

5/11/2015 DATE IN	SUSPENSE	PRG ENGINEER	5/12/2015 LOGGED IN	PMX TYPE	PWAM15325/266 APP NO.
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ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
**- Engineering Bureau -**  
 1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

**[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]**  
**[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]**  
**[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]**  
**[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]**  
**[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]**  
**[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]**

**[1] TYPE OF APPLICATION - Check Those Which Apply for [A]**

**[A] Location - Spacing Unit - Simultaneous Dedication**  
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

**[B] Commingling - Storage - Measurement**  
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

**[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery**  
☐ WFX ☒ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

**[D] Other: Specify \_\_\_\_\_**

*(Handwritten)*  
 - PMX  
 - Apache Corp  
 873

Empire Abo Unit 5  
 30-015-00839

*(Handwritten)*  
 Pool  
 - Empire Abo  
 22040

**[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply**

- [A] ☒ Working, Royalty or Overriding Royalty Interest Owners**
- [B] ☒ Offset Operators, Leaseholders or Surface Owner**
- [C] ☒ Application is One Which Requires Published Legal Notice**
- [D] ☒ Notification and/or Concurrent Approval by BLM or SLO**  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,**
- [F] ☐ Waivers are Attached**

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**[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

**[4] CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Brian Wood

Print or Type Name

Signature

*(Handwritten Signature)*

Consultant

Title

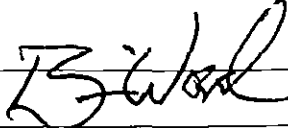
brian@permitswest.com

e-mail Address

5-11-15

Date

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: Secondary Recovery XXX Pressure Maintenance Disposal Storage  
Application qualifies for administrative approval? Yes No
- II. OPERATOR: APACHE CORPORATION  
ADDRESS: 303 VETERANS AIR PARK LANE, SUITE 3000, MIDLAND, TX 79705  
CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? XXX Yes No R-4549 et al  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including: Empire Abo Unit 5  
30-015-00839
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: BRIAN WOOD  TITLE: CONSULTANT  
SIGNATURE: \_\_\_\_\_ DATE: MAY 9, 2015  
E-MAIL ADDRESS: brian@permitswest.com
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

### III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

### XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

**NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.**

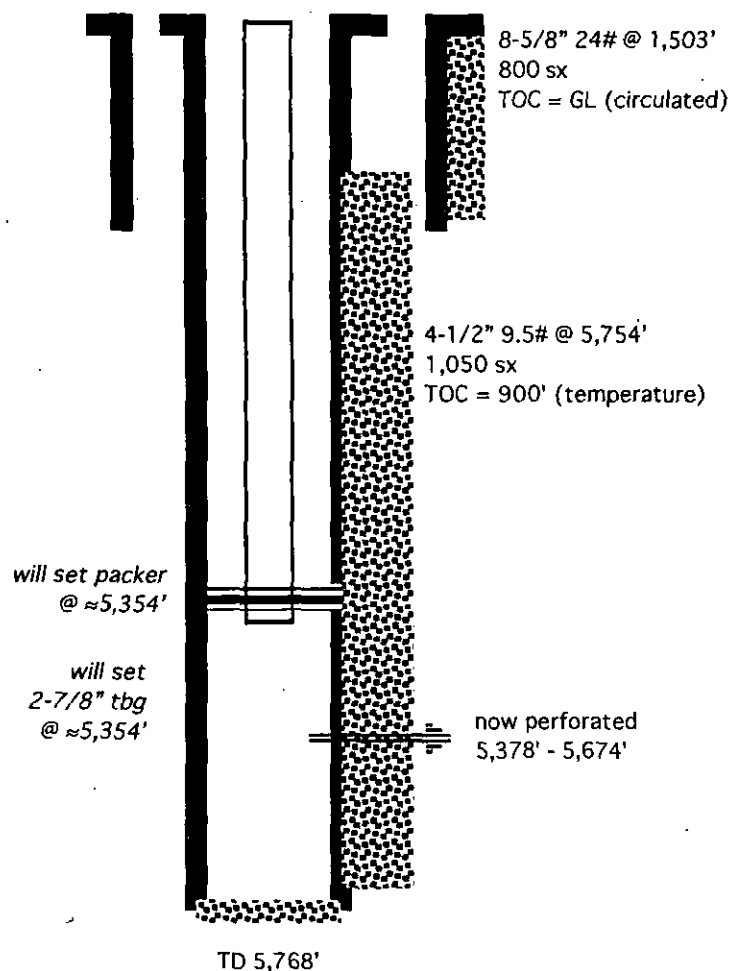
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**NOTICE:** Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

## INJECTION WELL DATA SHEET

OPERATOR: APACHE CORPORATIONWELL NAME & NUMBER: EMPIRE ABO UNIT 5

WELL LOCATION: <u>330 FSL &amp; 990 FWL</u>	<u>M</u>	<u>9</u>	<u>18 S</u>	<u>27 E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

(not to scale)

WELL CONSTRUCTION DATASurface Casing

Hole Size: 11" Casing Size: 8-5/8"

Cemented with: 800 sx. or                      ft<sup>3</sup>

Top of Cement: SURFACE Method Determined: CIRCULATED

Intermediate Casing

Hole Size:                      Casing Size:                     

Cemented with:                      sx. or                      ft<sup>3</sup>

Top of Cement:                      Method Determined:                     

Production Casing

Hole Size: 7-7/8" Casing Size: 4-1/2"

Cemented with: 1,050 sx. or                      ft<sup>3</sup>

Top of Cement: 900' Method Determined: TEMP. SURVEY

Total Depth: 5,768'

Injection Interval5,378' feet to 5,674'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEETTubing Size: 2-7/8" Lining Material: TUBOSCOPE TK FIBERType of Packer: ARROW AS-1XPacker Setting Depth: ≈5,354'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection? \_\_\_\_\_ Yes
- XXX
- No

If no, for what purpose was the well originally drilled? OIL WELL

2. Name of the Injection Formation:
- ABO

3. Name of Field or Pool (if applicable):
- EMPIRE; ABO (22040)

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.
- ONLY PERFORATED IN ABO

5,378' - 5,674'

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_

OVER: YESO (3100'), GLORIETA (2965'), SAN ANDRES (1512'),GRAYBURG (925'), QUEEN (620')UNDER: MORROW (9400')

APACHE CORPORATION  
EMPIRE ABO UNIT 5  
330' FSL & 990' FWL SEC. 9, T. 18 S., R. 27 E.  
EDDY COUNTY, NEW MEXICO

PAGE 1

30-015-00839

I. Goal is to convert a 5,768' (TD) Empire; Abo oil well to a water injection well from 5,378' to 5,674'. It operated as a gas injection well in 1994-1995. It is in the Empire; Abo Pool (22040). It would be the 25th injection well approved in the unit. Previous injection rules or orders are R-4549, PMX-55, PMX-58, PMX-61, PMX-62, PMX-65, PMX-73, PMX-116, PMX-188, PMX-269, PMX-270, and PMX-272.

II. Operator: Apache Corporation (OGRID #873)  
Operator phone number: (432) 818-2009  
Operator address: 303 Veterans Air Park Lane, Suite 3000  
Midland, TX 79705  
Contact for Application: Brian Wood (Permits West, Inc.)  
Phone: (505) 466-8120

III. A. (1) Lease: BLM lease NMLC-070938  
Lease: SW4 Section 9, T. 18 S., R. 27 E.  
Lease Size: 160 acres (see Exhibit A for C-102 and maps)  
Closest Lease Line: 330'  
Unit Size: 11,339.15 acres  
Unit Number: 300117 (BLM: NMNM-070945X)  
Closest Unit Line: 2,310'

A. (2) Surface casing (8-5/8", 24#, K-55) is set at 1,503'. Casing was cemented to the surface with 800 sacks.

Production casing (4-1/2", 9.5#, J-55) is set at 5,754'. Casing was cemented to 900' (temperature survey) with 1,050 sacks. PBTD = 5,740'

A. (3) Tubing will be 2-7/8" with turned down couplings coated with Tuboscope® TK fiber line. Setting depth will be ≈5,354'. (Highest perforation is at 5,378'.)

- A. (4) An Arrow AS-1X packer will be set at  $\approx 5,354'$  (24' above the highest perforation of 5,378').
- B. (1) Injection zone will be the Abo, which is part of the Empire; Abo Pool (NMOCD pool code number 22040).
- B. (2) Injection interval will be 5,378' to 5,668'. The entire well bore is cased.
- B. (3) Well was drilled in 1960 as an Empire; Abo oil well. Production in the first 2 months of 2015 averaged 3 bopd, 13 Mcfd, and 10 bwpd. The well has cumulatively produced >263,825 barrels of oil and >1,171,386 Mcf of gas.
- B. (4) Injection interval will be perforated with 2-4 shots per foot. Existing open perforations (all Abo) are 5,378' - 5,674'.
- B. (5) Higher and lower potential oil or gas zones in the area of review are:
  - Queen
  - Grayburg
  - San Andres
  - Glorieta
  - Yeso
  - Abo
  - Morrow

IV. This is within the previously authorized injection project area. There are 4 other active Abo water injection wells currently in the unit. Cumulative injection through February 28, 2015 in those wells is 39,414,490 barrels. Converting this oil well to an injection well will improve unit economics and positively affect existing production within the Empire Abo Unit.

**APACHE CORPORATION**

**PAGE 3**

**EMPIRE ABO UNIT 5**

**330' FSL & 990' FWL SEC. 9, T. 18 S., R. 27 E.**

**EDDY COUNTY, NEW MEXICO**

**30-015-00839**

V. Exhibit B shows 22 existing wells (12 plugged & abandoned + 10 active oil wells) within a half-mile radius. Eight of the P&A wells penetrated the Abo. Exhibit C shows 383 existing wells (235 producing oil or gas + 123 plugged & abandoned + 20 water injectors or disposals + 5 water wells) within a two-mile radius.

Exhibit D shows all leases and lessors (only State and BLM) within a half-mile. Exhibit E shows all leases and lessors (only private, State, and BLM) within a two-mile radius. Details on the leases within a half-mile are:

Aliquot Parts in Area of Review (T 18 S, R 27 E)	Lessor	Lease	Lessee(s) of Record	Abo operator, if any	in unit
SENE Sec. 8	BLM	NMNM-029268	Occidental	*	yes
SESE Sec. 8		NMNM-029273	Occidental	Apache	yes
NESE Sec. 8		NMNM-029275	Occidental	Apache	yes
NWSE Sec. 8		NMNM-089156	Lime Rock		no
SWSE Sec. 8		NMLC-070678A	Occidental		no
SWSE Sec. 9		NMLC-065478B	Apache	*	yes
SESW Sec. 9		NMLC-070938	Apache	*	yes
NESW Sec. 9		NMLC-070938	Apache	Apache	yes
W2SW4 Sec. 9		NMLC-070938	Apache	Apache	yes
NWSE Sec. 9		NMLC-025604	Apache	Apache	yes
SWNW Sec. 9		NMNM-031186	ExxonMobil	Apache	
SENW Sec. 9		NMNM-031186	ExxonMobil	*	yes
W2NE4 Sec. 16	NMSLO	B0-9603-0025	ExxonMobil	Apache	yes
NENW Sec. 16		E0-3635-0000	Chevron	Apache	yes
NWNW Sec. 16		X0-2029-0080	ExxonMobil	*	yes
SWNW Sec. 16		E0-1049-0000	ConocoPhillips	Apache	yes
SENW Sec. 16		B1-0456-0007	Apache	*	yes
E2NE4 Sec. 17	BLM	NMNM-029276	ExxonMobil	*	yes
NWNE Sec. 17		NMNM-029276	ExxonMobil		no
				*Apache will be operator if Abo well drilled	



**APACHE CORPORATION**

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**EMPIRE ABO UNIT 5**

**330' FSL & 990' FWL SEC. 9, T. 18 S., R. 27 E.**

**EDDY COUNTY, NEW MEXICO**

**30-015-00839**

VI. Thirteen of the 22 existing wells that are within a half-mile penetrated the Abo. All of the 13 penetrators are Abo wells. Six of the Abo penetrators are plugged and abandoned. A table abstracting construction details and history of all 22 penetrators and diagrams of the 6 plugged penetrators are in Exhibit G.

The 22 existing wells that are within a half-mile (regardless of depth) are:

API	WHO	UL	T18S, R27E, SECTION	TVD	WELL	TYPE WELL	ZONE(S)	FEET FROM EAU-5
3001500901	Apache	D	16	5780	Empire Abo Unit 005C	P&A	Empire; Abo	990
3001500837	BP	N	9	5790	Empire Abo Unit 006B	P&A	Empire; Abo	1050
3001500841	Apache	L	9	5700	Empire Abo Unit 005B	O	Empire; Abo	1320
3001500824	Apache	P	8	5591	Empire Abo Unit 004A	O	Empire; Abo	1364
3001500900	Apache	C	16	5681	Empire Abo Unit 006D	O	Empire; Abo	1393
3001529057	Lime Rock	P	8	2400	Hawk 8 P Federal 012	O	Red Lake; Queen- Grayburg- SA	1427
3001533548	FDW	L	9	3398	CC Federal 003	P&A	NE Red Lake; Glorieta- Yeso	1558
3001500915	Humble	I	17	5576	Chalk Bluff Draw Unit A 12	P&A	Empire; Abo	1620
3001500825	Apache	I	8	5576	Empire Abo Unit 004B	O	Empire; Abo	1864
3001500835	Apache	K	9	5717	Empire Abo Unit 006A	O	Empire; Abo	1933
3001532273	BP	A	17	3700	Sparkplug Ridge 17 Federal Com 2	P&A	Red Lake; Glorieta- Yeso	1945
3001529027	Lime Rock	P	8	2350	Hawk 8 P Federal 011	O	Red Lake; Glorieta- Yeso	2014

APACHE CORPORATION

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EMPIRE ABO UNIT 5

330' FSL & 990' FWL SEC. 9, T. 18 S., R. 27 E.

EDDY COUNTY, NEW MEXICO

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3001500908	BP	B	16	5825	Empire Abo Unit 007G	P&A	Empire; Abo	2033
3001500849	BP	O	9	5835	Empire Abo Unit 701P	P&A	Empire; Abo	2052
3001500903	BP	F	16	5700	Empire Abo Unit 006E	P&A	Empire; Abo	2078
3001534163	FDW	K	9	3324	CC Federal 005	P&A	Red Lake; Queen- Grayburg- SA	2093
3001529484	Lime Rock	O	9	2649	Hawk 9 O Federal 017	O	Red Lake; Queen- Grayburg- SA	2108
3001528277	Lime Rock	I	8	2249	West Red Lake Unit 048	O	Red Lake; Queen- Grayburg- SA	2149
3001500902	Apache	E	16	5708	Empire Abo Unit 005D	O	Empire; Abo	2339
3001500821	Lime Rock	I	8	1836	West Red Lake Unit 026	P&A	Red Lake; Queen- Grayburg- SA	2438
3001500840	Apache	E	9	5666	Empire Abo Unit 005A	O	Empire; Abo	2619
3001529097	Lime Rock	E	9	2400	Hawk 9 E Federal 006	O	Red Lake; Queen- Grayburg- SA	2628
3001530966	Marbob	B	16	9910	Scoggin Draw State C Com 2	P&A	Red Lake; Glorieta- Yeso	2651

- VII.
1. Average injection rate will be 5,000 bwpd.  
Maximum injection rate will be 7,500 bwpd.
  2. System will be closed.
  3. Average injection pressure will be 1,000 psi.

Maximum injection pressure will be 1,075 psi ( $= 0.2 \text{ psi/foot} \times 5,378'$  (highest perforation)).

4. Injection source will be produced water only from Apache wells in the Empire Abo Unit, mainly from the Abo. Apache has 200 wells in the unit. An Abo water analysis is in Exhibit F. No compatibility problems have been reported from the other injection wells in the Unit.
5. Abo is productive within one mile. The #5 well has produced at least 263,825 barrels of oil and 1,171,386 Mcf of gas.

VIII. The Abo (>400' thick in this well) reef extends east to west and is composed of fractured and vugular dolomitized limestone. Closest possible underground source of drinking water above the proposed injection interval are the near surface red beds. Water bearing strata were found from 325' to 350' in a 381' deep well (RA 03714) that is 2,954' northwest. Surface casing was set at 1,503' and cemented to the surface in the #5 well.

Closest water well (RA 03714) is 2,945' northwest. Its depth is 381'. No evidence of it could be found during a January 28, 2015 field inspection. No underground source of drinking water is below the proposed injection interval.

Formation tops are:

Tansill = 0'  
Queen = 620'  
San Andres = 1,512'  
Glorieta - Yeso = 2,965'  
Abo = 5,258'  
Total Depth: 5,768'

There will be almost a mile of vertical separation between the bottom of the only possible underground water source (red beds) and the top of the Abo.

Produced water has been injected or disposed into zones (Queen, Grayburg, and San Andres) above the proposed injection interval in 10 wells within a 1-mile radius.

IX. The well will be stimulated with acid to clean out scale or fill.

APACHE CORPORATION  
EMPIRE ABO UNIT 5  
330' FSL & 990' FWL SEC. 9, T. 18 S., R. 27 E.  
EDDY COUNTY, NEW MEXICO

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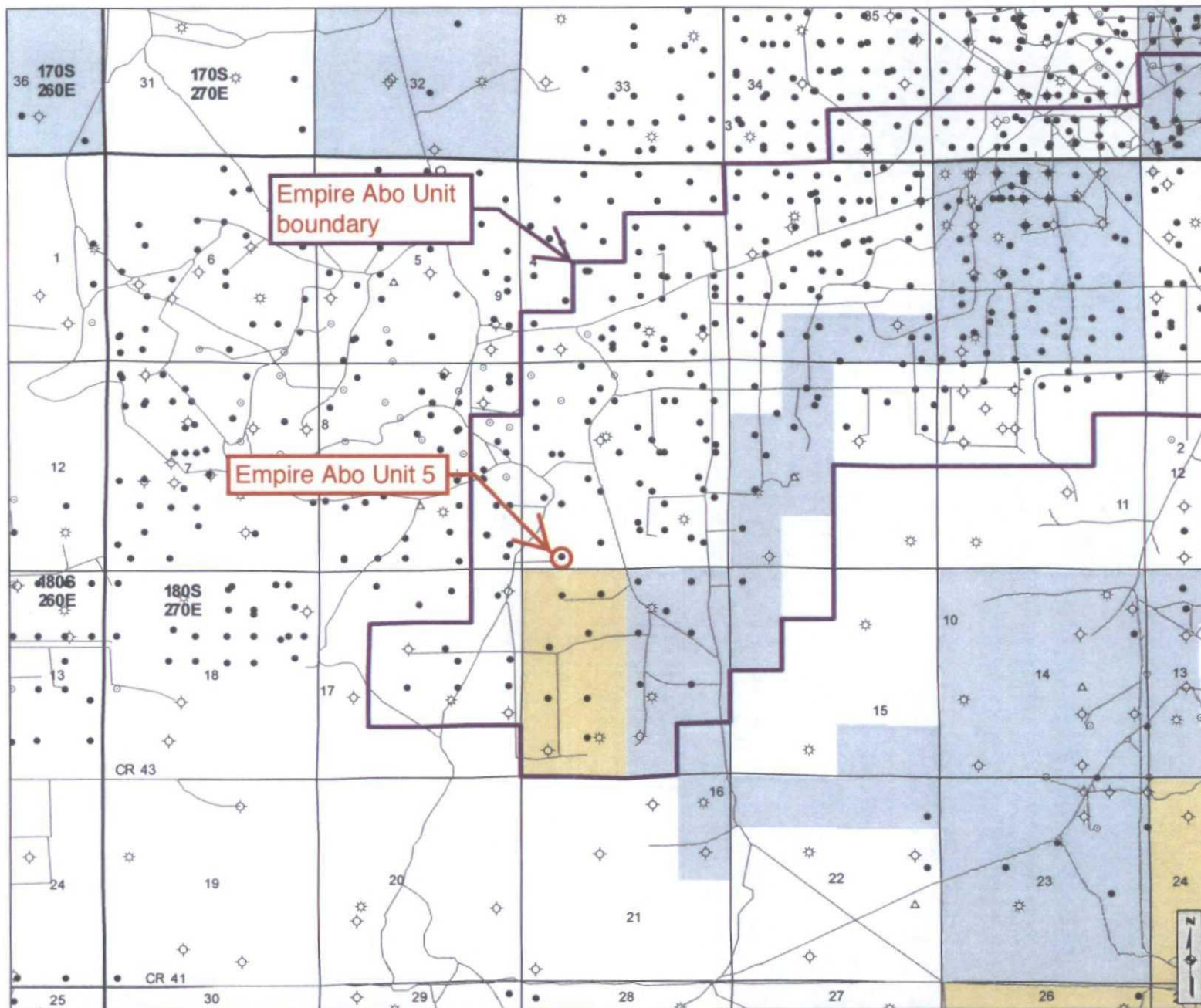
30-015-00839

X. No logs are on file with the NMOCD.

XI. According to the State Engineer's records and a January 28, 2015 field inspection, there are no water wells within a one-mile radius.

XII. Apache is not aware of any geologic or engineering data that may indicate that the Abo is in hydrologic connection with any underground sources of water. Closest Quaternary fault is 52 miles southwest (Exhibit I). At least 130 injection and 14 saltwater disposal wells are active in the Abo.

XIII. A legal ad (see Exhibit J) was published on April 30, 2015. Notice (this application) has been sent (Exhibit K) to the surface owner (BLM), all oil and gas lessees (Chevron, ConocoPhillips, ExxonMobil, Lime Rock, Occidental) or Abo operating right holders (BP, Craig Clark, Michael Dwinnell, Lime Rock Resources, Marbob, Occidental, Vanguard Resources, & Yates), and all oil and gas lessors (only New Mexico State Land Office and BLM) within a half-mile.



#### Cartographic Features

- County Boundaries
- County Seats
- City, Town or Village
- SLO District Offices
- SLO District Boundary
- Hwy Mileposts
- Interstate
- NM Hwy
- Local Road
- Continental Divide

#### Federal Minerals Ownership

- All Minerals
- Coal Only
- Oil and Gas Only
- Oil, Gas and Coal Only
- Other Minerals

#### State Trust Lands

- Surface Estate
- Subsurface Estate
- Surface and Subsurface Estate

#### State Leases

- Oil and Gas Leases
- Agricultural Leases
- Commercial Leases
- Minerals Leases
- Not Available for Oil and Gas Leasing
- Oil and Gas Leasing Influenced by Restriction

#### Oil and Gas Related Features

- Oil and Gas Unit Boundary
- Participating Areas in Units
- Geologic Regions
- Volcanic Vents

- NMOCD Order R-111-P
- Potash Enclave Outline

#### NMOCD Oil and Gas Wells

- CO<sub>2</sub>
- Injection
- Oil
- Water
- Gas
- Miscellaneous
- Salt Water Disposal
- DA or PA

### New Mexico State Land Office Oil, Gas and Minerals

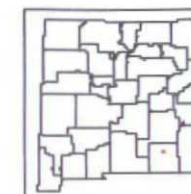
0 0.15 0.3 0.6 0.9 1.2 Miles  
Universal Transverse Mercator Projection, Zone 13  
1983 North American Datum

The New Mexico State Land Office assumes no responsibility or liability for, or in connection with, the accuracy, reliability or use of the information provided here, in State Land Office data layers or any other data layer.

Land Office Geographic Information Center  
logc@slo.state.nm.us

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EXHIBIT A



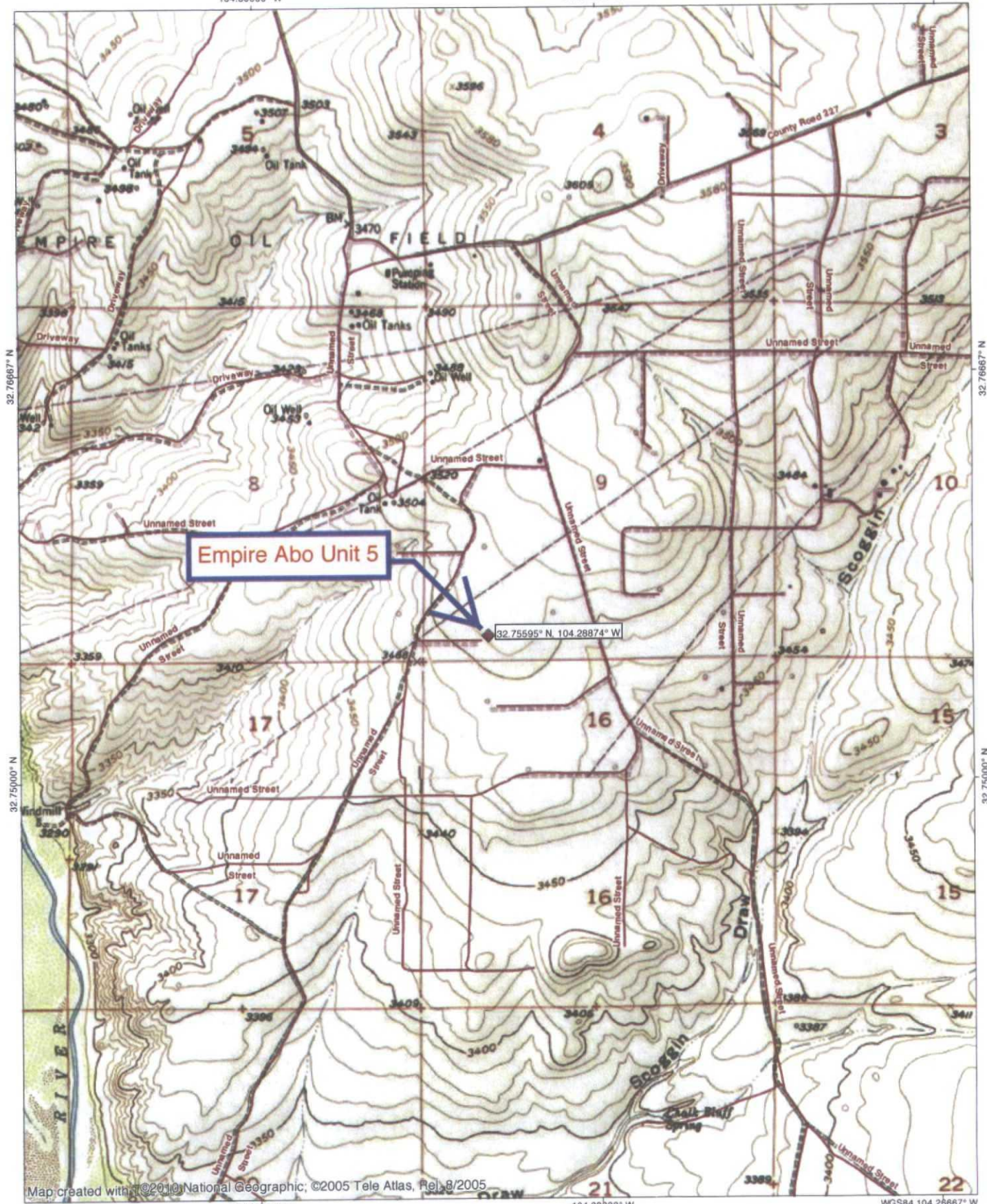
www.nmstatelands.org



104.30000° W

104.28333° W

WGS84 104.26667° W



Empire Abo Unit 5

32 75595° N 104 28874° W

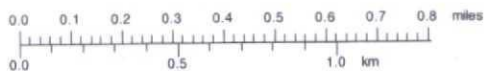


EXHIBIT A

TN=MN

7.5°

01/18/15

NEW MEXICO OIL CONSERVATION COMMISSION

Well Location and Acreage Dedication Plat

Section A.

Date March 30, 1960

Operator Humble Oil & Refining Co. Lease Abo-chalk Bluff Draw Unit  
Well No. 7 Unit Letter M Section 9 Township 18 South Range 27 East NMPM  
Located 330 Feet From South Line, 990 Feet From West Line  
County Eddy G. L. Elevation Later Dedicated Acreage 40 Acres  
Name of Producing Formation Abo Pool Empire-Abo

1. Is the Operator the only owner\* in the dedicated acreage outlined on the plat below?  
Yes \_\_\_\_\_ No ✓
2. If the answer to question one is "no", have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes ✓ No \_\_\_\_\_ If answer is "yes," Type of Consolidation Unitization
3. If the answer to question two is "no," list all the owners and their respective interests below:

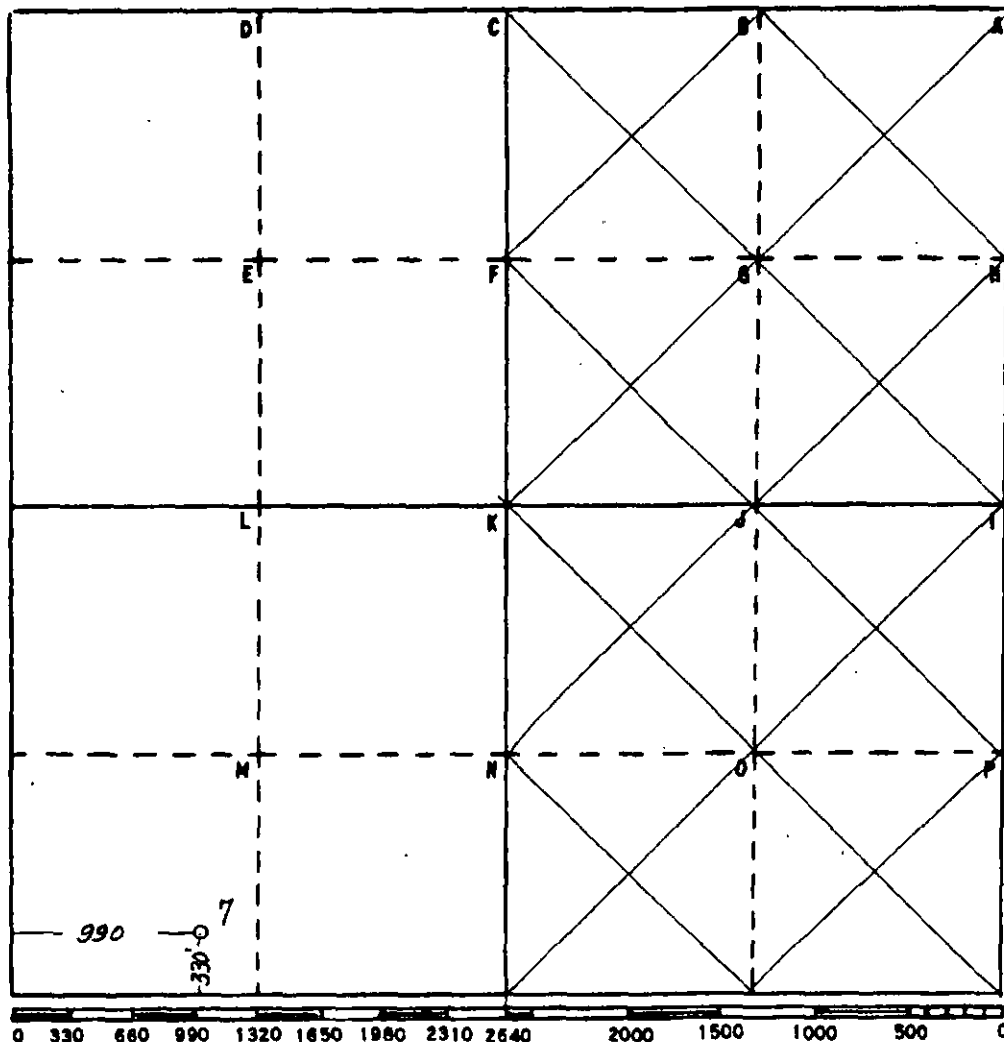
Owner

Land Description

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief

HUMBLE OIL & REFIN. CO.

(Operator)

H. P. Hensley

(Representative)

Box 1600 Midland, Texas

Address

This is to certify that the well location shown on the plat in Section B was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed March 29, 1960

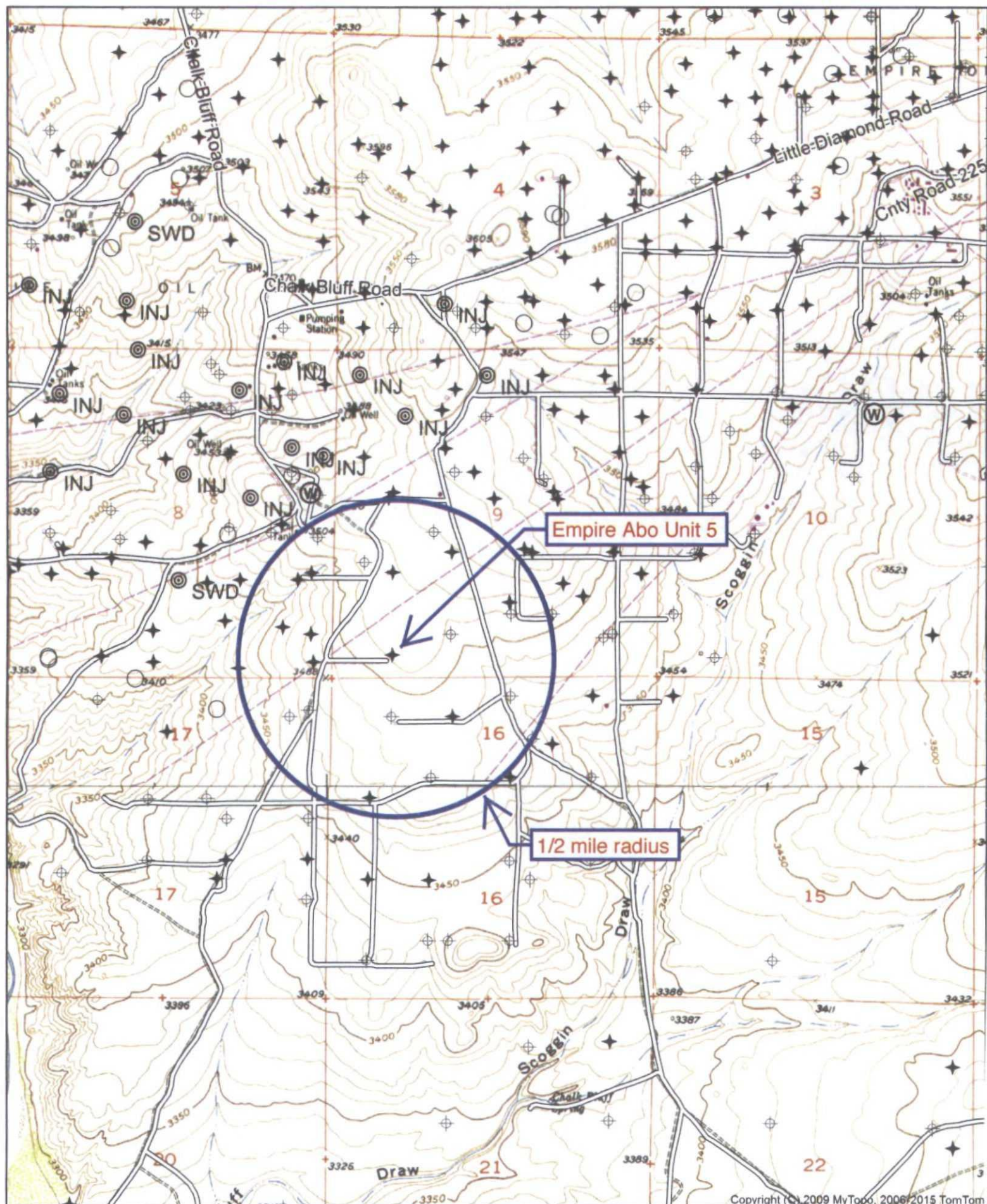
W. S. Hunterfield  
Registered Professional  
Engineer and Land Surveyor

EXHIBIT A

Certificate No. 1382

FILE NO. W-A-781A

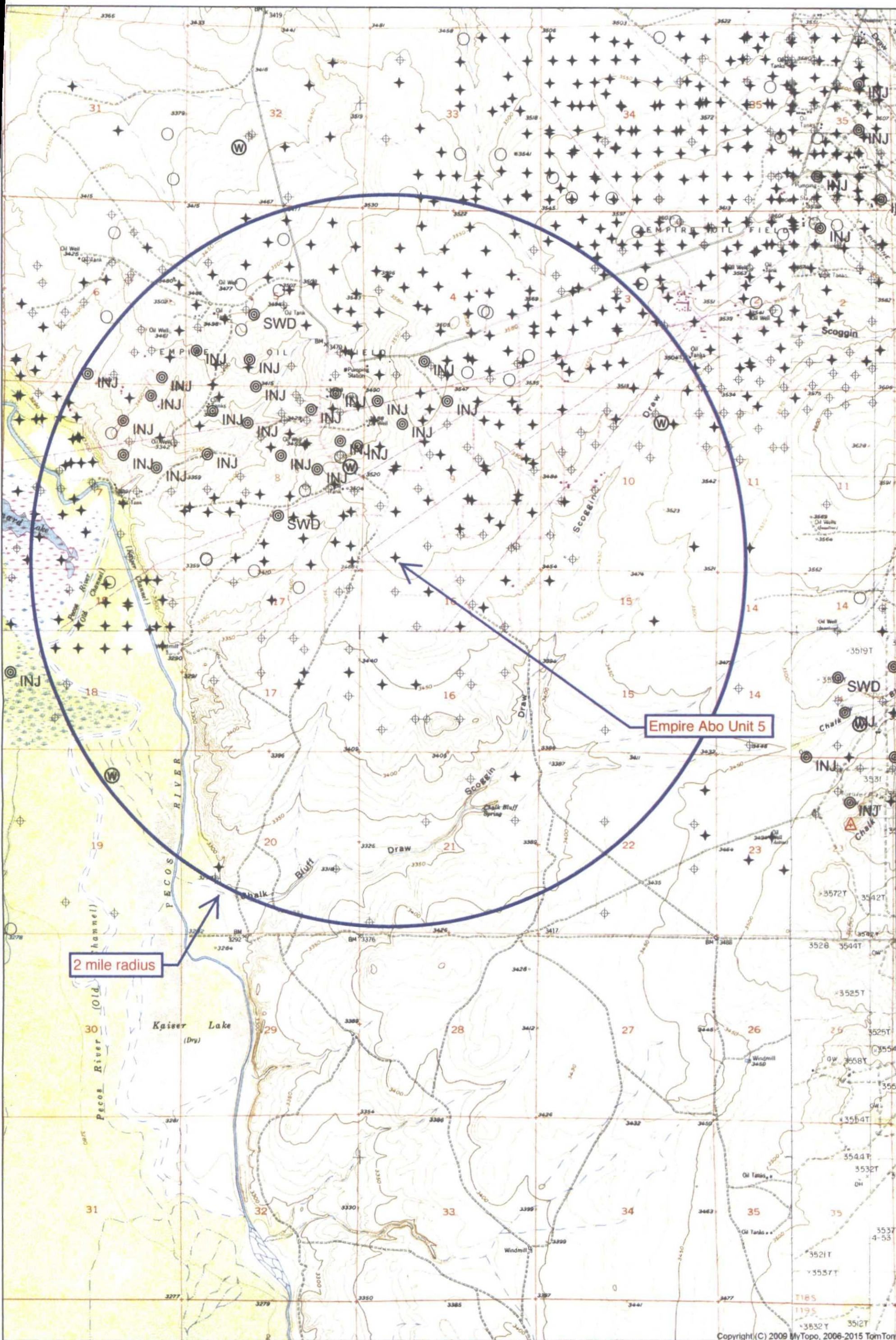




Quad: SPRING LAKE  
Scale: 1 inch = 2,000 ft.

EXHIBIT B



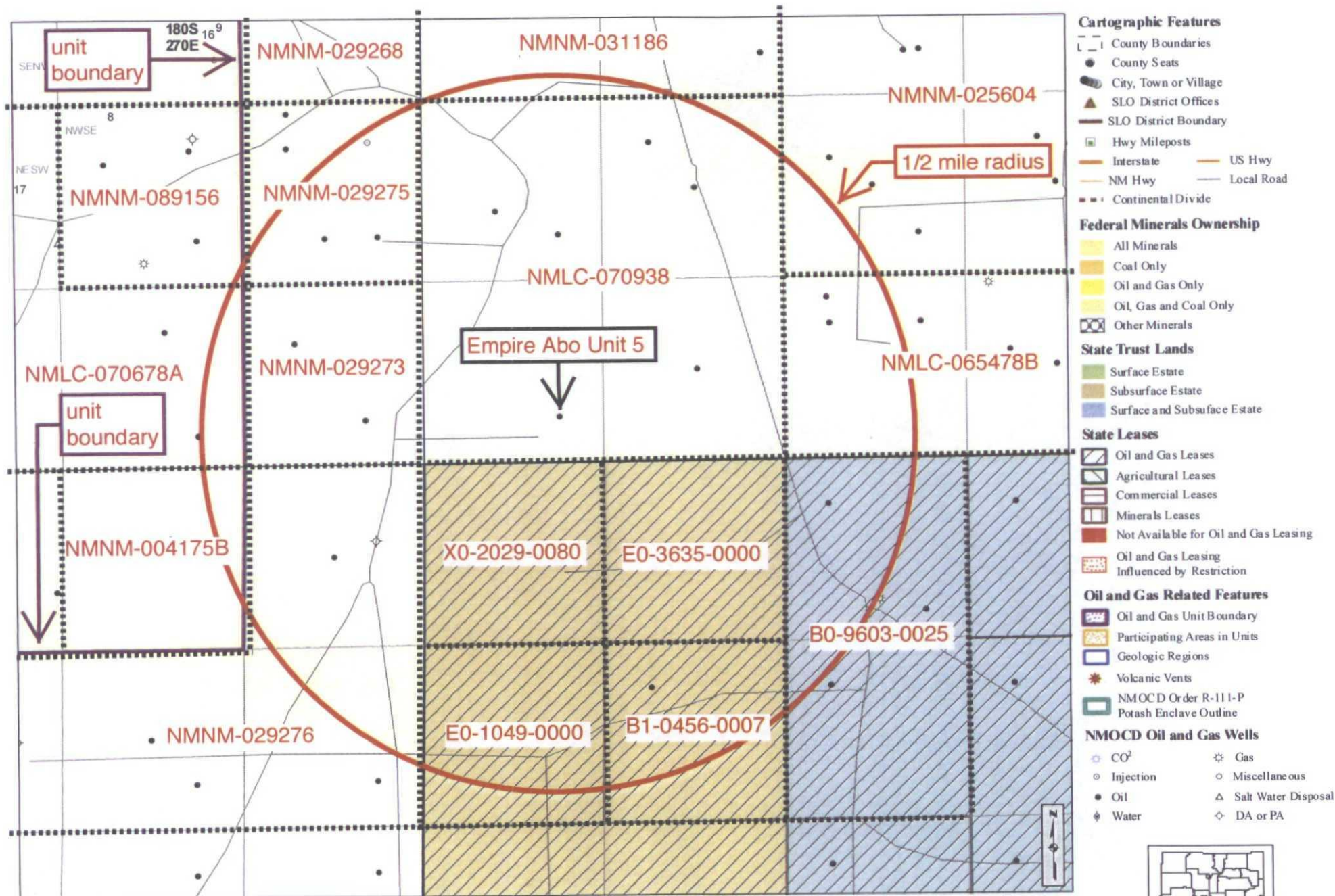


Copyright (C) 2009 MyTopo, 2006-2015 TomTom

Quad: LAKE MC MILLAN NORTH  
Scale: 1 inch = 2,564 ft.

EXHIBIT C





## New Mexico State Land Office Oil, Gas and Minerals

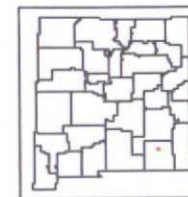
0 0.0375 0.075 0.15 0.225 0.3 Miles  
Universal Transverse Mercator Projection, Zone 13  
1983 North American Datum

The New Mexico State Land Office assumes no responsibility or liability for, or in connection with, the accuracy, reliability or use of the information provided here, in State Land Office data layers or any other data layer.

Land Office Geographic Information Center  
logic@slo.state.nm.us

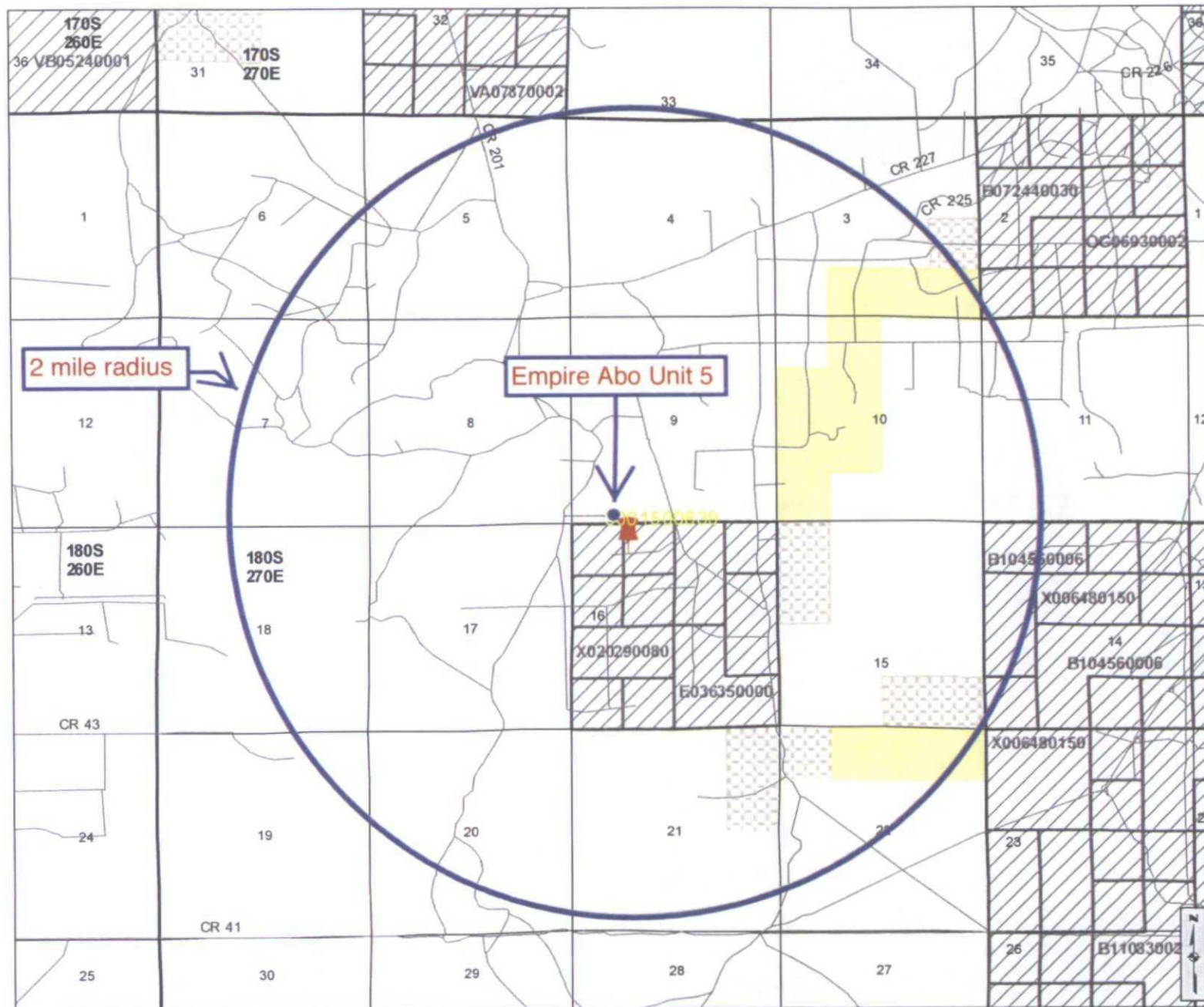
Created On: 4/26/2015 1:27:59 PM

**EXHIBIT D**



www.nmstatelands.org





### Cartographic Features

- County Boundaries
- County Seats
- City, Town or Village
- SLO District Offices
- SLO District Boundary
- Hwy Mileposts
- Interstate
- NM Hwy
- Local Road
- Continental Divide

### Federal Minerals Ownership

- All Minerals
- Coal Only
- Oil and Gas Only
- Oil, Gas and Coal Only
- Other Minerals

### State Trust Lands

- Surface Estate
- Subsurface Estate
- Surface and Subsurface Estate

### State Leases

- Oil and Gas Leases
- Agricultural Leases
- Commercial Leases
- Minerals Leases
- Not Available for Oil and Gas Leasing
- Oil and Gas Leasing Influenced by Restriction

### Oil and Gas Related Features

- Oil and Gas Unit Boundary
- Participating Areas in Units
- Geologic Regions
- Volcanic Vents
- NMOC Order R-111-P
- Potash Enclave Outline

### NMOC Oil and Gas Wells

- CO<sub>2</sub>
- Gas
- Injection
- Miscellaneous
- Oil
- Salt Water Disposal
- Water
- DA or PA

## New Mexico State Land Office Oil, Gas and Minerals

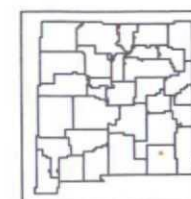
0 0.15 0.3 0.6 0.9 1.2  
Miles  
Universal Transverse Mercator Projection, Zone 13  
1983 North American Datum

The New Mexico State Land Office assumes no responsibility or liability for, or in connection with, the accuracy, reliability or use of the information provided here, in State Land Office data layers or any other data layer.

Land Office Geographic Information Center  
logc@slo.state.nm.us

Created On: 5/2/2015 2:26:27 PM

**EXHIBIT E**



www.nmstatelands.org

# General Information About: Sample 5343

GREEN B

API	3001503183	Sample Number	
Unit/Section/ Township/Range	N / 29 / 17S / 29E	Field	GRAYBURG-JACKSON
County	Eddy	Formation	ABO
State	NM	Depth	
Lat/Long	32.79889 , -104.09750	Sample Source	UNKNOWN
TDS (mg/L)	29400	Water Type	
Sample Date(MM/DD/YYYY)		Analysis Date(MM/DD/YYYY)	
Remarks/Description			
Cation Information (mg/L)		Anion Information (mg/L)	
Potassium (K)		Sulfate (SO)	2800
Sodium (Na)		Chloride (Cl)	13700
Calcium (Ca)		Carbonate (CO <sub>3</sub> )	
Magnesium (Mg)		Bicarbonate (HCO <sub>3</sub> )	2520
Barium (Ba)		Hydroxide (OH)	
Manganese (Mn)		Hydrogen Sulfide (H <sub>2</sub> S)	
Strontium (Sr)		Carbon Dioxide (CO <sub>2</sub> )	
Iron (Fe)		Oxygen (O)	

EXHIBIT F

Sorted by distance from Empire Abo Unit 5

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
EAU 005C	5/29/60	5780	Empire-Abo	P & A	11	8.625	1500	800 sx	GL	circulated
30-015-00901					7.875	4.5	5700	800 sx	GL	circulated
D-16-18s-27e										
EAU 006B	2/13/60	5790	Empire-Abo	P & A	11	8.625	1497	700 sx	GL	temp survey
30-015-00837					no report	4.5	5789	350 sx	3910	temp survey
N-9-18s-27e										
EAU 005B	5/15/60	5700	Empire-Abo	Oil	11	8.625	1501	800 sx	GL	circulated
30-015-00841					no report	4.5	5700	800 sx	GL	circulated
L-9-18s-27e										
EAU 004A	10/11/60	5591	Empire-Abo	Oil	11	8.625	1529	800 sx	GL	circulated
30-015-00824					no report	4.5	5591	800 sx	GL	circulated
P-8-18s-27e										
EAU 006D	3/14/60	5681	Empire-Abo	Oil	11	8.625	1508	700 sx	GL	circulated
30-015-00900					7.875	4.5	5680	800 sx	800	temp survey
C-16-18s-27e										
Chalk Bluff 12	12/30/60	5576	Empire-Abo	Oil	11	8.625	1534	800 sx	GL	circulated
30-015-00915					7.875	4.5	5576	850 sx	400	temp survey
I-17-18s-27e										
EAU 004B	1/10/60	5576	Empire-Abo	Oil	11	8.625	1476	750 sx	GL	circulated
30-015-00825					no report	4.5	5717	350 sx	3730	calculated
I-8-18s-27e										
EAU 006A	6/8/60	5717	Empire-Abo	P & A	11	8.625	1513	800 sx	GL	circulated
30-015-00835					unknown	4.5	5694	800 sx	1000	temp survey
K-9-18s-27e										
EAU 007G	5/7/60	5825	Empire-Abo	P & A	11	8.625	1514	800 sx	GL	circulated
30-015-00908					7.875	4.5	5825	800 sx	1765	temp survey
B-16-18s-27e										
EAU 701P	10/30/59	5835	Empire-Abo	P & A	11	8.625	1496	unknown	GL	circulated
30-015-00849					7.875	4.5	5835	850 sx	1250	temp survey
O-9-18s-27e										

Sorted by distance from Empire Abo Unit 5

[illegible]

OUT  
of  
AIR

Apache's Empire Abo Unit 5C  
 30-015-00901  
 D-16-18s-27e  
 spud: 5-29-60  
 P&A: 11-23-10

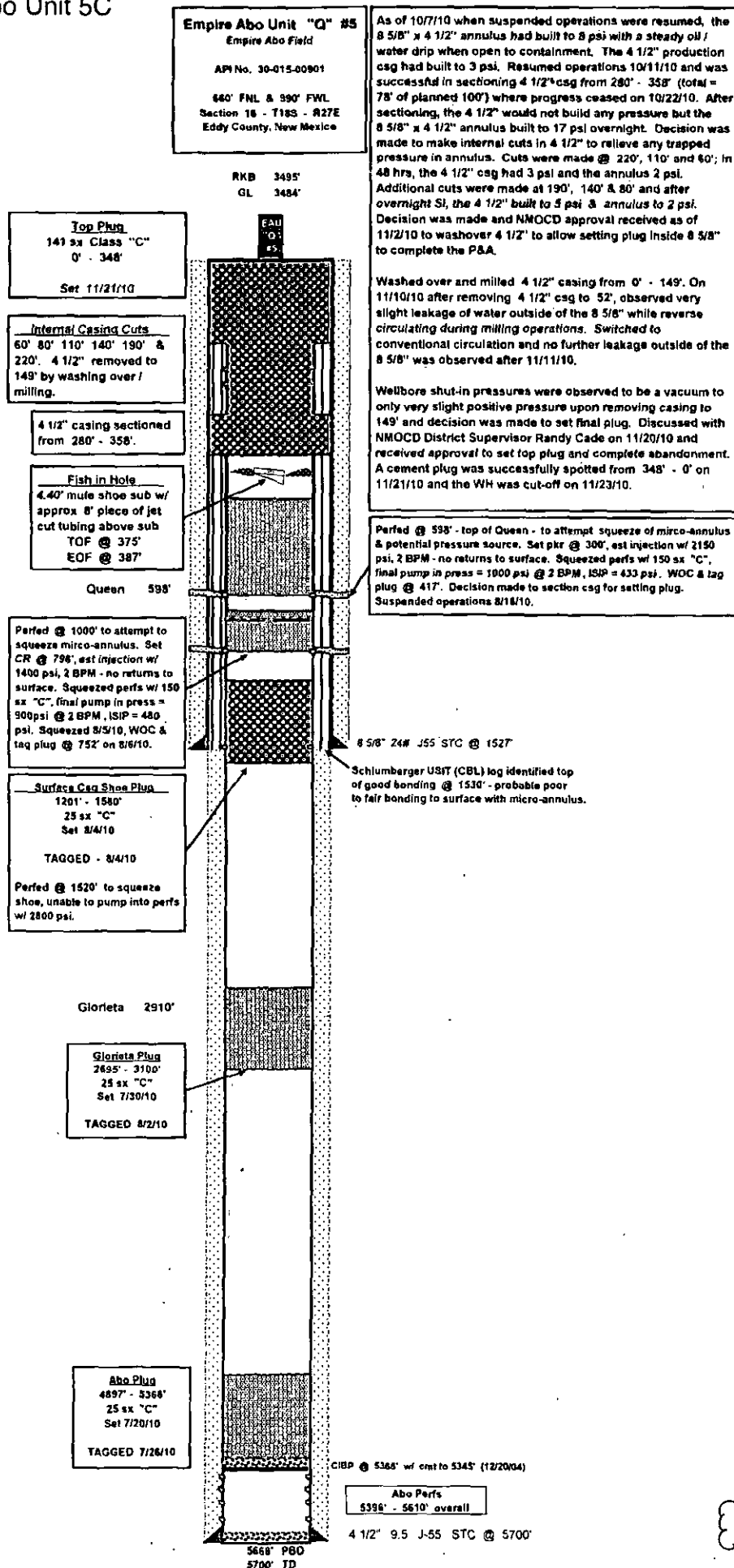
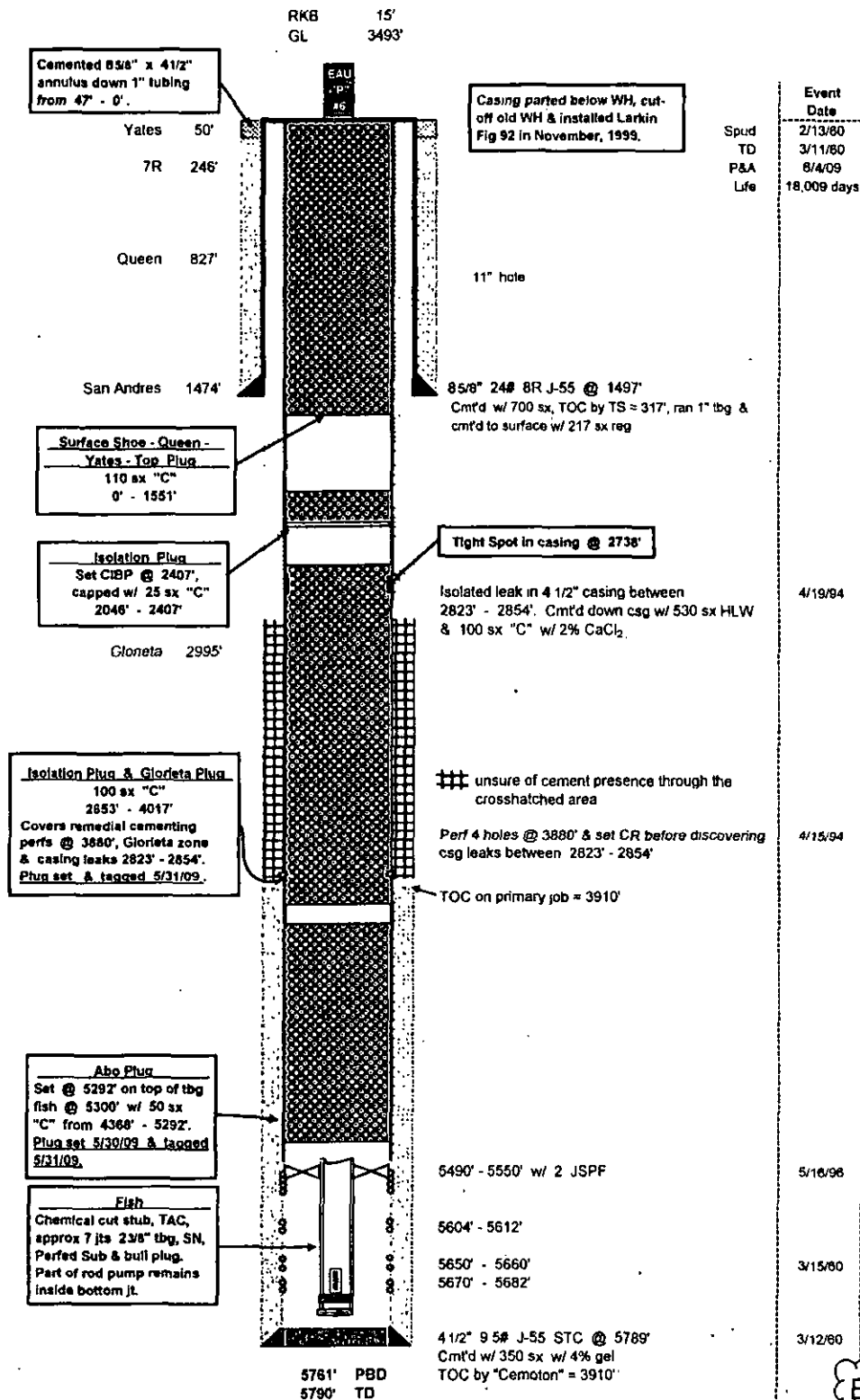


EXHIBIT G

BP's Empire Abo Unit 6B  
 30-015-00837  
 N-9-18s-27e  
 spud: 2-13-60  
 P&A: 6-4-09

**Empire Abo Unit "P" #6**  
 Empire Abo Field  
 (Federal Lease No. NMLC070335)  
 API No. 30-015-00837  
 660' FSL & 1980' FWL  
 Section 9 - T18S - R27E  
 Eddy County, New Mexico  
 (Originally drilled by Humble O&R as the Chalk  
 Bluff Draw Unit #3)

**Final P&A Status**



**EXHIBIT G**



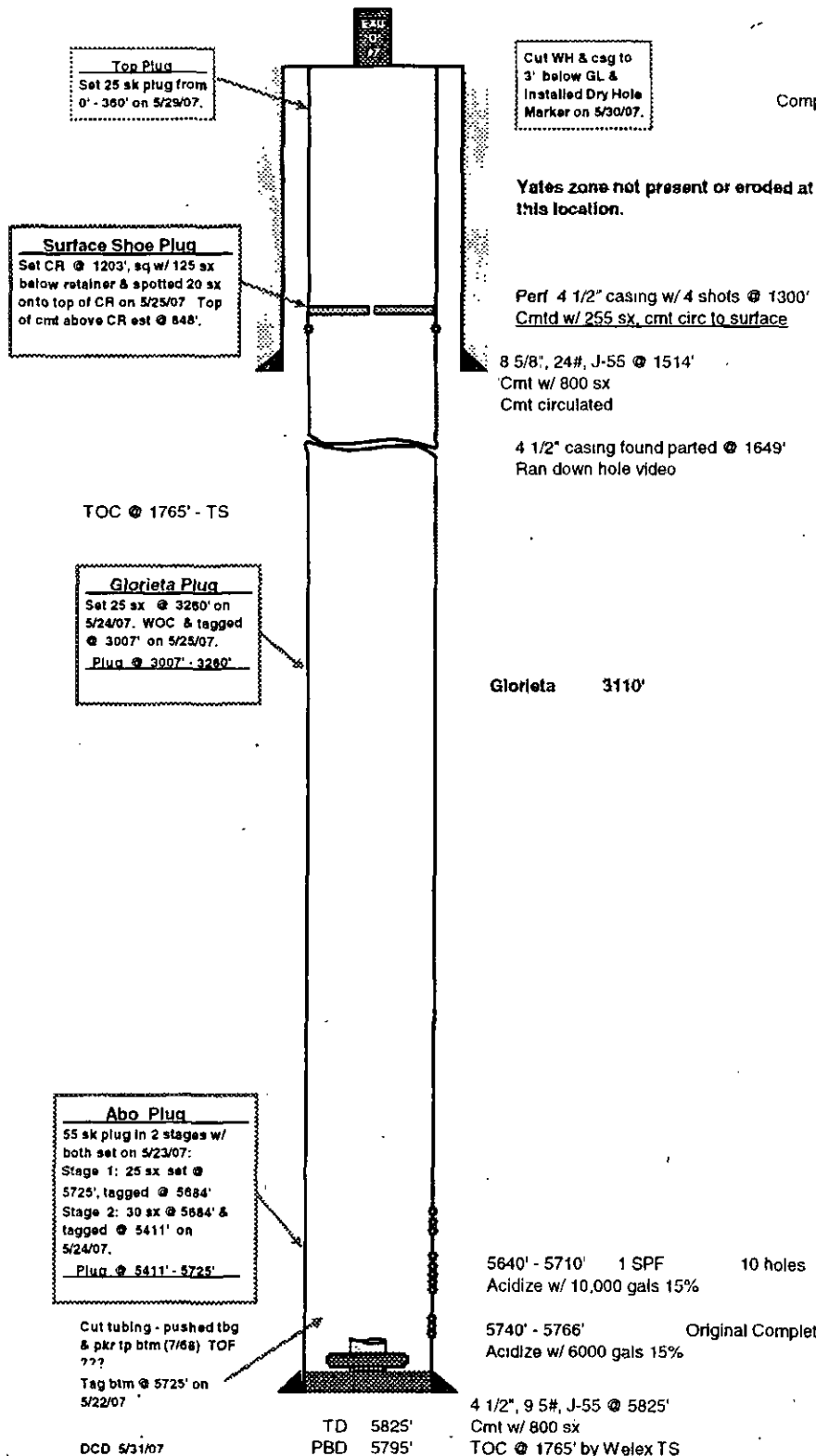
BP'S Empire Abo Unit 7G  
 30-015-00908  
 B-16-18s-27e  
 spud: 5-7-60  
 P&A: 5-29-07

**Empire Abo Unit "Q" #7**  
 Empire Abo Field  
 API No. 30-015-00908  
 330' FNL & 2310' FEL  
 Sec 16 - T18S - R27E  
 Eddy County, New Mexico

**FINAL P&A**

5/30/07

RKB 16'  
 GL 3465'



Event  
 Date

Spud 5/7/60  
 Completed 5/29/60  
 P&A 5/30/07

3/7/01

5/11/60

3/2/05

7/26/68

5/29/60

5/27/60

**EXHIBIT G**

BP's Empire Abo Unit 701P  
30-015-00849  
O-9-18s-27e  
spud: 10-30-59  
P&A: 10-13-09

**Empire Abo Unit P-701**

Empire Abo Field

API No. 30-015-00849

985' FSL & 2297' FEL

Sec 9 - T18S - R27E

Eddy County, New Mexico

Event  
Date

RKB elev = 3513'

120 sx GL - 400'

Spud 10/30/59  
Completed 11/26/59

25 sx 1077' - 1650'

8 5/8", 24#, J-55 @ 1496'

Cmt w/ ? sx

Cmt circulated (records do not show amt but indicate cmt circ)

Glorieta plug

25 sx 2760' - 3204'

set CIBP @ 5505'

35 sx 4999' - 5505'

5579-80' cemented w/ 100 sx 8/68 - attempt to shut off gas

5610-40' cemented with 125 sx 3/69 - attempt to shut off gas

5629-40', 5651-58'

5676-87', 5696-5708', 5715-22', 5737-42'

TD 5835'  
PBD 5804'

4 1/2", 9.5#, J-55 @ 5835'

Cmt w/ 850 sx

TOC @ 1250' - TS

EXHIBIT G

BP's Empire Abo Unit 6E  
30-015-00903  
F-16-18s-27e  
spud: 7-1-60  
P&A: 1-13-10

**Empire Abo Unit "R" #6**  
Empire Abo Field  
  
API No. 30-015-00903  
  
1650' FNL & 1650' FWL  
Sec 16 - T18S - R27E  
Eddy County, New Mexico  
  
Originally drilled by Humble Oil & Refining Co.  
as the Abo Chalk Bluff Draw Unit #14

**Final P&A Status**  
1/18/10

**Top Plug**  
0' - 114'  
Perforated 4 1/2" csg @ 114'  
Circ'd cmt into 8 5/8" x 4 1/2"  
annulus and left 4 1/2" csg  
filled w/ cmt from 0' - 114'.  
Used total of 35 sx "C".  
Set 1/13/10

RKB 13.8'  
GL 3484'

EAU  
"R"  
#6

7R 206'

Yates top is less than 30'  
or entirely absent

Queen 782'

TOC = 230' by CBL of 11/19/09

8 5/8" 32# J-55 STC @ 1511'  
w/ 800 sx, cement circulated to surface

**8 5/8" Shoe - Queen Plug**  
610' - 1580'  
60 sx Class "C"  
Set & tagged 1/13/10

**Glorieta & VIT Isolation Plug**  
2370' - 3116'  
45 sx Class "C"  
Set 1/12/10 & tagged 1/13/10

Glorieta 3033'

Test Perfs #3 2562' & 2578'

Test Perfs #2 2689' & 2704'

Restriction in 4 1/2" csg @ 2751'

**Vertical Integrity Test - Perf Intervals**  
#1 5350' & 5365' - 5 SPF  
#2 2689' & 2704' - 5 SPF  
#3 2562' & 2578' - 5 SPF

**Abo VIT Isolation Plug**  
4955' - 5426'  
30 sx Class "C"  
Set & tagged 1/12/10

ABO 5140'

Perfs 5461' - 5600' were  
squeezed w/ 260 sx "H" on  
9-28-82 and well TA'd. Cleaned  
out WB & re-perfed 5498' - 5600'  
w/ 2 SPF on 8-12-94 and well  
returned to production. On  
11-5-94, set CIBP @ 5468'  
on WL & capped w/ 35 cmt to  
5433', well TA'd.

CIBP @ 5468'  
w/ 35' cmt to 5433'

Test Perfs #1 5350' & 5365'

Added 5461' 5482' 5501' 5508'

Added 5505' 5516' 5519' 5524' 5529' 5537'  
& 5542' w/ 1 SPF - perfs communicated to lower

5582' - 5600' w/ 2 JSPF

4 1/2" 9.5# J-55 STC @ 5699'  
w/ 800 sx (12% gel & 1/4 pps floeal in first 100 sx  
Cmt circulated to surface per original drilling report

6673' PBO  
5700' TD

OCB 12/16/09

Event	Date
Spud	7/1/60
RR	7/23/60
P&A	1/13/10
Life of Well	18,093 days

7/4/60

Dec, 1963

May, 1963

3/10/79

7/21/60

**EXHIBIT G**

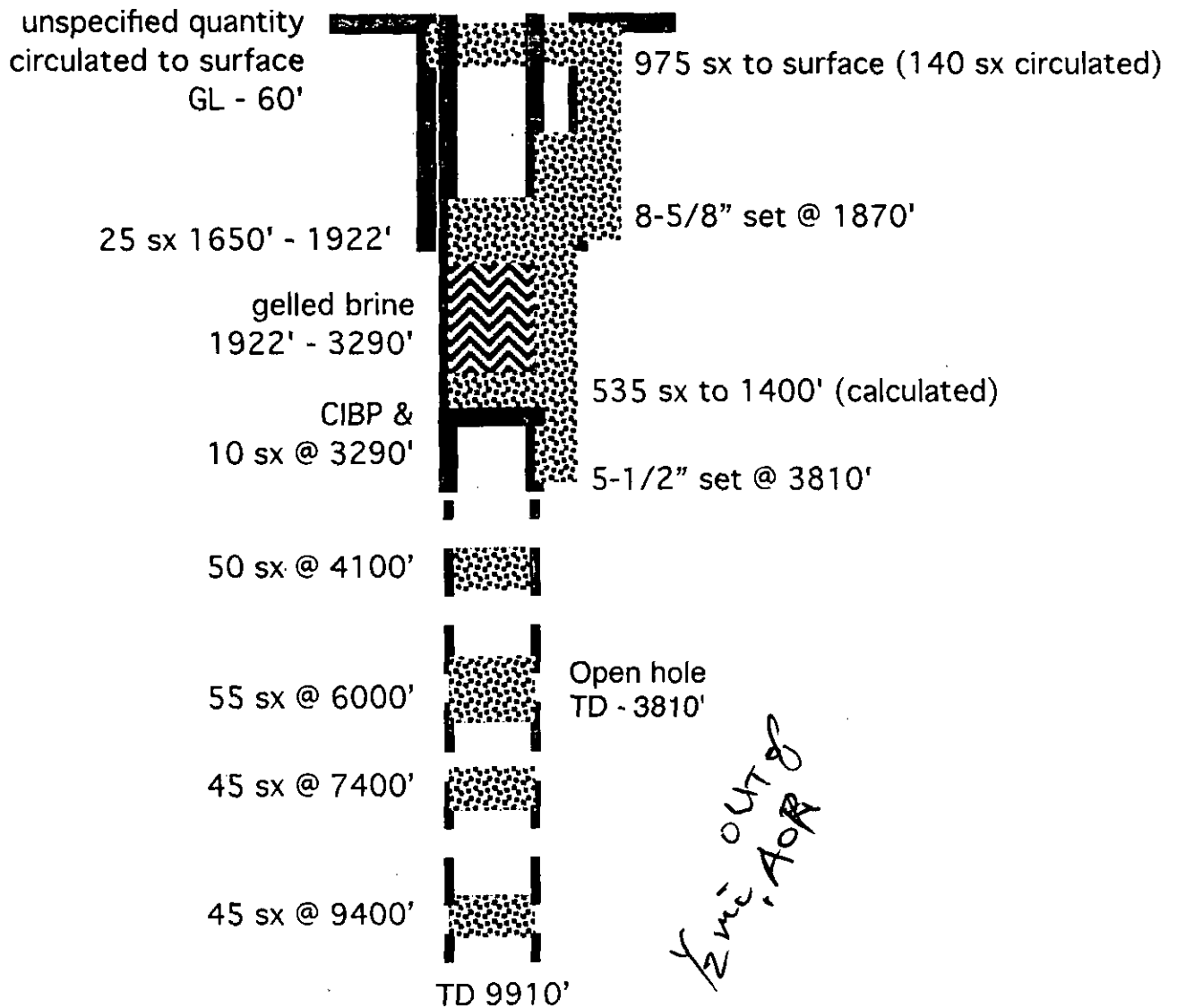
Marbob's Scoggins Draw State C Com 2

API 30-015-30096

B-16-18s-27e

Spud: 4-28-00

P&A: 12-4-01



(not to scale)

EXHIBIT G



# New Mexico Office of the State Engineer

## Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)										(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)									
WR File Nbr	Sub	basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	6416 4	Sec	Tws	Rng	X	Y	Distance		
RA 03714			PRO		0 HUMBLE OIL & REFINING COMPANY	CH	RA 03714		1 mile =	Shallow	4	4	2	08	18S	27E	566212 3625253* 898		
RA 03917			PRO		0 PAN AMERICAN PETROLEUM CORP.	LE	RA 03917		1,610 meters	Artesian	4	1	2	10	18S	27E	569019 3625660* 2678		
RA 04298			OBS		0 LEE DRILLING CO	ED	RA 04298			Shallow	1	2	19	18S	27E	564082 3622523* 3195			

Record Count: 3

### UTMNA83 Radius Search (In meters):

Easting (X): 566626

Northing (Y): 3624456

Radius: 3220 meters

x 3.28 feet/meter

10,561.6' = 2.0003 miles

Sorted by: Distance

EXHIBIT H

\*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.

1/18/15 10:08 AM

Page 1 of 1

ACTIVE & INACTIVE POINTS OF DIVERSION



# 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	Q	Q	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water Column
RA 03714		CH		4	4	2	08	18S	27E	566212	3625253*	898	381	
RA 03917		LE		4	1	2	10	18S	27E	569019	3625660*	2678	130	50 80
RA 04298		ED			1	2	19	18S	27E	564082	3622523*	3195	92	

Average Depth to Water: 50 feet

Minimum Depth: 50 feet

Maximum Depth: 50 feet

Record Count: 3

## UTMNAD83 Radius Search (in meters):

Easting (X): 566626

Northing (Y): 3624456

Radius: 3220

EXHIBIT H

\*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.

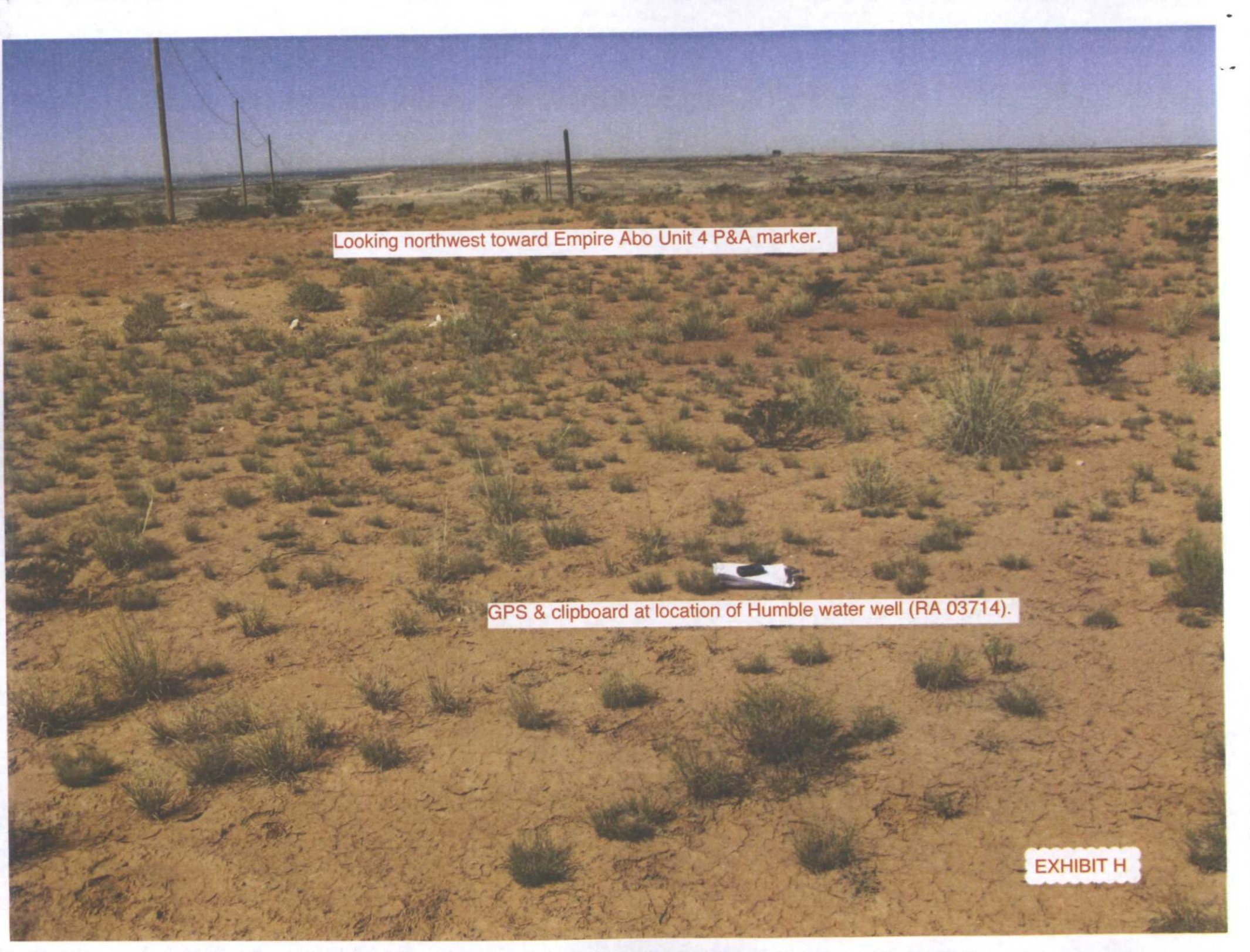


WGS84 Zone 13S 568000m E.



01/18/15



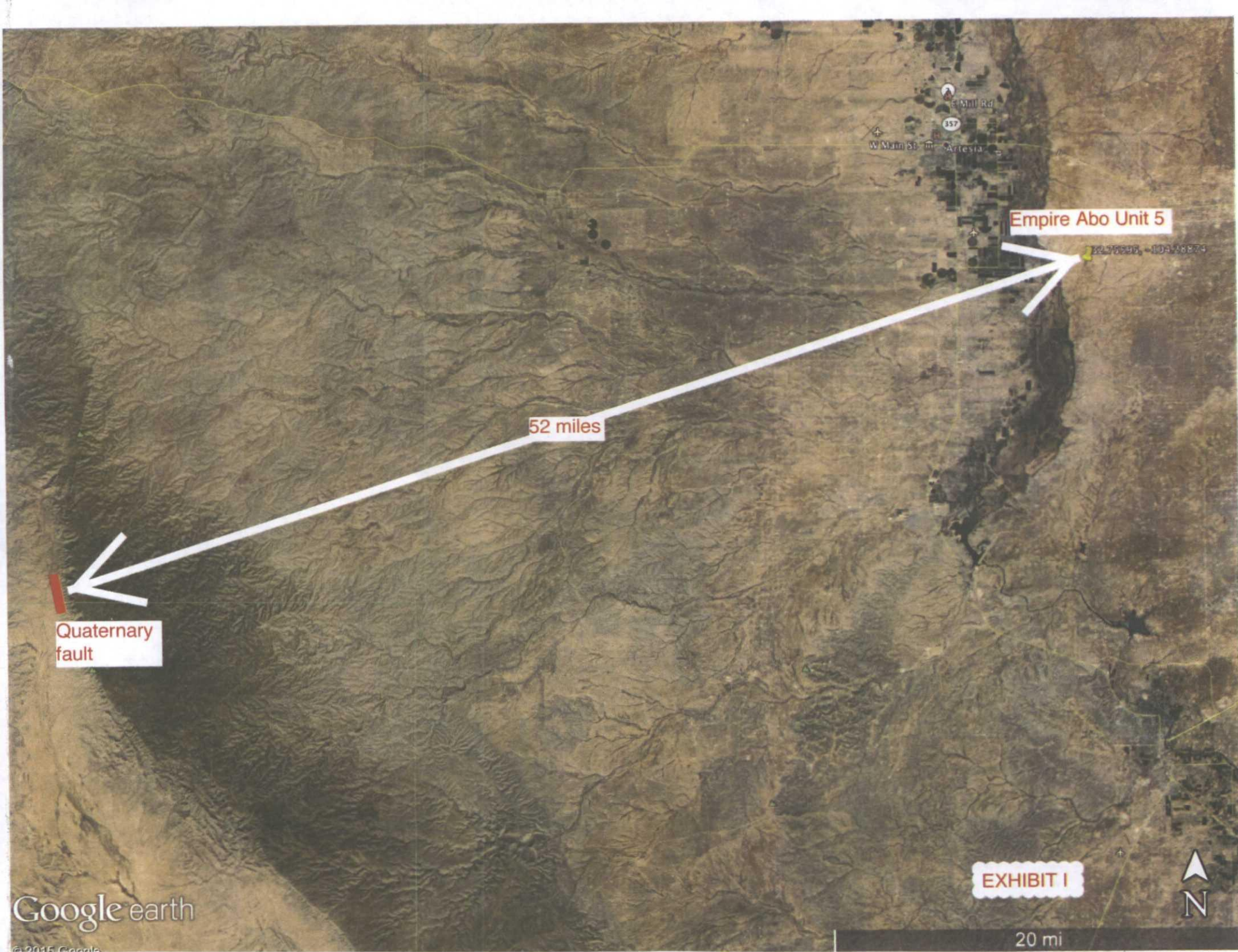


Looking northwest toward Empire Abo Unit 4 P&A marker.

GPS & clipboard at location of Humble water well (RA 03714).

EXHIBIT H





Empire Abo Unit 5

52 miles

Quaternary  
fault

EXHIBIT I



20 mi

Google earth

© 2015 Google

# Affidavit of Publication

No. 23474

State of New Mexico

County of Eddy:

Danny Scott

being duly sworn, says that he is the

Publisher

of the Artesia Daily Press, a daily newspaper of General circulation, published in English at Artesia, said county and state, and that the hereto attached

## Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same

day as follows:

First Publication April 30, 2015

Second Publication \_\_\_\_\_

Third Publication \_\_\_\_\_

Fourth Publication \_\_\_\_\_

Fifth Publication \_\_\_\_\_

Sixth Publication \_\_\_\_\_

Subscribed and sworn before me this

30th day of April 2015



OFFICIAL SEAL  
Latisha Romine  
NOTARY PUBLIC-STATE OF NEW MEXICO

My commission expires: 5/12/2015

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

# Copy of Publication:

## LEGAL NOTICE

Apache Corporation is applying for a water injection well. The Empire Abo Unit 5 will inject into the Abo from 5,378' to 5,674'. It is located 8 miles southeast of Artesia at 330 FSL & 990 FEL Sec. 9, T. 18 S. R. 27 E., Eddy County. Maximum disposal rate will be 7,500 bwpd. Maximum injection pressure will be 1,075 psi. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting: Brian Wood, Permits West, Inc., 37 Verano Loop, Santa Fe, NM 87508. Phone number is (505) 466-8120.

Published in the Artesia Daily Press, Artesia, N.M., April 30, 2015 Legal No. 23474

EXHIBIT J

**PERMITS WEST** INC.  
PROVIDING PERMITS for LAND USERS  
37 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

May 9, 2015

BLM  
620 E. Greene St.  
Carlsbad NM 88220

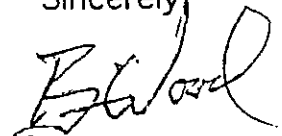
Apache Corporation is applying (application attached) to convert its Empire Abo Unit 5 oil well to a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Empire Abo Unit 5 (BLM lease) ID = 5,768'  
Proposed Injection Zone: Abo (from 5,378' - 5,674')  
Location: 330' FSL & 990' FWL Sec. 9, T. 18 S., R. 27 E., Eddy County, NM  
Approximate Location: 8 air miles southeast of Artesia, NM  
Applicant Name: Apache Corporation (432) 818-1926  
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a water injection well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The NMOCD address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,



Brian Wood

7014 2870 0001 8950 7748

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<b>CERTIFIED MAIL® RECEIPT</b>	
Domestic Mail Only	
For delivery information, visit our website at <a href="http://www.usps.com">www.usps.com</a> ®.	
<b>OFFICIAL USE</b>	
Postage	\$ 1.82
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.82

Sent To: BLM  
Street & Apt. No.,  
or PO Box No.  
City, State, ZIP+4: CARLSBAD

PS Form 3800, July 2014 See Reverse for Instructions

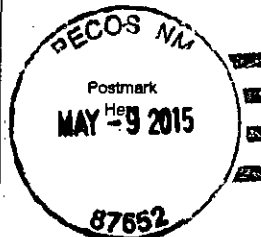


EXHIBIT K



May 9, 2015

Chevron USA Inc.  
1400 Smith  
Houston TX 77002

Apache Corporation is applying (application attached) to convert its Empire Abo Unit 5 oil well to a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Empire Abo Unit 5 (BLM lease) ID = 5,768'  
Proposed Injection Zone: Abo (from 5,378' - 5,674')  
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Approximate Location: 8 air miles southeast of Artesia, NM  
Applicant Name: Apache Corporation (432) 818-1926  
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a water injection well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The NMOCD address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

*Brian Wood*

Brian Wood

EXHIBIT K



Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Stamp: MAY - 9 2015 87552

Sent To: CHEVRON USA  
Street & Apt. No., or PO Box No.  
City, State, ZIP+4

May 9, 2015

BP America Production Co.  
P. O. Box 3092  
Houston, TX 77253-3092

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Location: 330' FSL & 990' FWL Sec. 9, T. 18 S., R. 27 E., Eddy County, NM  
Approximate Location: 8 air miles southeast of Artesia, NM  
Applicant Name: Apache Corporation (432) 818-1926  
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a gas injection well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The NMOCD address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

*Brian Wood*

Brian Wood



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See Reverse for Instructions



May 9, 2015

ConocoPhillips Company  
P. O. Box 7500  
Bartlesville, OK 74005-7500

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Please call me if you have any questions.

Sincerely,

*Brian Wood*

Brian Wood

EXHIBIT K

May 9, 2015

ExxonMobil Corporation  
P. O. Box 4358  
Houston, TX 77210-4358

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Please call me if you have any questions.

Sincerely,

*Brian Wood*

Brian Wood

7014 2870 0001 8950 7785

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City, State, ZIP+4

May 9, 2015

Occidental Permian LP  
5 East Greenway Plaza, #110  
Houston TX 77046-0521

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Please call me if you have any questions.

Sincerely,  
*Brian Wood*  
Brian Wood

EXHIBIT K

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PECOS NM  
MAY - 9 2015  
87552

Sent To  
Occidental - Permian  
Street & Apt. No.,  
or PO Box No.  
City, State, ZIP+4

May 9, 2015

New Mexico State Land Office  
P. O. Box 1148  
Santa Fe, NM 87504-1148

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Please call me if you have any questions.

Sincerely,  
*Brian Wood*  
Brian Wood

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MAY - 9 2015  
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S.F.

PS Form 3800, July 2014 See Reverse for Instructions

May 9, 2015

Bobby Reynolds  
Line Rock Resources A LP  
1111 Bagby St., #4600  
Houston TX 77002

Dear Bobby,

Apache Corporation is applying (application attached) to convert its Empire Abo Unit 5 oil well to a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

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Please call me if you have any questions.

Sincerely,

*Brian Wood*

Brian Wood

EXHIBIT K

May 9, 2015

Craig Clark  
310 W. Texas, #822  
Midland TX 79701

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Please call me if you have any questions.

Sincerely,

*Brian Wood*

Brian Wood

2014 2870 0001 8950 7809

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Sent To  
Line Rock B. Reynolds  
Street & Apt. No.,  
or PO Box No.  
City, State, ZIP+4  
Houston

PS Form 3800, July 2014

2014 2870 0001 8950 7816

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Sent To  
CRAIG CLARK  
Street & Apt. No.,  
or PO Box No.  
City, State, ZIP+4  
Midland

PS Form 3800, July 2014

May 9, 2015

Michael Dwinnell  
4420 Mendenhall  
Dallas TX 75244

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Please call me if you have any questions.

Sincerely,

*Brian Wood*  
Brian Wood

EXHIBIT K

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Sent To: MICHAEL DWINNELL  
Street & Apt. No., or PO Box No.:  
City, State, ZIP+4: Dallas

May 9, 2015

Vanguard Resources Inc.  
4308 Royal Ridge  
Dallas TX 75229

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Please call me if you have any questions.

Sincerely,

*Brian Wood*  
Brian Wood

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Total Postage & Fees	\$	

Sent To: VANGUARD  
Street & Apt. No., or PO Box No.:  
City, State, ZIP+4: Dallas



May 9, 2015

Marbob Energy Corp.  
 c/o Concho Resources  
 600 W. Illinois Ave.  
 Midland TX 79701

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Sincerely,

*Brian Wood*

Brian Wood

EXHIBIT K

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MAY-9-2015  
 87552

Sent To MARBOR  
 Street & Apt. No.,  
 or PO Box No.  
 City, State, ZIP+4 MIDLAND

See Reverse for Instructions

May 9, 2015

Yates Petroleum Corp.  
 105 S. 4th St.  
 Artesia NM 88210

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Sincerely,

*Brian Wood*

Brian Wood

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Sent To YATES  
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 City, State, ZIP+4 ARTESIA

## Jones, William V, EMNRD

---

**From:** Brian Wood <brian@permitswest.com>  
**Sent:** Tuesday, August 18, 2015 7:50 AM  
**To:** Jones, William V, EMNRD  
**Subject:** Re: PMX application from Apache: Empire Abo Unit Well No. 5 30-015-00839

They are still interested.

No protests received by me.

I'll check on logs.

On Aug 17, 2015, at 6:11 PM, Jones, William V, EMNRD wrote:

Hello Brian,  
How goes it?

Apparently we received this May 11, 2015 – I found it in another folder and drafted up a permit.

Is Apache still interested in this permit?  
Have you or Apache received any protests?

There are no logs in our files for this well.  
Are there any logs on this well they could send copies to Artesia district office?

Regards,

<image003.jpg> **William V. Jones, P.E., District IV Supervisor**  
Oil Conservation Division <http://www.emnrd.state.nm.us/ocd/>  
1220 South St. Francis Drive, Santa Fe, NM 87505  
P: 505.476.3477 C: 505.419.1995



C-108 Review Checklist: Received 5/11/15 Add. Request: \_\_\_\_\_ Reply Date: \_\_\_\_\_ Suspended: \_\_\_\_\_ [Ver 14]

PERMIT TYPE: WFX (PMX) SWD Number: 275 Permit Date: 8/17/15 Legacy Permits/Orders: R-4549  
Case 4953

Well No. \_\_\_\_\_ Well Name(s): EMPIRE ABO UNIT #5

API: 30-0 15-00839 Spud Date: \_\_\_\_\_ New or Old: \_\_\_\_\_ (UIC Class II Primacy 03/07/1982)

Footages 330 FSL / 990 FWL Lot \_\_\_\_\_ or Unit M Sec 9 Tsp 18 S Rge 27E County EDDY

General Location: \_\_\_\_\_ Pool: EMPIRE ABO (22040) Pool No.: 2

BLM 100K Map: \_\_\_\_\_ Operator: APACHE CORP OGRID: 873 Contact: Brian Wood

COMPLIANCE RULE 5.9: Total Wells: 3025 Inactive: 1 Fincl Assur: OK Compl. Order? \_\_\_\_\_ IS 5.9 OK? \_\_\_\_\_ Date: 8/17/15

WELL FILE REVIEWED ☒ Current Status: Productive

WELL DIAGRAMS: NEW: Proposed ☐ or RE-ENTER: Before Conv. ☒ After Conv. ☐ Logs in Imaging: ☒

Planned Rehab Work to Well: \_\_\_\_\_

Well Construction Details		Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Sx or Cf	Cement Top and Determination Method
Planned _____ or Existing _____ Surface		<u>11 - 8 5/8</u>		<u>800SX</u>	<u>CRC</u>
Planned _____ or Existing _____ Interm/Prod					
Planned _____ or Existing _____ Interm/Prod					
Planned _____ or Existing _____ Prod/Liner		<u>7 7/8 - 4 1/2</u>		<u>1050 SX</u>	<u>900 TS.</u>
Planned _____ or Existing _____ Liner					
Planned _____ or Existing _____ OH <u>(PERF)</u>					

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.			
Confining Unit: Litho. Struc. Por.	<u>5258</u>	<u>ABO</u>	<input checked="" type="checkbox"/>
Proposed Inj Interval TOP:	<u>5378</u>	<u>ABO</u>	
Proposed Inj Interval BOTTOM:	<u>5674</u>	<u>"</u>	
Confining Unit: Litho. Struc. Por.			
Adjacent Unit: Litho. Struc. Por.			

Completion/Operation Details:	
Drilled TD <u>5768</u>	PBTD <u>5740</u>
NEW TD _____	NEW PBTD _____
NEW Open Hole <input type="checkbox"/> or NEW Perfs <input type="checkbox"/>	
Tubing Size <u>2 1/8</u> in. Inter Coated? <input checked="" type="checkbox"/>	
Proposed Packer Depth _____ ft	
Min. Packer Depth _____ (100-ft limit)	
Proposed Max. Surface Press. _____ psi	
Admin. Inj. Press. <u>1015</u> (0.2 psi per ft)	

**AOR: Hydrologic and Geologic Information**

POTASH: R-111-P ☐ Noticed? \_\_\_\_\_ BLM Sec Ord ☐ WIPP ☐ Noticed? \_\_\_\_\_ SALT/SALADO T: \_\_\_\_\_ B: \_\_\_\_\_ CLIFF HOUSE \_\_\_\_\_

FRESH WATER: Aquifer \_\_\_\_\_ Max Depth 350 HYDRO AFFIRM STATEMENT By Qualified Person ☒

NMOSE Basin: \_\_\_\_\_ CAPITAN REEF: thru ☐ adj ☐ NA ☐ No. Wells within 1-Mile Radius? ☐ FW Analysis ☐

Disposal Fluid: Formation Source(s) ABO Analysis? ☒ On Lease ☒ Operator Only ☒ or Commercial ☐

Disposal Int: Inject Rate (Avg/Max BWPD): \_\_\_\_\_ Protectable Waters? \_\_\_\_\_ Source: \_\_\_\_\_ System: Closed ☐ or Open ☐

HC Potential: Producing Interval? \_\_\_\_\_ Formerly Producing? \_\_\_\_\_ Method: Logs/DST/P&A/Other \_\_\_\_\_ 2-Mile Radius Pool Map ☐

AOR Wells: 1/2-M Radius Map? ☒ Well List? ☒ Total No. Wells Penetrating Interval: 13 Horizontals? \_\_\_\_\_

Penetrating Wells: No. Active Wells 7 Num Repairs? ☐ on which well(s)? \_\_\_\_\_ Diagrams? \_\_\_\_\_

Penetrating Wells: No. P&A Wells 6 Num Repairs? ☐ on which well(s)? \_\_\_\_\_ Diagrams? ☒

NOTICE: Newspaper Date 4/30/16 Mineral Owner SLO/BLM Surface Owner BLM N. Date 5/9

RULE 26.7(A): Identified Tracts? \_\_\_\_\_ Affected Persons: See APP. N. Date 5/9

Permit Conditions: Issues: was G2 in before (94-95) See pmx 272  
AOR extends to outside EAL to well.