Stipulation. Conditions
-Obtain Concurrence from BLM
REVISED based on overlap of site control-
1) Obtain concurrence from the NMSLO

CORRECTIVE ACTION PLAN

MESA VERDE 7 FED 1
MESA VERDE 6 FED 10
PRODUCED WATER
TRANSFER LINE RELEASE

PROJECT REF: NMOCD 1RP 3552

UL-G (SW¼ of the NE¼) SECTION 32 T23S R32E

LATITUDE: 32° 15.670'N LONGITUDE: 103° 41.648'W

~34 MILES WSW (BEARING 247.8°) OF EUNICE

LEA COUNTY, NEW MEXICO

April 10, 2015

PREPARED FOR DEVON ENERGY CORPORATION BY:

ALFREDO'S TRUCKING
Backhoe Services Inc.

3220 West County Rd, Hobbs, NM 88240

(575) 942-2330; Fax (505) 393-6374; Email sreyna@alfredotrk.com

Table of Contents

1.0 Introduction and Background

This Delineation Plan addresses the produced water and the minor associated crude oil component released from a surface poly produced water transfer flow line. The C-141 report submitted by Devon Energy Corp. (Company) to the NM Oil Conservation Division (NMOCD) indicates a release date of 02/18/2015. The release volume was estimated to be 20-bbl, with no recovery.

The release is located on State of NM land in Unit Letter G, (SW¼ of the NE¼), Section 32, T23S, R32E. The GPS coordinates at the Point of Release (POR) are: 32° 15.670'N; 103°41.648'W.

2.0 Site Description

2.1 Geological Description

The release site is located in the Mescalero Plain physiographic region of SE New Mexico. It is specifically located in the "Bootleg Ridge" area (pg 8).

The Mescalero Plain is a broad area of low relief between the Pecos River valley on the west and the Llano Estacado on the east. An eolian sand sheet called the Mescalero sands characterizes the surficial geology of the region. The sand sheet is partly stabilized by shinnery oak cover that promotes the formation of parabolic dunes where the sand is thick. At the thin margins of the sand sheet, mesquite coppice dunes have formed. The areas with coppice dunes tend to be eroded. Surficial deposits in this area also include patches of Holocene to Pleistocene eolian sand (Qe), isolated outcrops of recent alluvium (Qa, Holocene), older alluvium (Qoa, Pleistocene), and red beds of the Chinle (TRcu, Triassic) and Artesia (Pat, Permian) Groups. *("Development of Southeastern New Mexico Regional Research Design and Cultural Resource Management Strategy*", Patrick F. Hogan, UNM Report No. 185-849, November 22, 2006)

2.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Querqus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses, flowering annuals and flowering perennials. Mammals represented, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, Amphibians, and Birds are numerous and typical of area.

Prior to the commencement of excavation work at the remediation site, it will be determined if Mr. Matt Mathis, CEHMM, needs to be contacted regarding a survey of the area with resultant operational recommendations due to the presence, or potential presence, of the Lesser Prairie Chicken (*Tympanuchus pallidicinctus*) and/or Sand Dune Lizard (*Sceloporus arenicolus*). It will also be determined if an Archaeological Survey of the area will be necessary. These determinations will be based on State Land Office requirements or recommendations. An amended CAP will be submitted to include any input from CEHMM, or from an archaeological survey of the area.

2.3 Area Ground Water

Based on the Chevron Water Table Contour Map for Lea County (pg 12), the vadose zone depth at this release location is estimated to be 400-425-ft (bgs).

2.4 Area Water Wells

There are no recorded or observed water wells within 1000 horizontal feet of the site.

2.5 Area Surface Water Features

No surface water bodies exist within 1000 horizontal feet of the site.

3.0 Contaminant and Size of Area

The primary contaminant is produced water with a thin, inconsistent film of associated crude oil. The release affected area proceeds south from the point of release (POR) ~120-ft, then southwest ~70-ft (following the curve of the lease road), then 75-ft northwest into the pasture area. The contaminated area is estimated to be 1500-ft^2.

The produced water and crude oil associated with this release are considered RCRA Exempt oilfield waste. No evidence of other contaminants is observed.

4.0 Vertical Extent of Contamination

The vertical and lateral contamination extent (chlorides) beneath the flow line release area will be determined during of the performance of the Delineation Work Plan (pg. 5). The contaminated soil excavated from any sample trenches will be stockpiled on an undisturbed, wide area of the flow path. This material will be disposed of during the remediation phase of the project.

5.0 NMOCD Site Ranking Table

1. Ground Water	2. Wellhead Protection	3. Distance to Surface Water
Depth to GW <50 feet: 20 points	If <1000' from water source, or; <200' from private domestic water source: 20 points	<200 horizontal feet: 20 points
Depth to GW 50 to 99 feet: 10 points		200-1000 horizontal feet: 10 points
Depth to GW >100 feet: 0 points	If >1000' from water source, or; >200' from private domestic water source: 0 points	>1000 horizontal feet: 0 points
Ground Water Score = 0	Wellhead Protection Score= 0	Surface Water Score= 0
Site Rank (1+2+3) = 0 + 0 + 0 =0 points		
Total Site Ranking Score and Acceptable Remedial Goal Concentrations		
Parameter	20+	10	0
Benzene	10 ppm	10 ppm	10 ppm
BTEX	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm

Contaminant delineation and remedial work to be done at this site will be performed such that the chemical parameters of the soil and the physical parameters of the ground water will be characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the NMOCD publication:

- *Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)*

Acceptable thresholds for contaminants/constituents of concern (CoCs), i.e., TPH^{8015m}, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylenes ($BTEX^{8260}$), will be determined based on the NMOCD Ranking Criteria as follows:

- *Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.*
- *Wellhead Protection Area, i.e., distance from fresh water supply wells.*
- *Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.*

Based on the proximity of the site to area water wells, surface water bodies, and estimated depth to ground water from the lower-most contamination (400-ft), the NMOCD ranking score for the site is 0 points with the soil remedial goals highlighted in the Site Ranking Table (pg 4).

The petroleum component in the produced water released in this incident is minimal and appears as a thin film at the surface of the flow path in only a few locations.

6.0 Delineation Work Plan

Five 3-ft depth sample trenches will be excavated within the release flow path, especially where pooling should have occurred. The pooling areas are obvious near the westerly curve of the flow path and at the terminus of the flow path (pg 10). These sample excavations will be tested for chlorides at 1-foot intervals. These sample trenches will be extended deeper than 3-ft bgs if 250-ppm Cl^- has not been achieved at that level.

The contaminated soil excavated from all sample trenches will be stockpiled on an undisturbed, wide area of the flow path. This material will be disposed of during the remediation phase of this project. Entrance to open trenches by animals will be prevented by the installation of safety fencing around the trenches. In addition, safety cones will be placed along the road edge adjacent to the flow path area for the duration of the project.

The depth of remedial excavation will be determined after the soil profile down to 250-ppm Cl^- level has been identified in the delineation trenches.

7.0 Remediation Work Plan

The contaminated soil within the release affected area will be excavated to the 250-ppm level. Due to the shallow depth of chloride contamination, the proximity to the lease road, and the slope of the first half of the flow path, a “risk assumption” closure utilizing a protective liner is not appropriate for this remediation project. In the event that contaminant depth significantly exceeds preliminary expectations, Devon Energy will appreciate the opportunity to consult with NMOCD as regards the possibility of a “risk assumption” closure.

During the excavation phase of this project, representative bottom and side soil samples will be taken and field analyzed for Cl^- ion concentration at appropriate intervals. All excavated soil

indicating Cl^- concentration(s) greater than 250-ppm will be disposed of at a NMOCD approved land farm licensed to receive soils with Cl^- concentrations above 1000-ppm.

Backfill of the excavation will be accomplished by replacement of disposed soils with offsite purchased materials (caliche and topsoil). A minimum of 3-ft of clean top soil will be the final top layer of the site. The excavated area, and any damaged pasture area, will be re-seeded with a SLO approved seed blend.

The excavation of the contaminated flow path will be accomplished by using a track hoe. The use of a track hoe will enable the transport trucks to be loaded directly from the excavation by the same piece of equipment, thus eliminating the need to stockpile contaminated soil on the caliche road surface for loading by a back hoe or front-end loader. The loading zone for transport trucks will cordoned off from the road traffic with safety cones. Transport trucks returning to the site with clean backfill material will be unloaded directly into the excavation. If this off-loading method proves to be unsafe, the alternate method of unloading of clean material on the cordoned caliche road surface will be utilized.

The release affected area is entirely on State of NM land. A Right-of-Entry permit will be obtained from the State Land Office to allow excavation equipment to accomplish the remediation of this release site. The excavation site will be fenced off (orange safety fence) on the pasture side of the site. The safety cones on the caliche road will remain in place throughout the duration of this project To further enhance the safety factor during darkness, two flashing amber warning lights will be placed within the safety cone area, one for each of the adjoining lease road approaches. All OSHA regulations regarding excavation and heavy equipment safety will be adhered to throughout the duration of this project, including, but not limited to: certified “Competent Person” presence, sloping or benching requirements, and qualified “spotters” for heavy equipment and transport operations.

Final certified soil analyses for Closure will be conducted by Cardinal Laboratories, Hobbs, NM. All samples will be transported under proper Chain of Custody protocols.

RECEIVED
By OCD; Dr. Oberding at 2:42 pm, Mar 03, 2015

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

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Devon Energy Production	**Contact** Daniel Suniga
Address 6488 Seven Rivers Hwy Artesia, NM 88220	**Telephone No.** 575-390-5850
Facility Name Mesa Verde 7 Fed 1, 6 Fed 10	**Facility Type** Oil

Surface Owner Federal Federal	**Mineral Owner** Federal Federal	**API No.** 30-025-32398 and 30-025-32751

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	7	24S	32E	660	North	1980	East	Lea
D	6	24S	32E	430	North	330	West	Lea

Latitude: N 32.261 **Longitude:** W -103.694

NATURE OF RELEASE

Type of Release Spill Produced Water	**Volume of Release** 20 bbls	**Volume Recovered** 0 bbls
Source of Release Poly Flow Line	**Date and Hour of Occurrence**	**Date and Hour of Discovery**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Jim Amos BLM Thomas Obering OCD	
By Whom? David Simmons	**Date and Hour** 2/17/2015 @ 10:50 pm and 10:52 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse**	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A 3" poly line that runs next to the road was damaged when an unknown vehicle struck it resulting in a 20 bbl release of produced water. Power to each one of the water transfer pumps at the Mesa Verde 7 Fed 1 and Mesa Verde 6 Fed 10 was shut off to prevent any more pressure or flow building on the line.

Describe Area Affected and Cleanup Action Taken.*

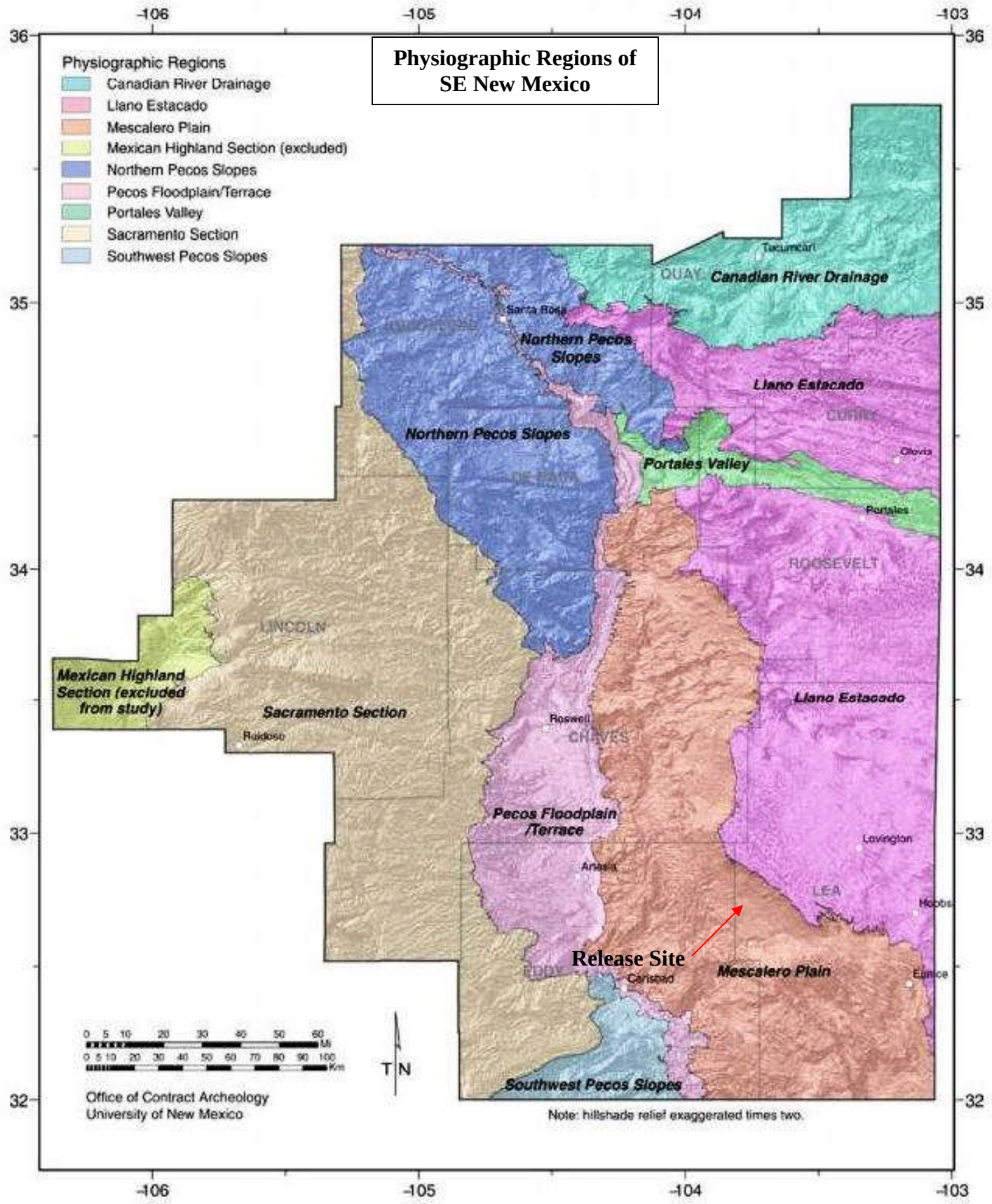
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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.

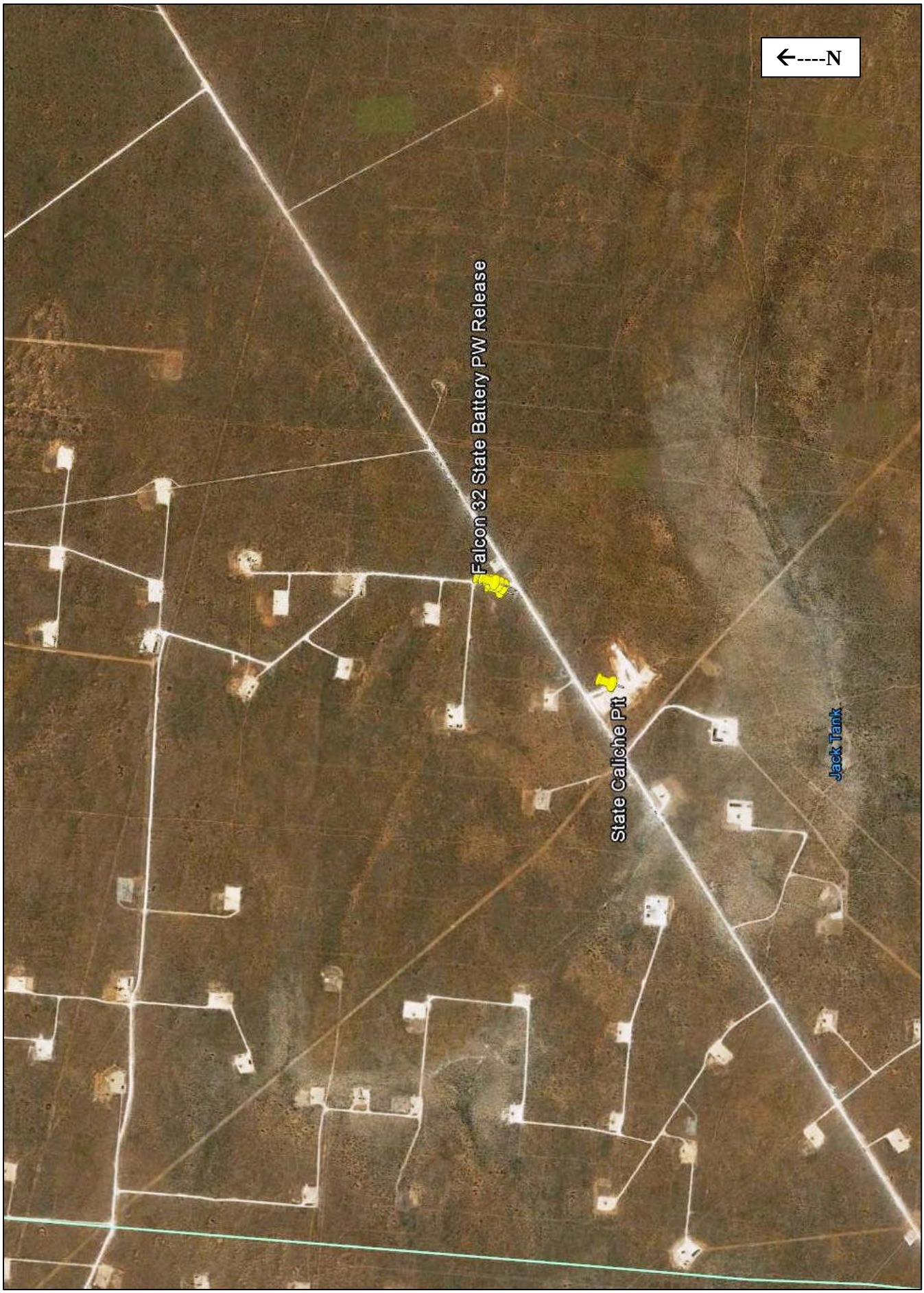
Signature: *Corina Moya*	OIL CONSERVATION DIVISION	
Printed Name: **Corina Moya**	Approved by ~~Environmental Specialist~~	
Title: **Field Admin Support**	Approval Date: 03/03/2015	Expiration Date: 05/03/2015
E-mail Address: **corina.moya@dvn.com**	Conditions of Approval: Site samples required. Delineate and remediate are as per NMOCD guides.	Attached ☐
Date: 2/19/2015 Phone: **575.746.5559**		1RP-3552 6137

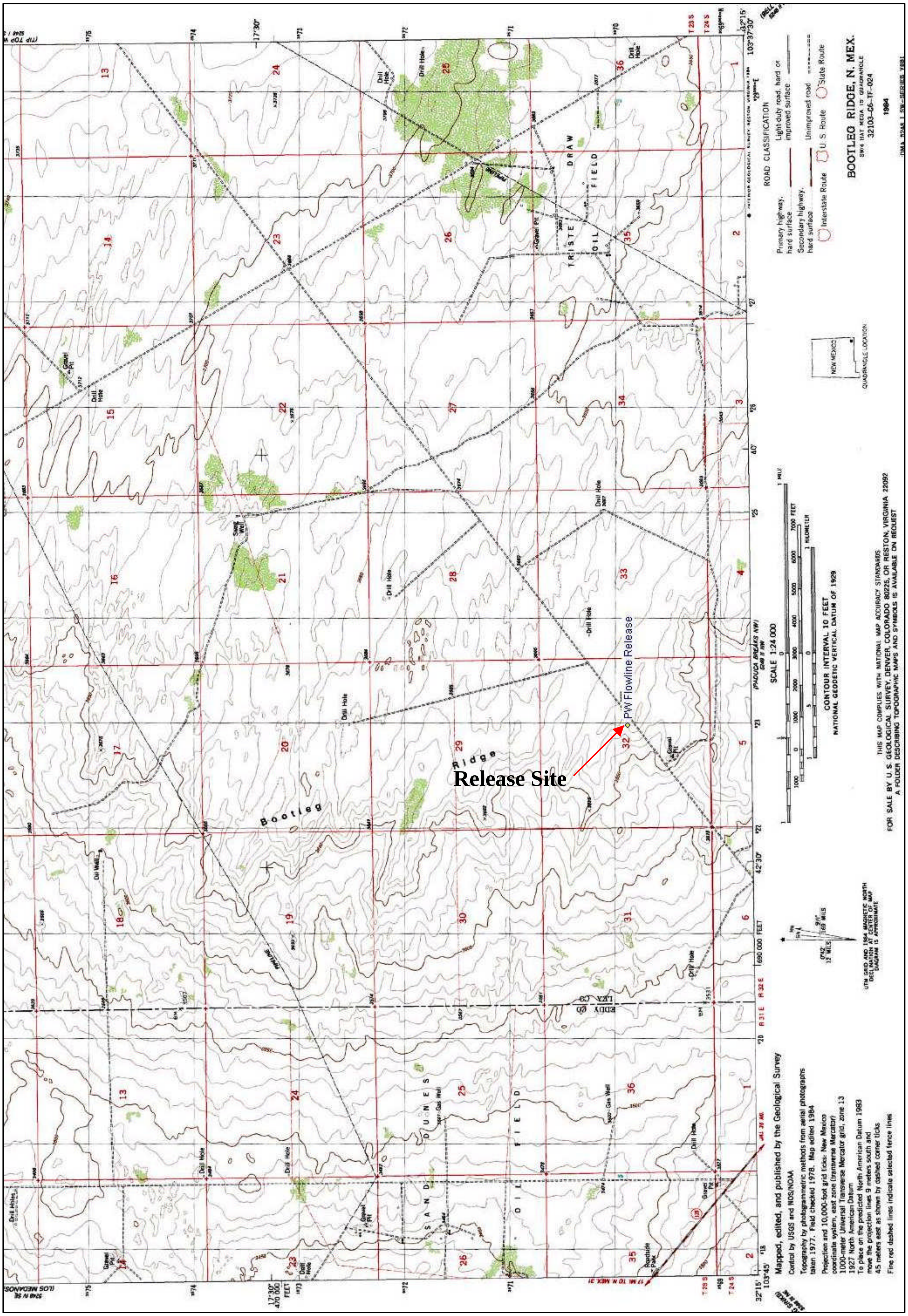
* Attach Additional Sheets If Necessary

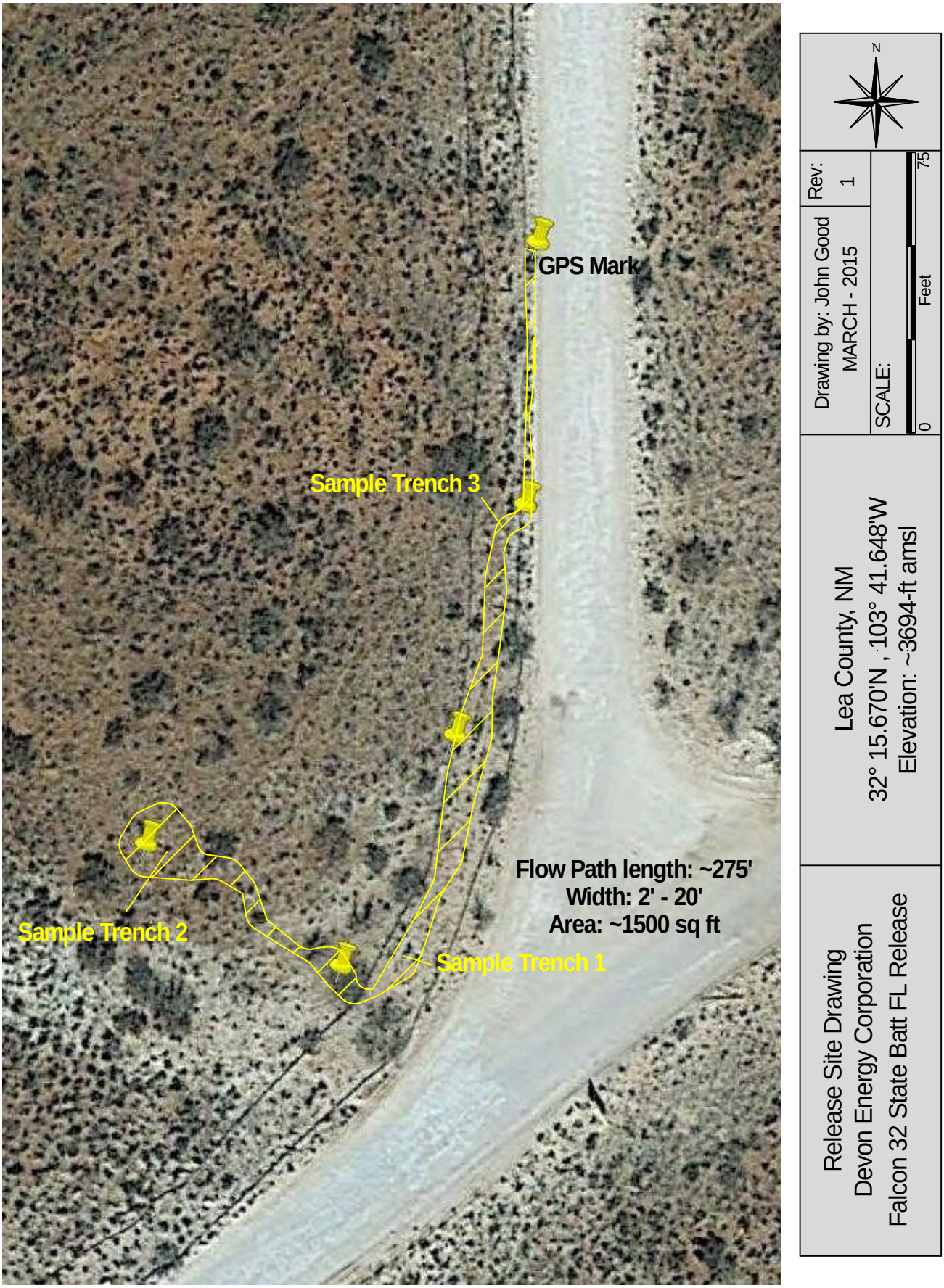
nTO1506253131

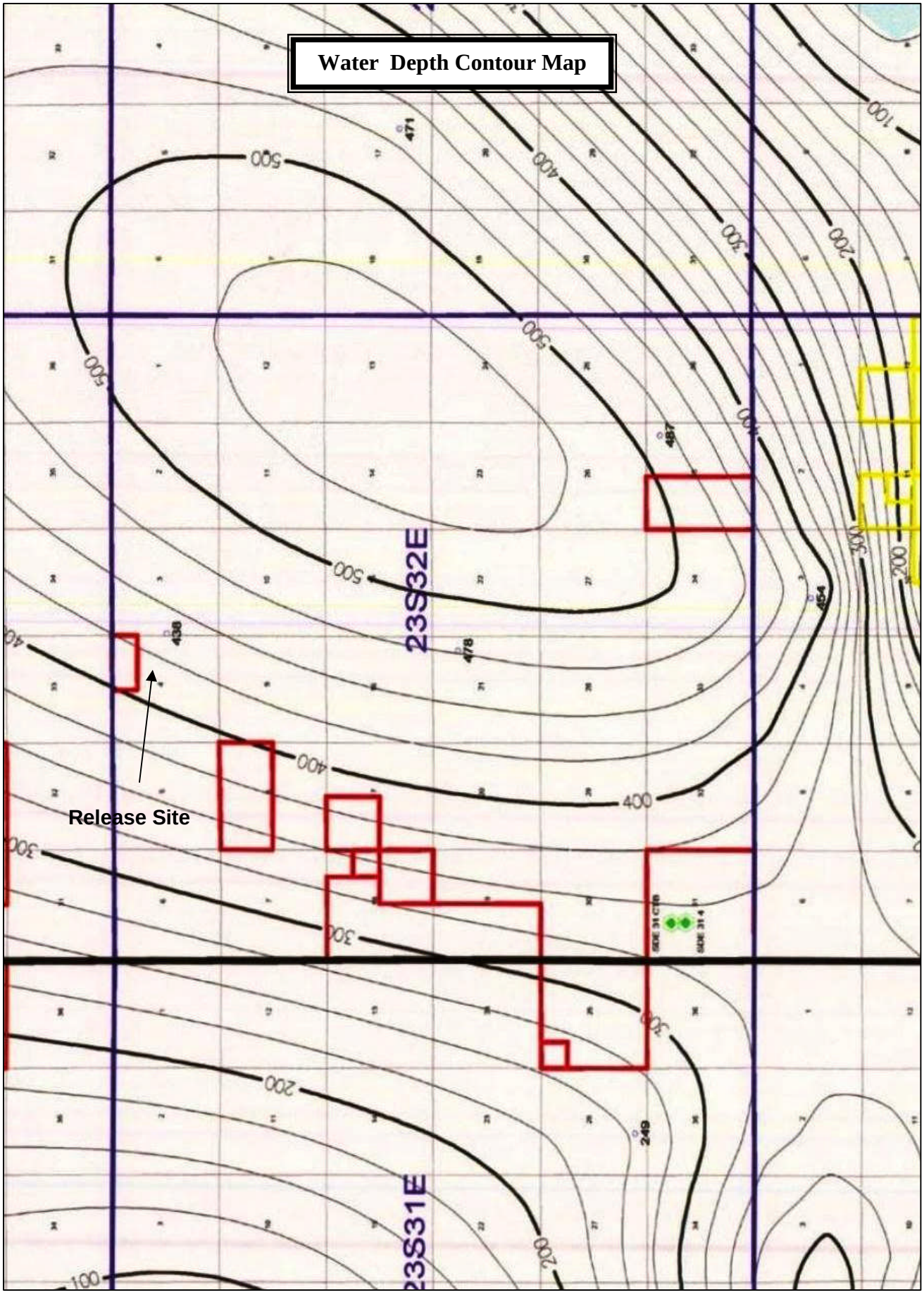
pTO1506253292


Physiographic Regions of SE New Mexico
Physiographic Regions
Canadian River Drainage
Llano Estacado
Mescalero Plain
Mexican Highland Section (excluded)
Northern Pecos Slopes
Pecos Floodplain/Terrace
Portales Valley
Sacramento Section
Southwest Pecos Slopes
-106
-105
-104
-103
36
35
34
33
32
Tucumcari
QUAY
Canadian River Drainage
Santa Rosa
Northern Pecos Slopes
Llano Estacado
CURRY
Clovis
Portales
ROOSEVELT
LINCOLN
Mexican Highland Section (excluded from study)
Sacramento Section
Ruidoso
Roswell
CHAVES
Pecos Floodplain /Terrace
Artesia
Lovington
LEA
Hobbs
Release Site
EDDY
Carlsbad
Mescalero Plain
Eunice
Southwest Pecos Slopes
0 5 10 20 30 40 50 60 Mi
0 5 10 20 30 40 50 60 70 80 90 100 Km
T N
Office of Contract Archeology
University of New Mexico
Note: hillshade relief exaggerated times two.


←----N
Falcon 32 State Battery PW Release
State Caliche Pit
Jack Tank


Release Site
PW Flowline Release
BOOTLEG RIDGE, N. MEX.
Mapped, edited, and published by the Geological Survey
ROAD CLASSIFICATION
SCALE 1:24 000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929


GPS Mark
Sample Trench 3
Sample Trench 2
Sample Trench 1
Flow Path length: ~275'
Width: 2' - 20'
Area: ~1500 sq ft
N
Rev: 1
Drawing by: John Good
MARCH - 2015
SCALE:
0
75
Feet
Lea County, NM
32° 15.670'N , 103° 41.648'W
Elevation: ~3694-ft amsl
Release Site Drawing
Devon Energy Corporation
Falcon 32 State Batt FL Release


Water Depth Contour Map
Release Site
23S32E
23S31E
500
400
300
200
100