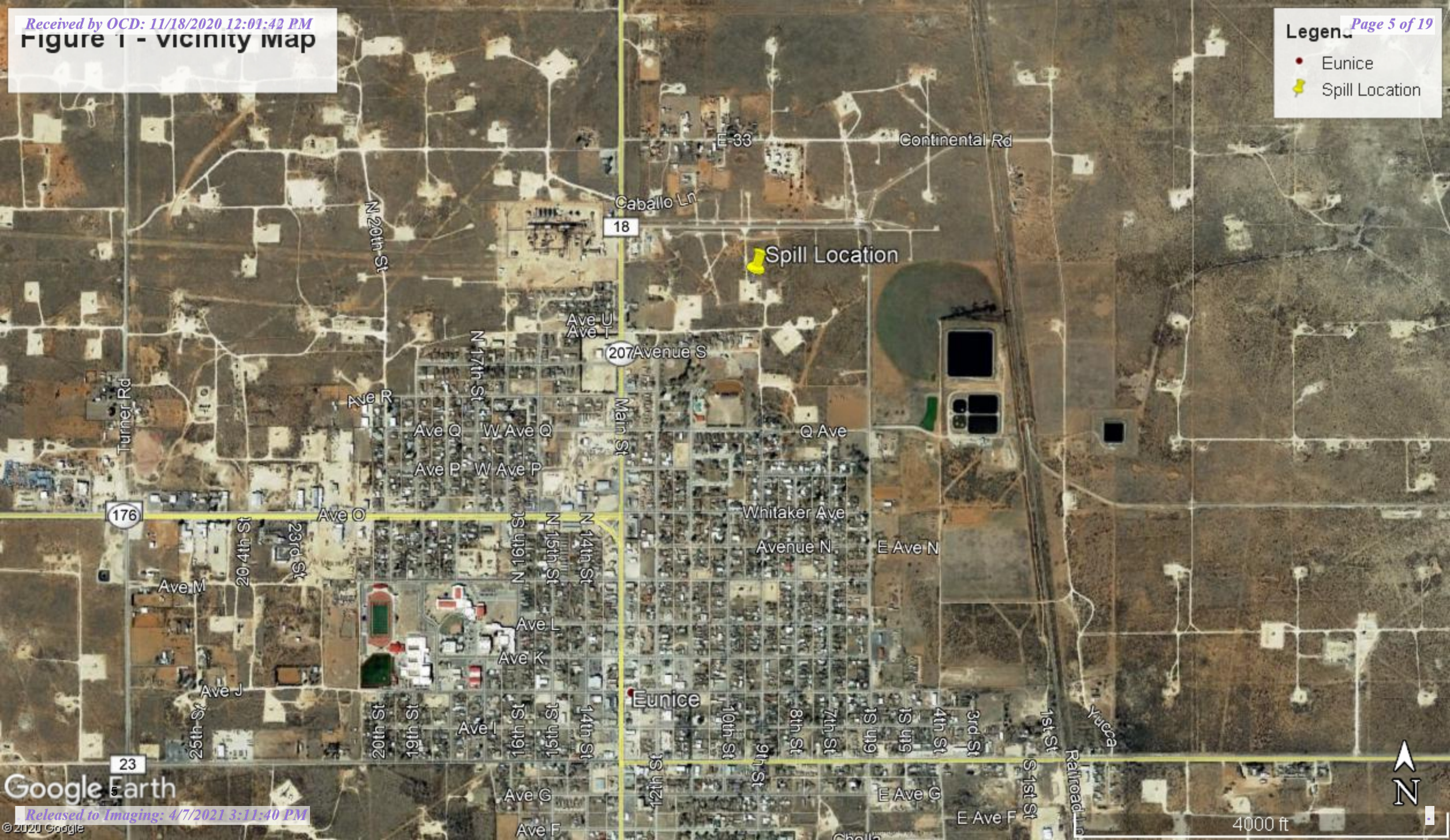
RXSoil, Inc.

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Legend

- Eunice
- 📍 Spill Location



4000 ft

Legend

-  Berm Outline
-  Sample Point Location

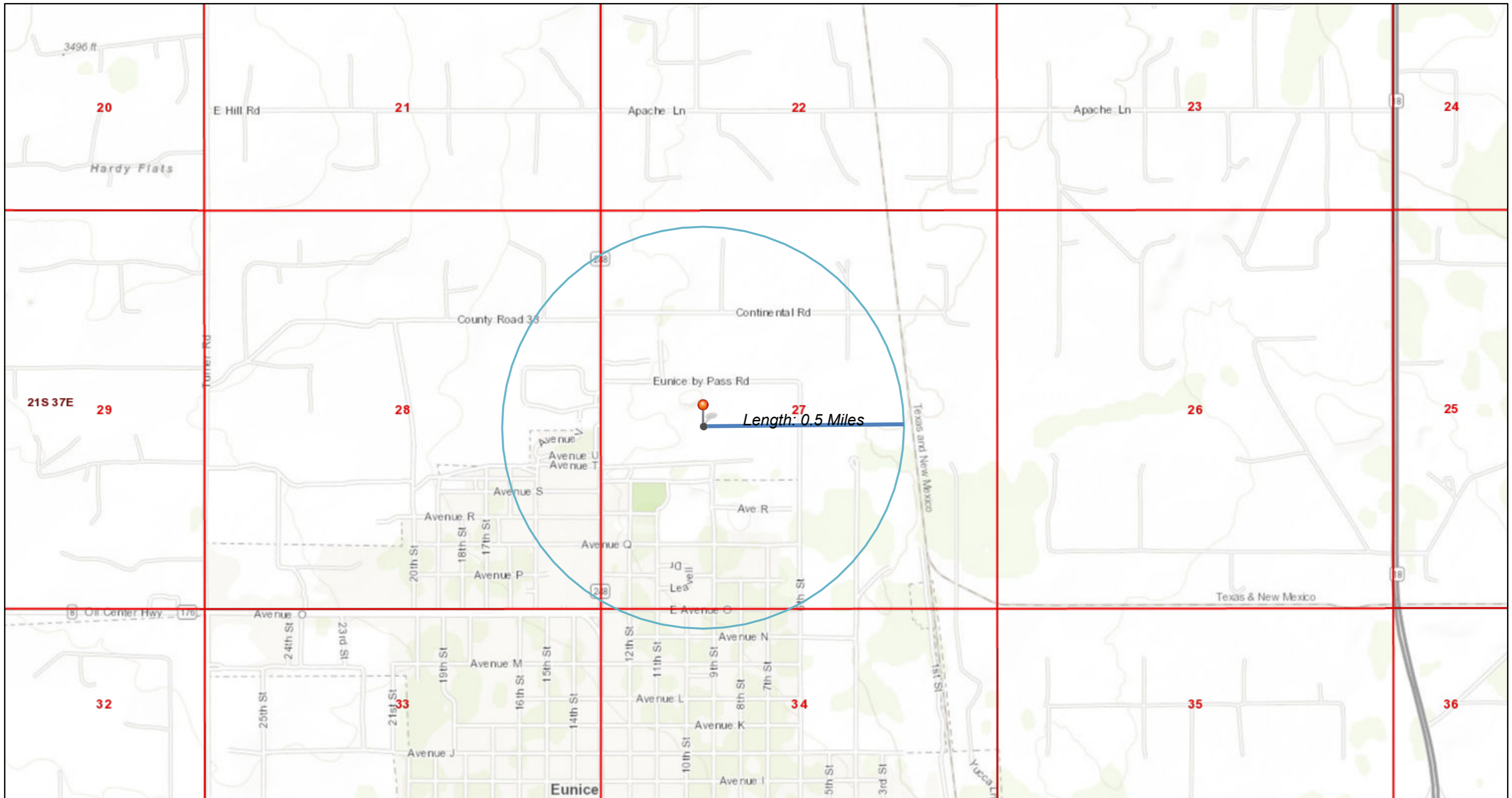
SP2 - 32.449294°, -103.154961°

SP3 - 32.449263°, -103.154947°







60 ft



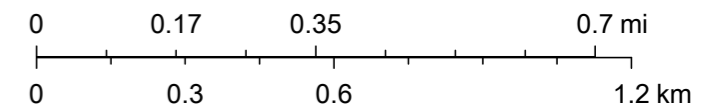
Figure 3 - Hydrology Map



8/31/2020, 5:03:55 PM

-  Override 1
-  Override 1
-  PLSS First Division
-  Override 1
-  OCD District Offices
-  PLSS Townships

1:18,056



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, OCD,

APPENDIX A
DELINEATION SUMMARY TABLE

RXSoil, Inc.
201 Main St. Ste. 1360, Fort Worth, TX 76102

Sample Date	Sample ID	Depth	Chloride	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
6/6/2019	SP2	S	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.449301, -103.154962
6/6/2019	SP2	1'	32	<0.050	<0.050	<0.050	<0.150	<0.300	10.9	352	43.9	
9/11/2019	SP2	3'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
9/11/2019	SP3	S	<16.0	<0.050	0.647	0.132	3.100	3.88	334	26600	7700	32.449301, -103.154953
9/11/2019	SP3	1'	64	0.075	0.207	0.346	1.590	2.22	52	1680	203	
9/11/2019	SP3	3'	608	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
9/11/2019	SP3	6'	368	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	522	113	
9/11/2019	SP3	9'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	

APPENDIX B
NEARBY WELL LISTING

RXSoil, Inc.
201 Main St. Ste. 1360, Fort Worth, TX 76102



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 Code	Sub-basin	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00736		CP	LE	3	1	27	21S	37E		673211	3591997*	340	120	76	44
CP 01096 POD2		CP	LE	2	2	4	28	21S	37E	672976	3591731	454	98	48	50
CP 00293 POD1		CP	LE	2	4	1	27	21S	37E	673711	3592104*	461	80		
CP 00294 POD1		CP	LE	1	3	1	27	21S	37E	673110	3592096*	481			
CP 01095 POD2		CP	LE	2	2	4	28	21S	37E	672876	3591714	555	109	48	61
CP 01096 POD1		CP	LE	2	2	4	28	21S	37E	672861	3591708	571	108	48	60
CP 01095 POD1		CP	LE	2	2	4	28	21S	37E	672859	3591714	572	108	48	60
CP 00735		CP	LE		2	4	28	21S	37E	672816	3591588*	633	105		
CP 00242 POD1		CP	LE	3	4	2	28	21S	37E	672708	3591889*	739			
CP 00285 POD1		CP	LE	3	1	2	27	21S	37E	673906	3592313*	746	80		
CP 00711		CP	LE	4	2	2	28	21S	37E	672900	3592291*	767	100	65	35
CP 01001 POD1		CP	LE	2	3	4	27	21S	37E	674108	3591371	769	72	40	32
CP 00249 POD1		CP	LE	2	3	2	27	21S	37E	674113	3592111*	777	102		
CP 00250 POD1		CP	LE	2	3	2	27	21S	37E	674113	3592111*	777	101		

Average Depth to Water: **53 feet**
 Minimum Depth: **40 feet**
 Maximum Depth: **76 feet**

Record Count: 14

UTMNAD83 Radius Search (in meters):

Easting (X): 673431.43 **Northing (Y):** 3591736.91 **Radius:** 804

*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.

9/1/20 3:10 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

APPENDIX C

C141

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

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

Printed Name: Larry Baker Title: Environmental Tech SR.
 Signature: Larry Baker Date: 11/18/2020
 email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

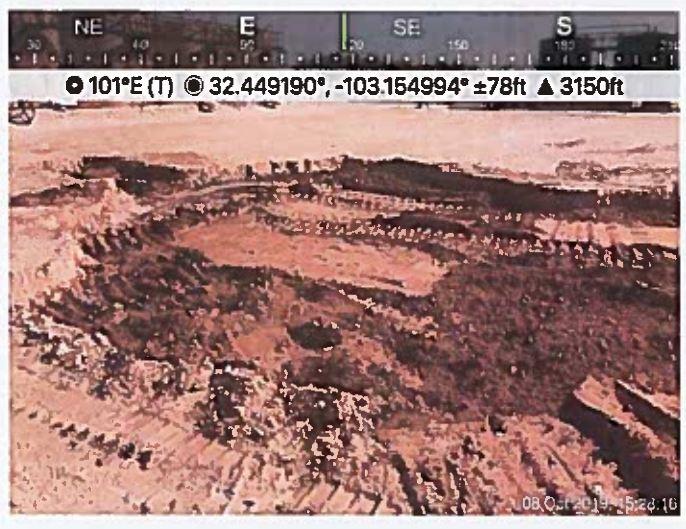
Signature: _____ Date: _____

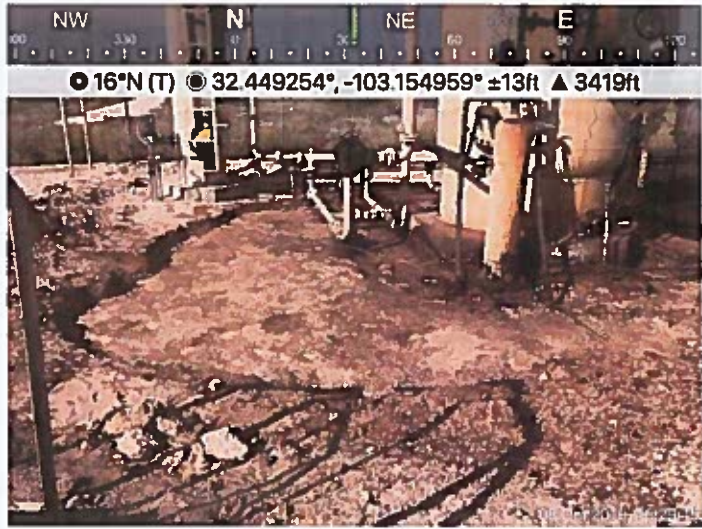
APPENDIX D

PHOTO PAGE

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102





END OF REPORT

RXSoil, Inc.
201 Main St. Ste. 1360, Fort Worth, TX 76102

Incident ID	NDHR1912732011
District RP	
Facility ID	
Application ID	

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Printed Name: Larry Baker Title: Environmental Tech SR.
 Signature: Larry Baker Date: 11/18/2020
 email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: Robert Hamlet Date: 4/7/2021

Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: Robert Hamlet Date: 4/7/2021

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 11249

CONDITIONS OF APPROVAL

Operator: #1000	APACHE CORPORATION Midland, TX79705	303 Veterans Airpark Ln	OGRID: 873	Action Number: 11249	Action Type: C-141
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OCD Reviewer	Condition
rhamlet	The Remediation Plan is approved with the following conditions: Soil sample location B20 must be fully delineated to <50' Table 1 Standards (100 mg/kg TPH). Only sample points that require a major facility deconstruction will be available for deferral. Hydrocarbon contamination inside the berm will need to be significantly reduced for deferral approval. Sampling of 200 ft2 inside the berm will need to be conducted after bioremediation. Resubmit deferral request after accomplished.