



SUSPENSE	ENGINEER <i>TW</i>	LOGGED IN <i>2.14.11</i>	TYPE <i>WFX</i>	APP NO. <i>PTG-W 1104533166</i>
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NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505

Apache Corp.

ABOVE THIS LINE FOR DIVISION USE ONLY

ADMINISTRATIVE APPLICATION CHECKLIST

Northeast Drinkard Unit

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]

#165
30-025-39915
#168
30-025-39918

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

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

Apache Corporation's
 Northeast Drinkard Unit #168
 30-025-39918

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

Lea
State

[D] Other: Specify _____

[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

[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.

Print or Type Name

Signature

Title

Date

BRIAN WOOD
 (505) 466-8120
 FAX 466-9682

Brian Wood

CONSULTANT

2-11-11

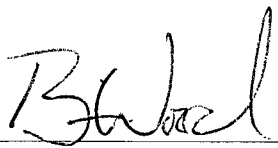
e-mail Address

brian@permitswest.com

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: YES Secondary Recovery _____ Pressure Maintenance _____ Disposal _____ Storage _____
Application qualifies for administrative approval? XXX Yes _____ No
- II. OPERATOR: APACHE CORPORATION

ADDRESS: 303 VETERANS AIRPARK 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? _____ Yes XXX No (not a vertical or horizontal expansion, just infill)
If yes, give the Division order number authorizing the project: R-8541 ✓
- 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: **NORTHEAST DRINKARD UNIT #168** ✓
 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: FEBRUARY 5, 2011
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.

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 CORPORATION

WELL NAME & NUMBER: NORTHEAST DRINKARD UNIT #168

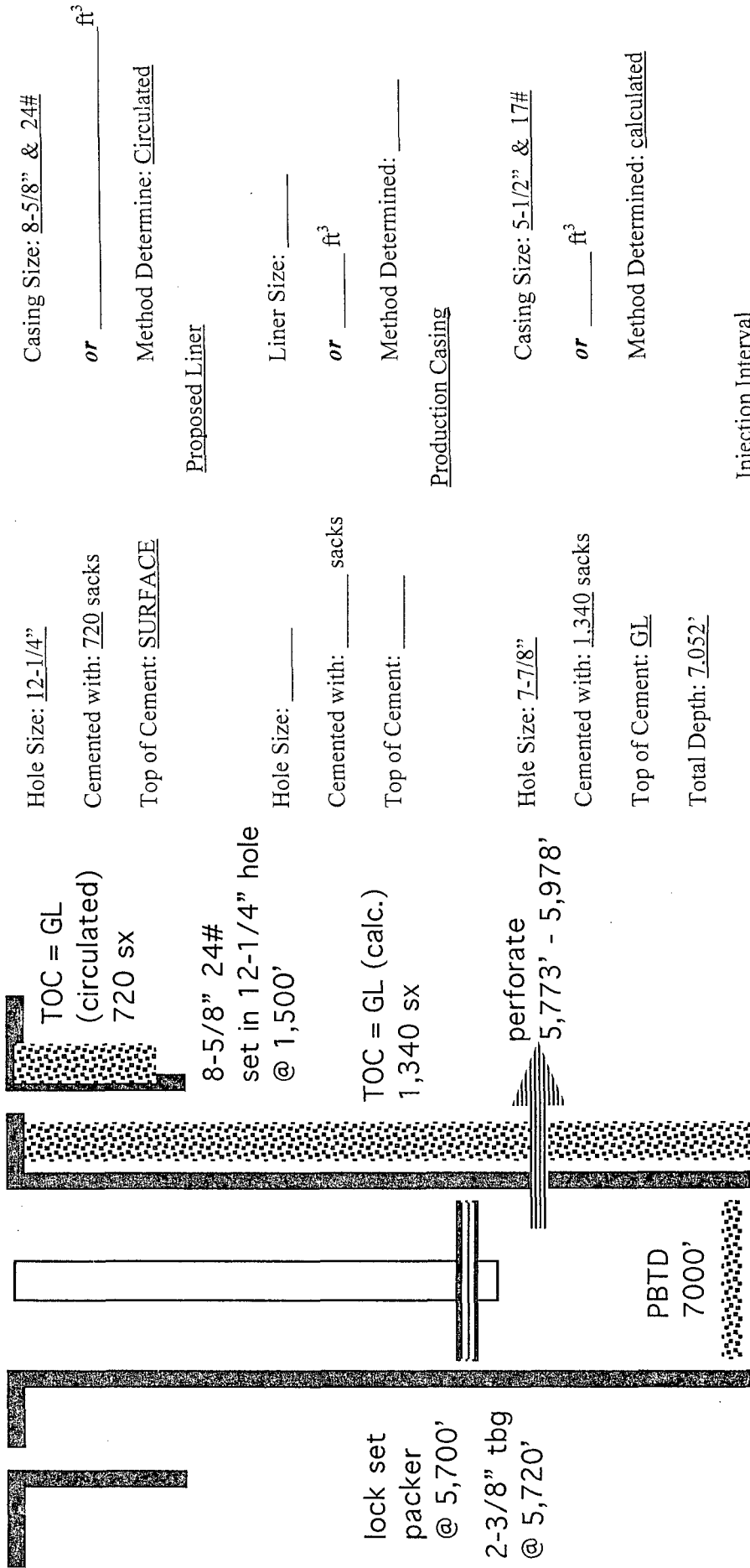
WELL LOCATION: 1970' FNL & 1125' FWL
FOOTAGE LOCATION

UNIT LETTER

2 SECTION 21 S TOWNSHIP 37 E RANGE

WELLBORE SCHEMATIC

(not to scale)



Injection Interval

From 5,773 feet To 5,978 feet
(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEETTubing Size: 2-3/8"Lining Material: PlasticType of Packer: LOCK SET OR ITS EQUIVALENTPacker Setting Depth: 5.720' (WITHIN 73' OF THE HIGHEST PROPOSED PERFORATION @ 5.773')

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

Additional Data

1. Is this a new well drilled for injection? XXX Yes ___ No

If no, for what purpose was the well originally drilled? (IT WAS PERMITTED & APPROVED AS AN OIL WELL, BUT IT WAS NEVER COMPLETED AS AN OIL WELL).

2. Name of the Injection Formation: BLINEBRY

3. Name of Field or Pool (if applicable): EUNICE; BLI-TU-DR. NORTH (POOL CODE: 22900)

4. Has the well ever been perforated in any other zone(s)? NO List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

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

OVER: GRAYBRUG (3.854')

UNDER: TUBB (6.290'), DRINKARD (6.620'), ABO (6.850'), HARE; SIMPSON (8.000')

APACHE CORPORATION

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NORTHEAST DRINKARD UNIT #168

WATER INJECTION WELL APPLICATION

1970' FNL & 1125' FWL SEC. 2, T. 21 S., R. 37 E.

LEA COUNTY, NEW MEXICO

API 30-025-39918

I. Purpose is to complete an already drilled, but not yet perforated, well as a water injection well to increase oil recovery. The well will inject into the Blinbry, which is part of the Eunice; Blinbry-Tubb-Drinkard, North Pool (aka, Eunice; BLI-TU-DR, North and pool code number = 22900). The discovery well was the Gulf Vivian #1 in 1944. The well and zone are part of the Northeast Drinkard Unit (Unit Number 300160, Case Number 9231, Order Number R-8540) which was established in 1987 by Shell. The unit was subsequently operated by Altura, and now, Apache. This is an active water flood.

II. Operator: Apache Corporation (OGRID #873)
Operator phone number: (432) 818-1167
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: New Mexico State Land Office lease B1-1613-0002
Lease Size: 194.74 acres (see Exhibit A for C-102 and map)
Closest Lease Line: 601'
Lease Area: Lots 3 - 6 & 13, Section 2, T. 21 S., R. 37 E.
Unit Size: 4,938 acres
Closest Unit Line: 1,970'
Unit Area:

T. 21 S., R. 37 E.

Section 2: all

Section 3: all

Section 4: Lots 1, 8, 9, & 16

Section 10: all

Section 11: SW4

Section 14: NW4

Section 15: all

Section 22: all

Section 23: all

- A. (2) Surface casing (8-5/8" and 24#) was set at 1,500' in a 12-1/4" hole. Cement was circulated to the surface with ≈ 720 sacks. Lead was 520 sacks Class C mixed at 13.5 pounds per gallon and 1.75 cubic feet per sack. Tail was 200 sacks Class C mixed at 14.8 pounds per gallon and 1.34 cubic feet per sack. See attached well bore profile on Form C-108 for more hole, casing, and cement details.

Production casing (5-1/2" and 17#) is set at 7,052' (TD) in a 7-7/8" hole (PBSD = 7,000'). Cement top is the surface according to calculations. Lead was 1,020 sacks 35:65 Poz mixed at 12.8 pounds per gallon and 1.9 cubic feet per sack. Tail was 320 sacks 50:50 poz mixed at 14.2 pounds per gallon and 1.3 cubic feet per sack. See attached well bore profile on Form C-108 and histories for more hole, casing, and cement details.

Mechanical integrity of the casing was assured by hydraulically pressure testing to 500 psi for 30 minutes.

- A. (3) Tubing has not yet been installed. Specifications will be 2-3/8", J-55, 4.7#, and internally plastic coated. Setting depth will be $\approx 5,720'$. (Disposal interval will be $\approx 5,773'$ to $\approx 5,978'$.)
- A. (4) A lock set injection packer will be set at $\approx 5,700'$ (73' above the highest proposed perforation of $\approx 5,773'$).
- B. (1) Injection zone will be the grain supported packstone member of the Blinbry dolomite. The zone is part of the Eunice; Blinbry-Tubb-Drinkard, North Pool (NMOCD pool code number = 22900). Estimated fracture gradient is ≈ 0.56 psi per foot.
- B. (2) Injection interval will be $\approx 5,773'$ to $\approx 5,978'$. The well is a cased hole. See attached well bore profile for more perforation information.

- B. (3) The well was initially planned as an oil well (see Form C-101 (APD) dated 9-22-10). The well has been drilled, but not yet perforated. It will be completed as a water injection well after approval.
- B. (4) The well has not yet been perforated. It will be perforated from $\approx 5,773'$ to $\approx 5,978'$ with two shots per foot. Shot diameter = 0.40".
- B. (5) The next higher potential oil or gas zone is the Grayburg. It is productive (24 wells) in Section 3. There is no Grayburg production in Section 2. The Grayburg is part of the Penrose Skelly; Grayburg (NMOCD pool code number = 50350). Its estimated bottom is at $\approx 4,104'$. Injection will occur in the Blinebry from $\approx 5,773'$ to $\approx 5,978'$. There will be a $\approx 1,669'$ interval between the bottom of the Grayburg and the highest perforation.

The next lower oil or gas zone is the Tubb. Its estimated top is at $\approx 6,290'$. Injection will occur in the Blinebry from $\approx 5,773'$ to $\approx 5,978'$. There will be a $\approx 312'$ interval between lowest perforation and the top of the Tubb. The Tubb is unitized with the Blinebry. The Tubb is productive in Section 2. The Blinebry is part of the Eunice; Blinebry-Tubb-Drinkard, North Pool (NMOCD pool code number = 22900).

Beneath the Tubb is the productive Drinkard (top at $\approx 6,620'$). The Drinkard is unitized with the Blinebry and Tubb. The Drinkard is productive in Section 2. The Drinkard is part of the Eunice; Blinebry-Tubb-Drinkard, North Pool (NMOCD pool code number = 22900).

Beneath the Drinkard is the Wantz; Abo (Pool Code = 62700). Its top is at 6,868'. There are four Abo producers in Section 2. All four Abo producing wells are operated by Apache. The Abo is not part of the Northeast Drinkard Unit. There will be a $\approx 872'$ interval between the lowest perforation and the top of the Abo (6,850'). The Hare; Simpson is deeper than the Abo and is productive (9 wells) in Section 2.

NORTHEAST DRINKARD UNIT #168

WATER INJECTION WELL APPLICATION

1970' FNL & 1125' FWL SEC. 2, T. 21 S., R. 37 E.

LEA COUNTY, NEW MEXICO

API 30-025-39918

IV. This is not a horizontal or vertical expansion of an existing injection project. The case file for the unit approval (R-8540) includes a discussion of the Blinbry water flood. The water flood (R-8541) was approved at the same time in 1987.

There have been five waterflood expansions (WFX) since then (WFX-740, WFX-752, WFX-759, WFX-774, and WFX-784). Closest unit boundary is 1,970' north. There are 14 active injection wells within a half mile radius and within the unit. The 14 injection wells are in all four directions (see Exhibit B).

V. Exhibit B shows all 44 existing wells (5 P & A + 13 water injection wells + 26 producing oil wells) within a half mile radius, regardless of depth. One of the 13 injection wells (#165) has been drilled, but has not yet been perforated.

Exhibit C shows all 410 existing wells (286 oil or gas producing wells + 91 injection or disposal wells + 28 P & A wells + 5 water wells) within a two mile radius.

Exhibit D shows all leases (BLM, fee, and State) within a one half mile radius. Details on the leases within a one half mile radius are:

<u>Area</u>	<u>Lessor</u>	<u>Lease Number</u>	<u>Operator</u>
Lots 3 -6 & 13 Sec. 2	NMSLO	B1-1613-0002	Apache
Lots 2, 7, & 10 Sec. 2	NMSLO	B0-1732-0001	Apache
Lots 11, 12, & 14 Sec. 2	NMSLO	B0-9745-0004	Apache
Lots 1, 2, 7, 8, 15, & 16 Sec. 3	BLM	NMNM-2512	Apache
Lots 9 & 10 Sec. 3	fee	fee	Apache
S2SW4 & SWSE Sec. 34*	BLM	NMLC-063458	ConocoPhillips

*only tract within the area of review, but outside the Northeast Drinkard Unit

Exhibit E shows all lessors (BLM, fee, and state) within a two mile radius. Note that the ranges are offset from the normal pattern (T. 20 S., R. 38 E. is north of T. 21 S., R. 37 E.).

NORTHEAST DRINKARD UNIT #168

WATER INJECTION WELL APPLICATION

1970' FNL & 1125' FWL SEC. 2, T. 21 S., R. 37 E.

LEA COUNTY, NEW MEXICO

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VI. There are 44 existing wells (5 plugged wells + 13 water injection wells + 28 producing oil wells) which are within a half mile and which penetrated the Blinbry. A table abstracting the 44 wells' construction details and history is in Exhibit F. Schematics of the five plugged wells are also included in Appendix F. By section, the 44 wells and their distances from the #168 are:

OPERATOR	WELL	API # 30-025-	2-T21S-R37E	ZONE(S)	STATUS	TD	DISTANCE
Apache	NEDU 116	06346	5790 FS & 660 FW	EBTDN	P & A	6010	471'
Apache	NEDU 115	06340	5940 FS & 660 FW	EBTDN	WIW	8620	472'
Apache	NEDU 133	34600	1458 FN & 1098 FW	EBTDN	OW	6980	511'
Apache	NEDU 118	06347	1973 FN & 1650 FW	EBTDN	P & A	6150	526'
Apache	NEDU 119	06343	5610 FS & 1650 FW	EBTDN	P & A	6850	587'
Apache	NEDU 127	34426	2600 FN & 1200 FW	EBTDN	OW	6980	639'
Apache	NEDU 145	35903	1980 FN & 1850 FW	EBTDN	WIW	7023	726'
Apache	NEDU 167	39917	2545 FN & 660 FW	EBTDN	OW	7075	740'
Apache	NEDU 166	39916	1350 FN & 600 FW	EBTDN	OW	7050	813'
Apache	NEDU 165	39915	1800 FN & 125 FW	EBTDN	WIW**	7054	1018'
Apache	NEDU 148	39039	2840 FN & 1720 FW	EBTDN	no spud	7025	1061'
Apache	NEDU 126	34415	2500 FN & 130 FW	EBTDN	OW	6940	1130'
Apache	NEDU 114	06344	906 FN & 660 FW	EBTDN	WIW	6896	1163'
Apache	NEDU 117	06345	921 FN & 1650 FW	EBTDN	WIW	6996	1173'
Apache	NEDU 132	34601	1339 FN & 130 FW	EBTDN*	OW	6970	1182'
Apache	NEDU 135	34796	1450 FN & 2280 FW	EBTDN	OW	6610	1267'
Apache	NEDU 213	06368	4620 FS & 660 FW	EBTDN	OW	6760	1338'
Apache	NEDU 217	06485	2886 FN & 2303 FW	EBTDN	OW	5952	1501'
Apache	State 2-11	06377	3376 FN & 330 FW	Wantz; Abo	P & A	8015	1619'
Apache	NEDU 141	35469	330 FN & 1200 FW	EBTDN	OW	6990	1643'
Apache	State 2-8	06374	3546 FN & 660 FW	Hare; Simpson	OW	8156	1649'
Apache	NEDU 216	06483	3546 FN & 1650 FW	EBTDN	WIW	8147	1670'
Apache	NEDU 218	06484	3546 FN & 1700 FW	EBTDN	WIW	8000	1688'
Apache	NEDU 121	06354	2220 FN & 2307 FE	EBTDN	WIW	5950	1845'
Apache	NEDU 140	35468	330 FN & 160 FW	EBTDN	OW	7000	1911'

APACHE CORPORATION
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Apache	NEDU 142	35470	330 FN & 2200 FW	EBTDN	OW	6850	1961'
Apache	NEDU 248	39227	3550 FN & 2310 FW	EBTDN	no spud	7050	1985'
Apache	NEDU 224	06351	4303 FS & 2317 FE	EBTDN	WIW	8700	2039'
Apache	NEDU 220	06358	2886 FN & 2307 FE	EBTDN	OW	5975	2047'
Apache	NEDU 231	34411	3800 FS & 1200 FW	EBTDN	OW	6940	2077'
Apache	NEDU 120	06357	900 FN & 2310 FE	EBTDN	OW	5995	2111'
Apache	NEDU 230	34412	3677 FS & 135 FW	EBTDN	OW	6930	2411'
Apache	NEDU 136	34882	1450 FN & 1700 FE	EBTDN	OW	6370	2487'
Apache	NEDU 247	38508	3465 FS & 1775 FW	EBTDN	OW	7000'	2499'
Apache	NEDU 345	38507	330 FS & 300 FW	EBTDN	OW	6980	2550'
Apache	NEDU 235	34883	2800 FN & 1700 FE	EBTDN	OW	6370	2606'
Apache	NEDU 219	06486	3550 FS & 2300 FW	EBTDN	P & A	5956	2611'
Apache	NEDU 214	06491	3300 FS & 660 FW	EBTDN	WIW	6810	2619'

*Eunice; Blinebry-Tubb-Drinkard, North pool

**drilled as an oil well, application for conversion to WIW submitted 1-31-11

<u>OPERATOR</u>	<u>WELL</u>	<u>API #</u> <u>30-025-</u>	<u>3-T21S-R37E</u>	<u>ZONE(S)</u>	<u>STATUS</u>	<u>TD</u>	<u>DISTANCE</u>
Apache	NEDU 113	06496	1980 FN & 660 FE	EBTDN*	WIW	6830	1791s
Apache	NEDU 158	39440	2562 FN & 590 FE	EBTDN	OW	7020	1815'
Apache	Taylor Glen 3	06382	3546 FN & 330 FE	Wantz; Abo	OW	8224	2147'
Apache	NEDU 211	06381	4620 FS & 660 FE	EBTDN	WIW	6780	2183'
Apache	NEDU 112	06509	660 FN & 660 FE	EBTDN	WIW	6020	2222'
Apache	Taylor Glen 4	06383	3376 FN & 764 FE	Hare; Simpson	OW	8119	2356'
Apache	NEDU 131	34609	1253 FN & 1244 FE	EBTDN	OW	6990	2485'

*Eunice; Blinebry-Tubb-Drinkard, North pool

**Penrose Skelly; Grayburg & Wantz; Abo

<u>OPERATOR</u>	<u>WELL</u>	<u>API #</u> <u>30-025-</u>	<u>34-T20S-R38E</u>	<u>ZONE(S)</u>	<u>STATUS</u>	<u>TD</u>	<u>DISTANCE</u>
ConocoPhillips	Warren 12	07880	660 FS & 1980 FW	WBT	OW	6198	2634'

*Warren; Blinebry-Tubb Oil; Gas

NORTHEAST DRINKARD UNIT #168

WATER INJECTION WELL APPLICATION

1970' FNL & 1125' FWL SEC. 2, T. 21 S., R. 37 E.

LEA COUNTY, NEW MEXICO

API 30-025-39918

- VII. 1. Average injection rate will be ≈ 750 bwpd.
Maximum injection rate will be $\approx 1,000$ bwpd.
2. System will be closed. The well will be tied into the existing unit pipeline system. The system consists of a branched injection system with centrifugal injection pumps.
3. Average injection pressure will be $\approx 1,000$ psi
Maximum injection pressure will be $\approx 1,155$ psi ($= 0.2$ psi/foot $\times \approx 5,773'$ (highest perforation)).
4. Water source will be water pumped from existing $\approx 4,000'$ deep San Andres water supply wells plus produced water from Blinbry, Tubb, and Drinkard zones. The source water and produced water are collected in separate skim tanks. The two water streams (source and produced) are commingled in a storage tank before being piped to the injection wells. Commingling began in the 1970s. A comparison of analyses from the discharge pump and San Andres follows. The complete analyses are in Exhibit G.

	<u>Injection Pump Discharge</u>	<u>San Andres 919-S</u>
Anion/Cation Ratio	1.0	N/A
Barium	0.1 mg/l	0.38 mg/l
Bicarbonate	671.0 mg/l	562.0 mg/l
Calcium	1,099.0 mg/l	608.0 mg/l
Carbon Dioxide	80.0 ppm	80.0 ppm
Chloride	10,086.0 mg/l	6,200.0 mg/l
Hydrogen Sulfide	90.0 ppm	408.0 ppm
Iron	0.3 mg/l	0.0 mg/l
Magnesium	439.0 mg/l	244.0 mg/l
Manganese	N/A	0.01 mg/l
pH	7.5	6.49
Potassium	115.0 mg/l	N/A
Sodium	5,799.5 mg/l	3,909.0 mg/l
Strontium	28.0 mg/l	19.0 mg/l
Sulfate	2,465.0 mg/l	1,750.0 mg/l
Total Dissolved Solids	20,702.9 mg/l	13,273.0 mg/l

NORTHEAST DRINKARD UNIT #168

WATER INJECTION WELL APPLICATION

1970' FNL & 1125' FWL SEC. 2, T. 21 S., R. 37 E.

LEA COUNTY, NEW MEXICO

API 30-025-39918

5. The Blinebry currently produces in the unit. It is the goal of the project to increase production from the Blinebry. According to NMOCD records, at least 2,000 approved wells have targeted or will target the Blinebry in New Mexico.

VIII. The Unit is on the north end of a north-northwest to south-southeast trending anticline. It is part of the Penrose Skelly trend and parallels the west edge of the Central Basin Platform. Dips are $\approx 1^\circ$ to $\approx 2^\circ$. The Blinebry is $\approx 450'$ thick and consists of tan to gray dolomite. Nodular replacement and pore filling anhydrite are found in the dolomite. The reservoir portion of the Blinebry consists of grain supported packstone. Porosity is $\approx 9.75\%$. Permeability is ≈ 2.45 millidarcies.

There are or have been 191 Blinebry injection wells and over 1,800 Blinebry producing wells in the state. Adjacent to the Northeast Drinkard Unit are two other Blinebry water floods (the Apache operated West Blinebry Drinkard Unit and East Blinebry Drinkard Unit).

Formation tops are:

Quaternary = 0'
Rustler = 1,420'
Yates = 2,733'
Queen = 3,533'
Grayburg = 3,854'
San Andres = 4,105'
Glorieta = 5,360'
Blinebry = 5,720'
Tubb = 6,290'
Drinkard = 6,620'
Abo: 6,850'
Total Depth: 7,052'

No water well is within a 1 mile radius. This conclusion is based on a field inspection by foot and road (Exhibit H) and a review of the State Engineer's records. The closest water well is 6,077' east in Section 1 (Exhibit H). No

completion report has been filed. It is listed as a domestic water source. The deepest water well in T. 20 S., R. 38 E. or T. 21 S., R. 37 E. is 140' deep. The Ogallala Formation is not present. No existing underground drinking water sources are above or below the Blinebry within a one mile radius.

There will be >5,000' of vertical separation and the Rustler salt interval between the bottom of the only likely underground water source (Quaternary) and the top of the Blinebry.

Produced water has been injected or disposed into three zones above the Blinebry within T. 21 S., R. 37 E. and T. 20 S., R. 38 E. The five zones, from top to bottom, are the Grayburg, San Andres, and Glorieta.

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

X. Dual laterolog, micro laterolog, spectral gamma ray, compensated neutron, photo density, compensated sonic, integrated TT, and bore hole profile logs have been provided to the NMOCD.

XI. Based on a field inspection and a review of the State Engineer's records, there are no water wells within a one mile radius.

XII. Apache is not aware of any geologic or engineering data which may indicate the Blinebry is in hydrologic connection with any underground sources of water. This was attested to during sworn testimony (page 65, line 14, Order R-8540) presented in 1987. Indeed, no underground sources have been developed within a one mile radius. Over 190 injection or salt water disposal wells have been drilled into the Blinebry in the New Mexico portion of the Permian Basin. Previously approved Blinebry water flood expansions in the unit include:

WFX-740 (October 13, 1998)

WFX-752 (July 6, 1999)

APACHE CORPORATION
NORTHEAST DRINKARD UNIT #168
WATER INJECTION WELL APPLICATION
1970' FNL & 1125' FWL SEC. 2, T. 21 S., R. 37 E.
LEA COUNTY, NEW MEXICO

PAGE 10

API 30-025-39918

WFX-759 (May 8, 2000)
WFX-774 (June 7, 2001)
WFX-784 (October 29, 2002)

XIII. Notice (this application) has been sent (Exhibit I) to the surface owner (New Mexico State Land Office) and all leasehold operators (only Apache and ConocoPhillips) within a half mile.

A legal ad (see Exhibit J) was published on January 7, 2011.

DISTRICT I
1625 N FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410

DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39918	Pool Code 22900	Pool Name Eunice, Bli - Tu - Dri, North
Property Code 22503	Property Name NORTHEAST DRINKARD UNIT	Well Number 168
OGRIID No. 873	Operator Name APACHE CORPORATION	Elevation 3501'

Surface Location

UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
5	2	21-S	37-E		1970	NORTH	1125	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	D4 LOT 4	C3 LOT 3	B2 LOT 2	A1 LOT 1
	D5 LOT 5	C6 LOT 6	B7 LOT 7	A8 LOT 8
	D12 LOT 12	C11 LOT 11	B10 LOT 10	A9 LOT 9
	E LOT 13	F LOT 14	G LOT 15	H LOT 16
	L	K	J	I
M	N	O	P	

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION

Y=553758.6 N
X=868387.5 E

LAT.=32.516714° N
LONG.=103.138252° W

LAT.=32°31'00.17" N
LONG.=103°08'17.71" W

SCALE: 1"=2000'

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Sorina L. Flores 9/22/10
Signature Date

Sorina L. Flores
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat 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 belief.

AUGUST 2010
Date Surveyed
Signature & Seal of Professional Surveyor
3239
REGISTERED PROFESSIONAL SURVEYOR
Certificate No. GARY G. EIDSON 12841
RONALD J. EIDSON 3239

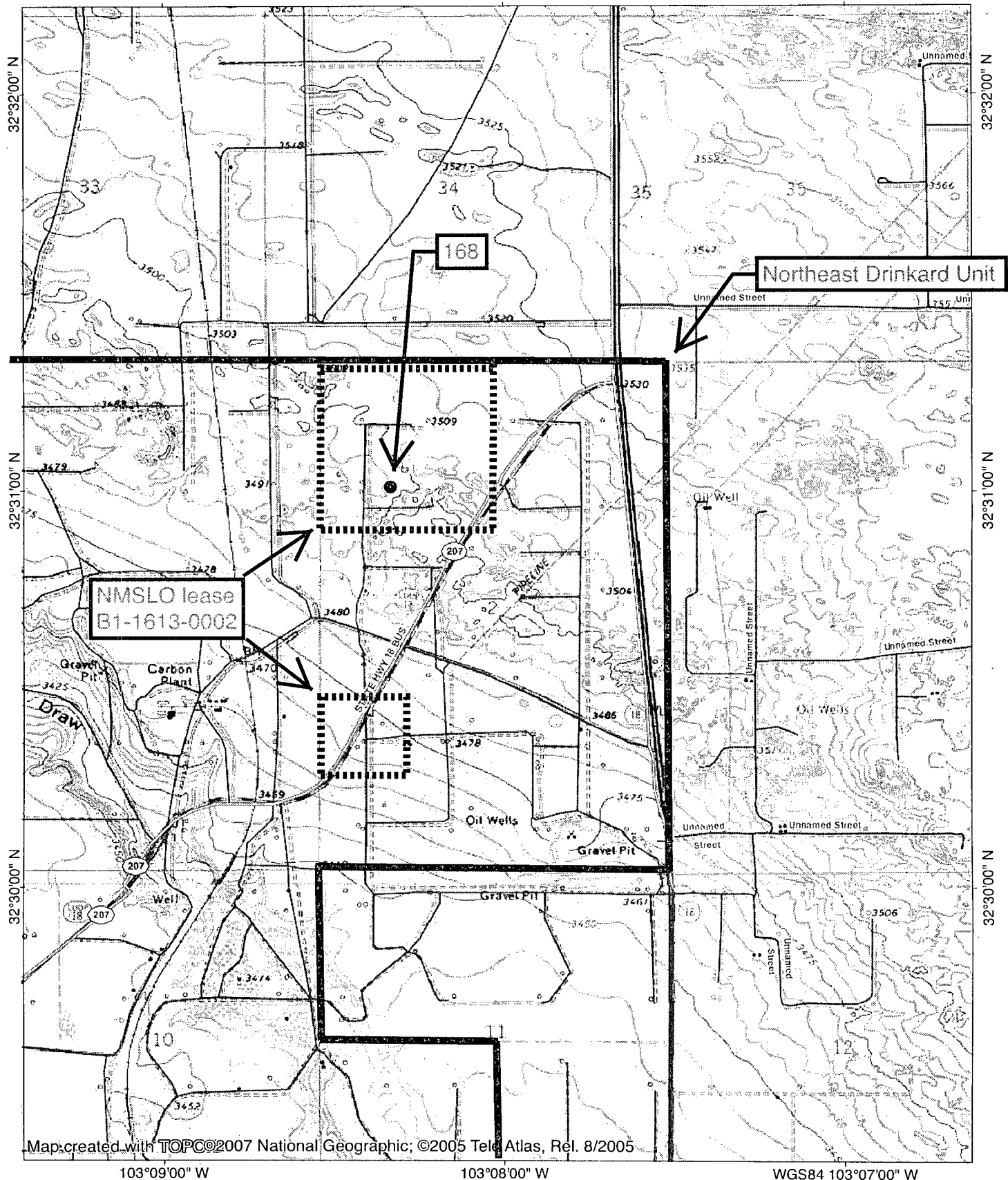
EXHIBIT A

TOPO! map printed on 12/22/10 from ".tpo"

103°09'00" W

103°08'00" W

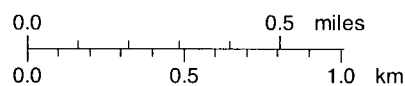
WGS84 103°07'00" W



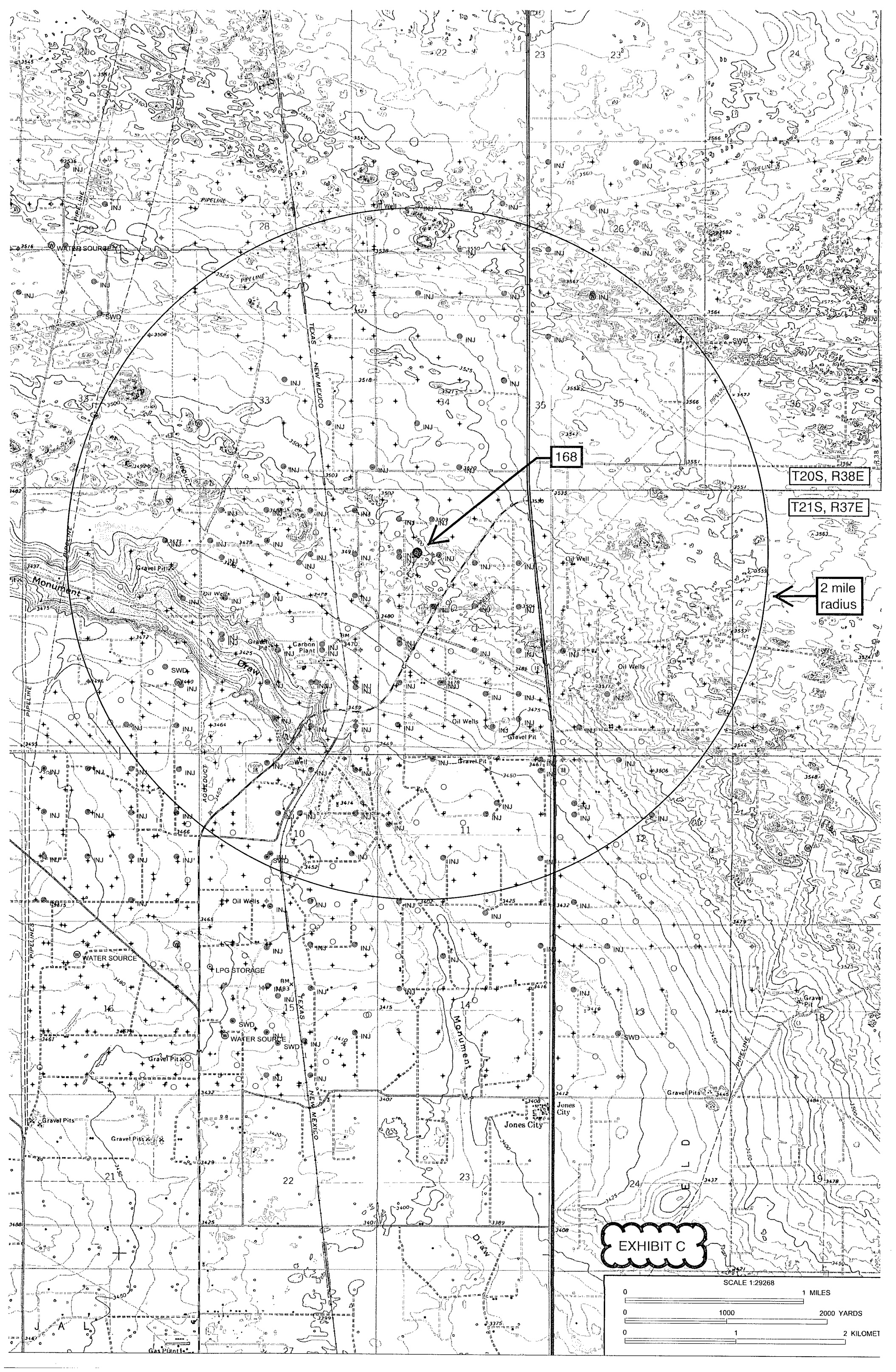
103°09'00" W

103°08'00" W

WGS84 103°07'00" W



TN MN
7.5°
12/22/10



T20S, R38E

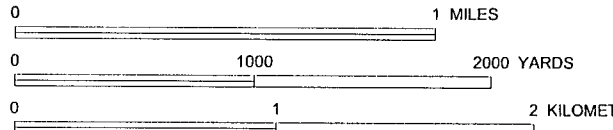
T21S, R37E

2 mile
radius

168

EXHIBIT C

SCALE 1:29268



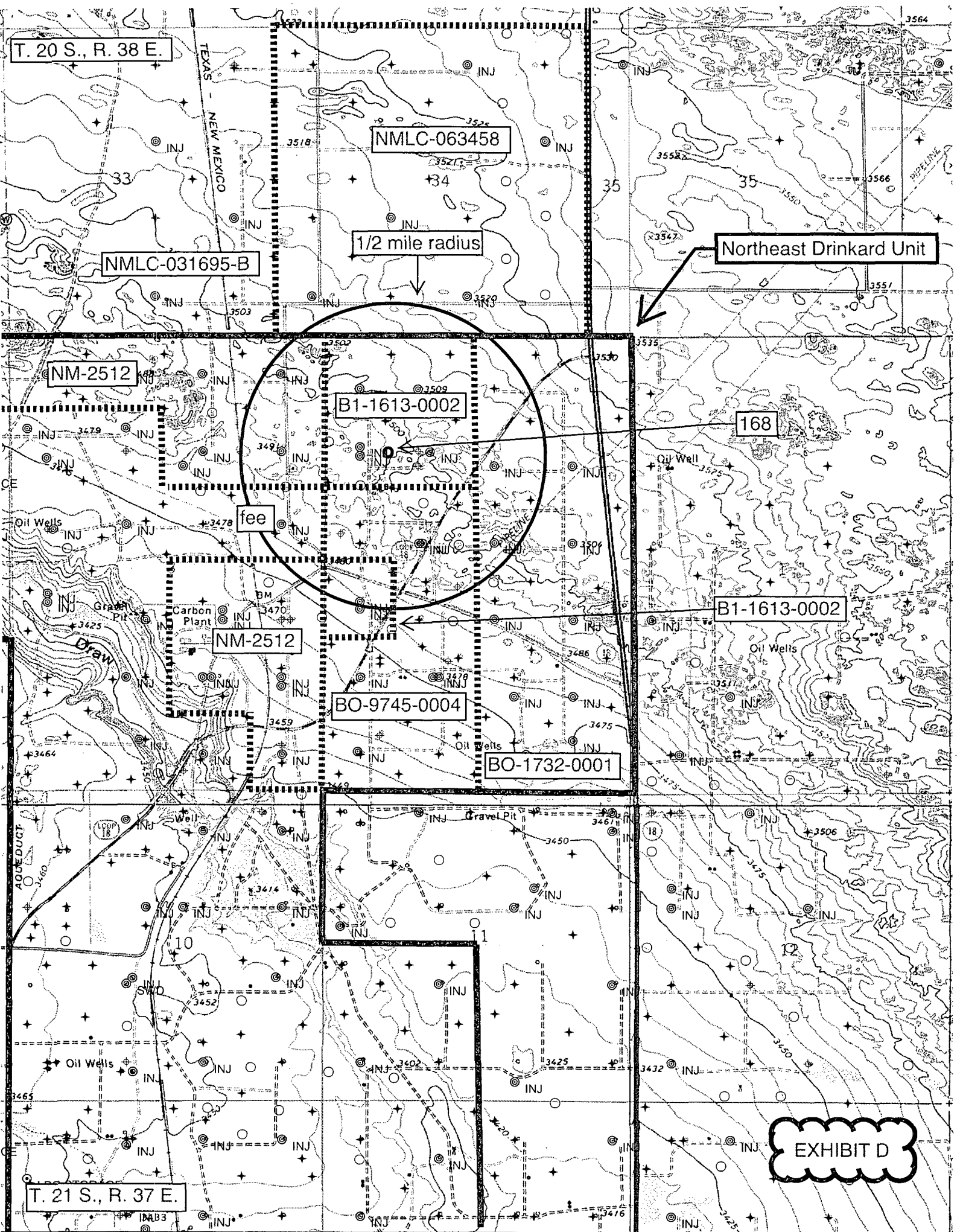
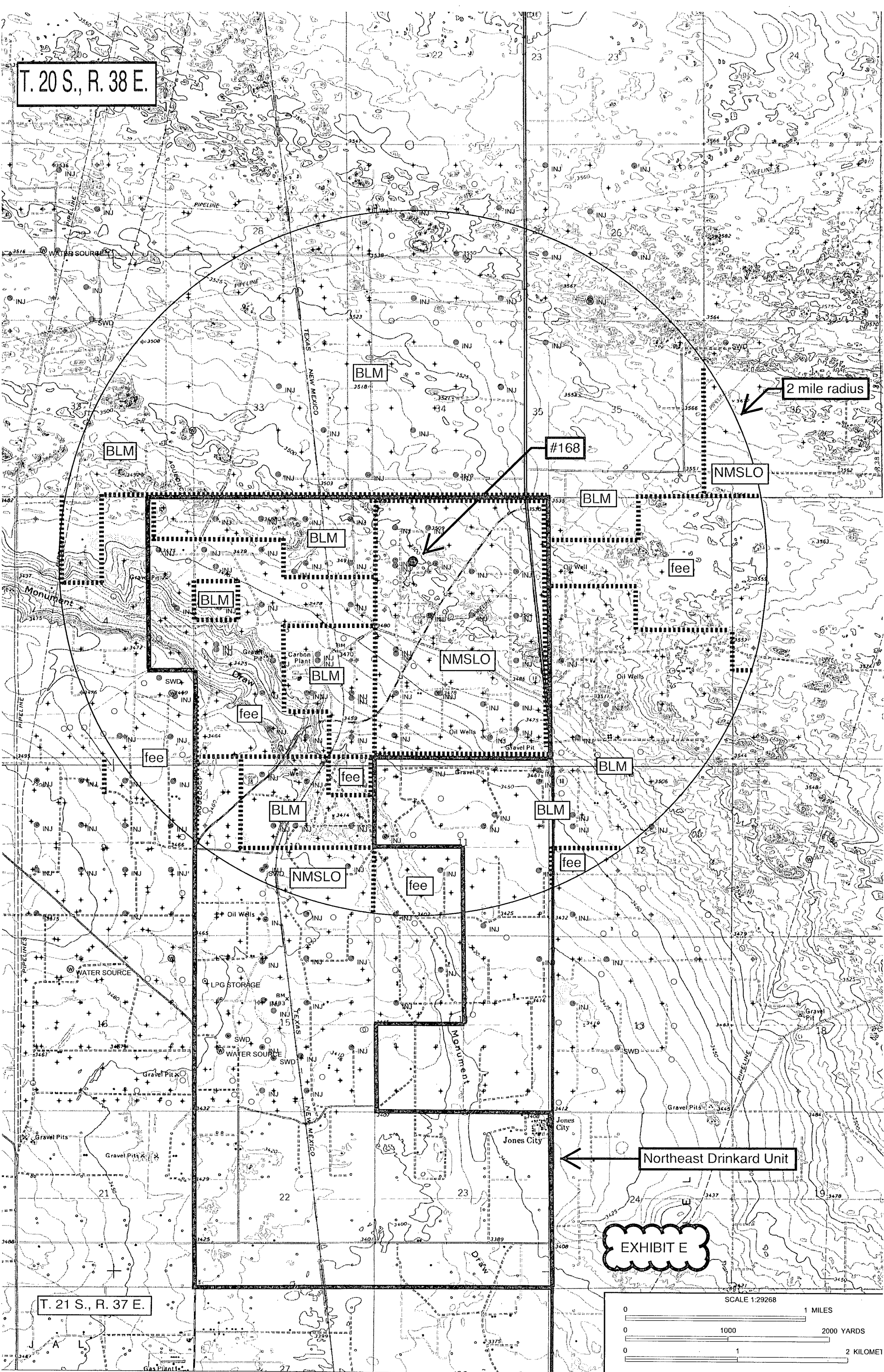


EXHIBIT D

T. 20 S., R. 38 E.



2 mile radius

#168

NMSLO

BLM

fee

NMSLO

BLM

BLM

fee

BLM

fee

NMSLO

fee

BLM

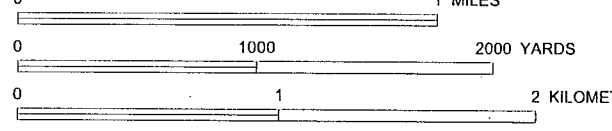
fee

Northeast Drinkard Unit

EXHIBIT E

T. 21 S., R. 37 E.

SCALE 1:29268

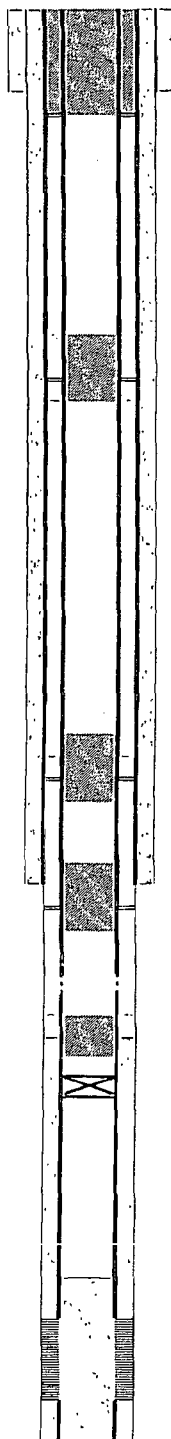


PLUGGED WELLBORE SKETCH **Apache Corporation**

Date February 1, 2008

RKB @ _____
 DF @ _____
 GL @ 3490'

Subarea	_____
Lease & Well No. :	<u>Northeast Drinkard Unit No. 116</u>
Legal Description	<u>5,790' FSL & 660' FWL, Section 2, T-21-S, R-37-E</u>
County	<u>Lea</u> State <u>New Mexico</u>
Field	<u>Eunice, Blinbry-Tubb-Drinkard North</u>
Date Spudded	_____
API Number	<u>30-025-06346</u>
Status	<u>Plugged 01/29/08</u>



17-1/4" Hole
 13-3/8" 48# csg @ 217' cmt'd w/ 225 sx, circ

Perforated & squeezed 73 sx C cmt 267' to surface

Perforated @ 1,550', unable to squeeze @ 2,000 psi, pumped balanced plug 1,606 - 1,382' TAGGED
 Top Salt @ 1,550'

Base Salt @ 2,542'
Perforated @ 2,645', unable to squeeze @ 2,000 psi, pumped 25 sx C cmt balanced plug 2,705 - 2,440' TAGGED

8-5/8" 32# csg @ 3,092' cmt'd w/ 2,100 sx, circ
Perforated @ 3,142', unable to squeeze @ 2,200 psi, pumped 25 sx C cmt balanced plug 3,203 - 2,980' TAGGED

casing leak 4,046 - 4,078' - sqz'd w/ 100 sx, 50 sx, & 410 sx
 25 sx C cmt 4,250 - 4,000'
 Circulated plugging mud from PBTD
 5-1/2" TOC @ 4,200' TS

CIBP set @ 4,270 w/ 2 sx cmt to 4,250

30 sx 5,781 - 5,500
 Blinbry Perfs
 5,792 - 5,832, 5,844 - 5,896, 5,935 - 5,954

30 sx 6010- 5,781
 7-7/8" hole
 5-1/2" 15.5# csg @ 6,010' cmt'd w/ 300 sx
 TOC @ 4,200 TS

PBTD @ 6,004'
 TD @ 6,010'



PLUGS SET 01/24/08 - 01/29/08

- 1) circulated plugging mud from PBTD
- 2) 25 sx C cmt 4,250 - 4,000'
- 3) Perforated @ 3,142', unable to establish rate @ 2,200 psi, pumped 25 sx C cmt 3,203 - 2,980' TAGGED
- 5) Perforated @ 2,645', unable to establish rate @ 2,000 psi, pumped 25 sx C cmt 2,705 - 2,440' TAGGED
- 6) Perforated @ 1,550', unable to establish rate @ 2,000 psi, pumped 25 sx C cmt 1,606 - 1,382' TAGGED
- 7) Perforated @ 267', squeezed 73 sx C cmt to surface, circulated cement to surface



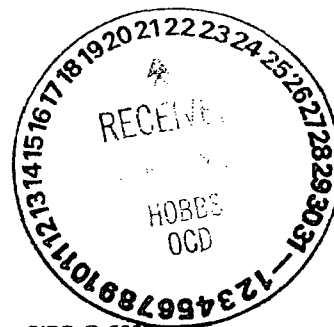
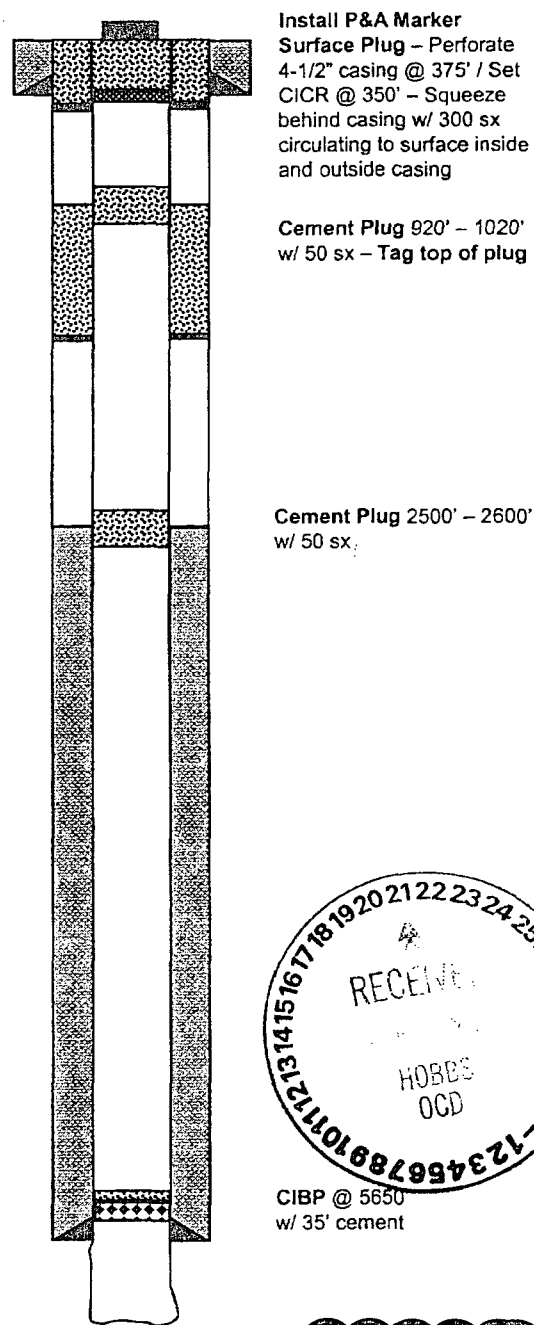
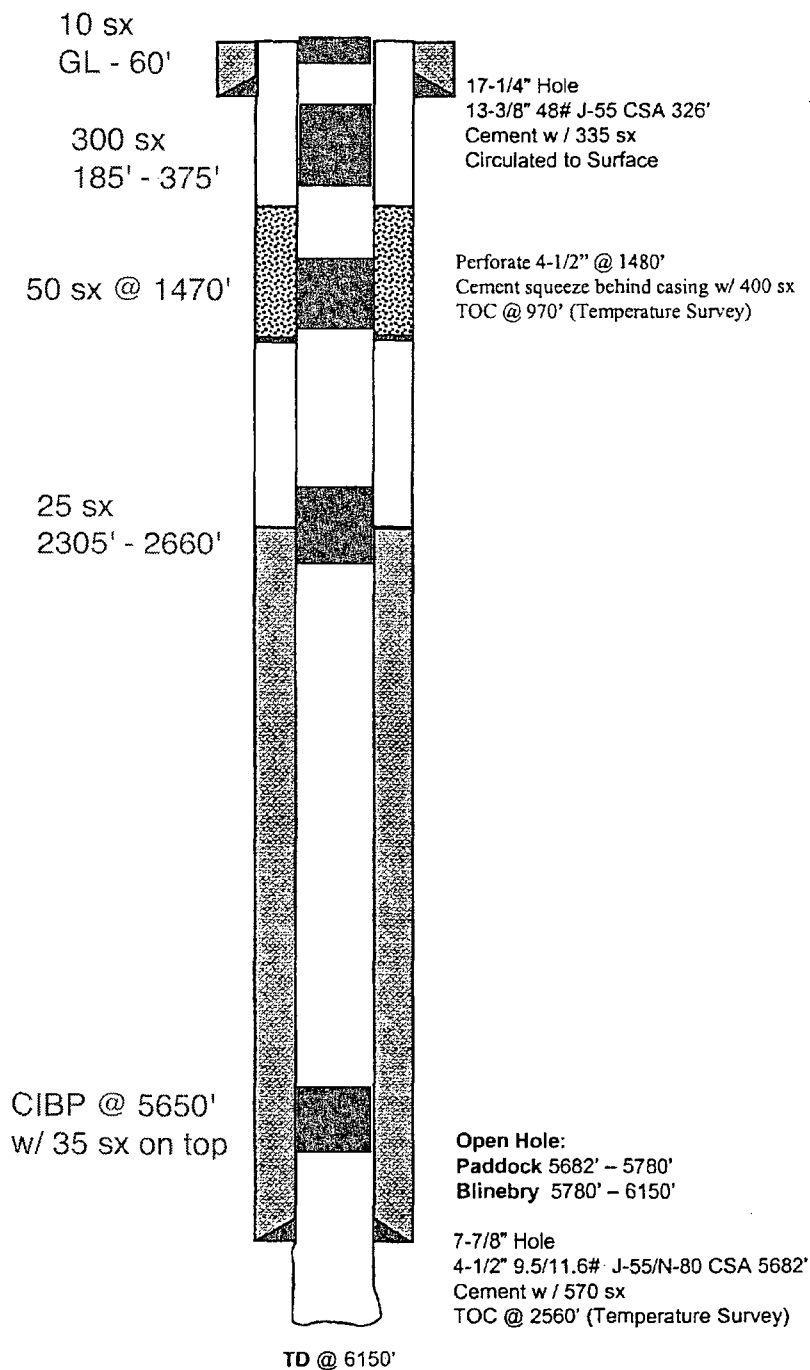
COUNTY/STATE:

Northeast Drinkard Unit No. 118
Eunice N., Blinebry-Tubb-Drinkard
1973' FNL & 1650' FWL
Unit F, Sec 2, T-21S, R-37E
Lea County, New Mexico

API No. 30-025-06347

AS PLUGGED

P&A Proposal



CIBP @ 5650
w/ 35' cement

EXHIBIT F

70 sx Class C
plug GL - 249'

P & A
6-30-05

NEDU 119

API - 30-025-06343
5610' FSL & 1650' FWL
Sec. 2 T-21S R-37E
Lea County, New Mexico
Spud Date - 1/18/1953



Completions

Date	Zone	Perfs
?	Glorietta	5375 - 5537 Sqzd
?	Blinbry	5805 - 5945 Sqzd
Jul-90	Blinbry	5966 - 6190
Jul-90	Tubb	6206 - 6280
Jul-90	Drinkard	6746 - 6832

Surface Casing (17-1/4" Hole)
13.375" 54# 0'-200' 225 sxs cmt. TOC-Surf Circ.

40 sx Class C plug 1341' - 1465'

40 sx Class C plug 2401' - 2557'

cut 5-1/2" casing @ 2,500' & POOH

Cement Cap @ 2590 12/93

CIBP @ 2625 12/93

Parted Casing @ 2653 9/91

Collapsed Casing @ 2653 - 2682 9/91

Swedged Through 9/91

Intermediate (11" Hole)
8.625" 32# 0'-3015' 1650 sxs cmt. TOC-Surf Circ.

Cement Cap @ 4293 Set 12/93

Backside Cmt @ 4715 Survey

Perfs @ 5375 - 5537 SQZD 1974

Perfs @ 5805 - 5945 SQZD 1974

Pea Grvl @ 5878 Set 12/93

Production Casing (7-7/8" Hole)
5.5" 15.5# 0'-5980' 225 sxs cmt. TOC-4715 Survey

Perfs @ 5966 - 6190

Backside Cmt @ 6000 Calc.

Perfs @ 6206 - 6280

Perfs @ 6746 - 6832

Production Liner (4-3/4" Hole)
3.5" 9.3# 5955'-6850' 75 sxs cmt. TOC-6000 Calc.

EXHIBIT F

Created by
CM 1/25/2005

Apache's
 State Section 2 #11
 API 30-025-06377
 3376 FSL & 330 FWL 2-21s-37e
 Spud 1-12-52 (as oil well) and Plug 4-10-02 (as oil well)

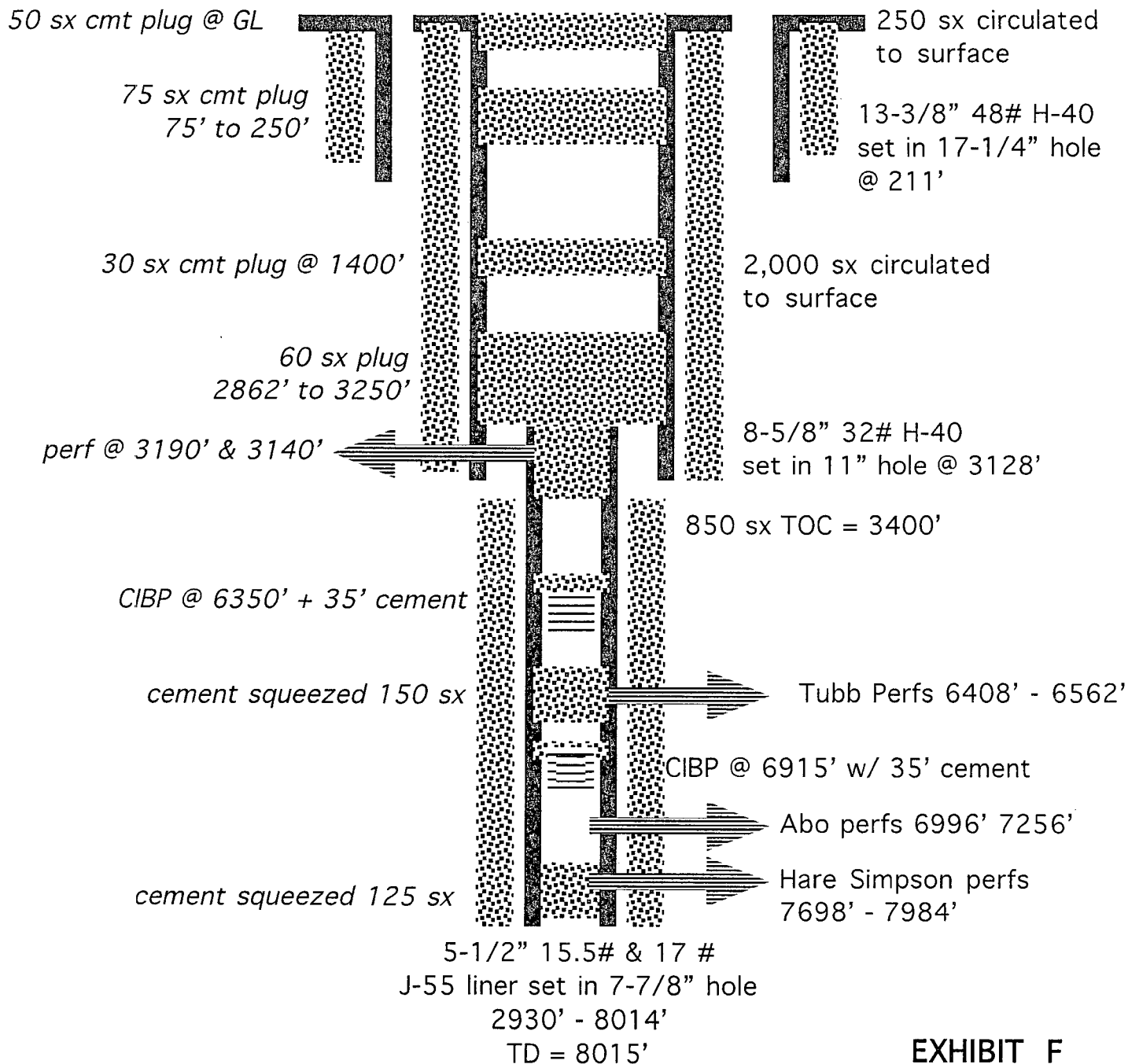


EXHIBIT F

(not to scale)



LEASE NAME	NORTHEAST DRINKARD UNIT
WELL #	219
API #	30-025-06486
COUNTY	LEA, NM

WELL BORE SKETCH

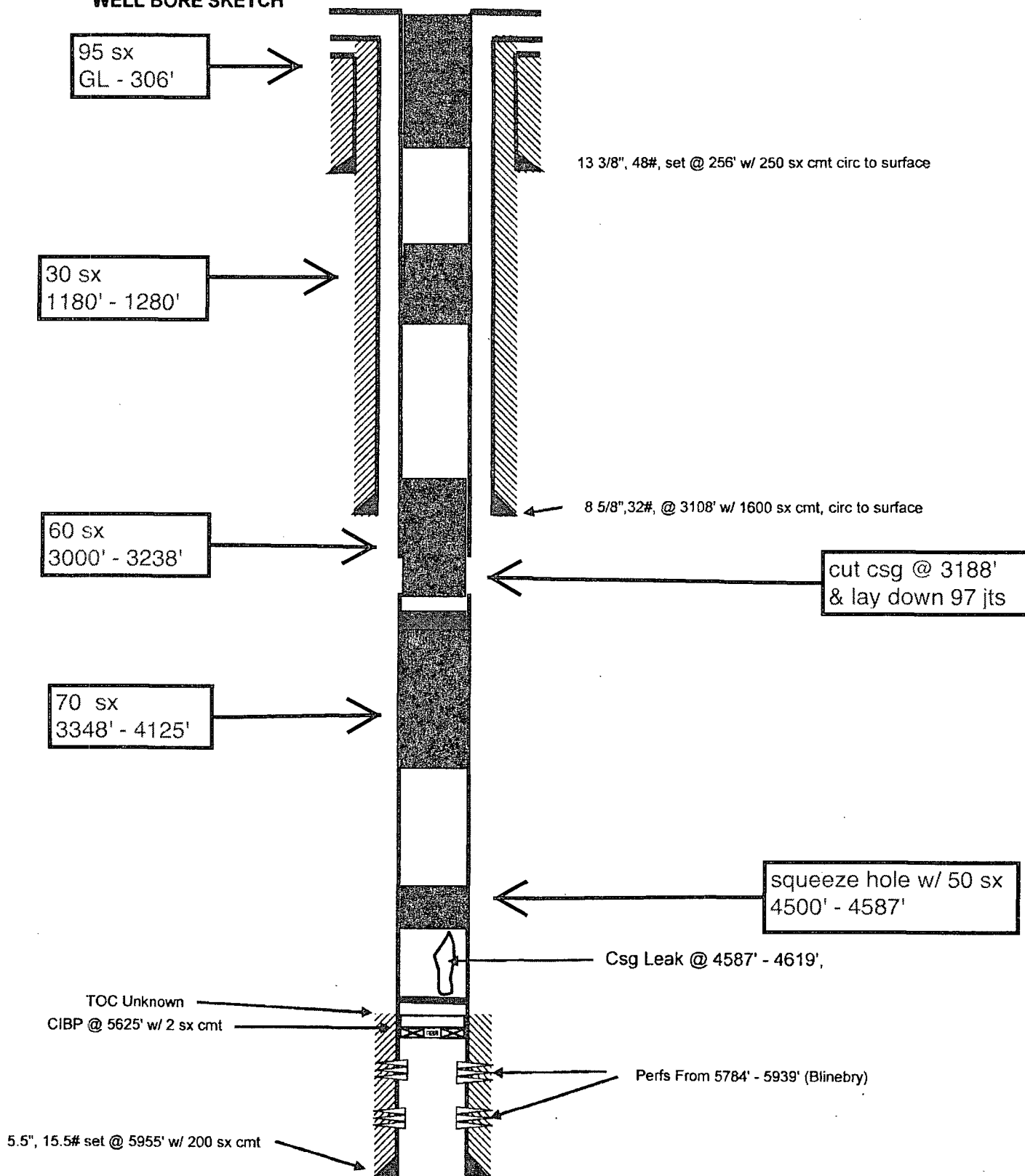


EXHIBIT F

WELL	API 30-025-	SPUD	STATUS	TD	HOLE O. D.	CASING O. D.	SET @	SX CEMENT	TYPE	TOC	METH DET	POOL
2-21S-37E												
NEDU 116	06346	12/20/55	P & A 1/28/08	6,010	17.25	13.375	217	225	Halliburton	GL	circ.	EBTDN
					11	8.625	3092	2200	50/50 & neat	GL	circ.	
					7.875	5.5	6010	300	50/50 & neat	4200	temp. surv.	
NEDU 115	06340	1/17/50	WIW	8,620	17.5	13.375	167	165	Halliburton	GL	circ.	EBTDN
					12	9.625	3004	1600	aqua gel	GL		
					7.875	5.5	8519	550	Halliburton	4255	temp. surv.	
NEDU 133	34600	6/12/99	OW	6980	12.25	8.625	1333	460	Class C	GL	circ. 109 sx	EBTDN
					7.875	5.5	6980	1660	poz	GL	circ. 162 sx	
NEDU 118	06347	6/8/62	P & A 4/19/02	6150	17.25	13.375	326	335	Class A	GL	circ.	EBTDN
					7.875	4.5	5682	570	poz	2560	temp. surv.	
NEDU 119	06343	1/18/53	P & A 6/30/05	6850	17.25	13.375	200	225		GL	circ.	EBTDN
					12.25	8.625	3005	1650		4715	temp. surv.	
					7.875	5.5	5960	225		6000	calc.	
NEDU 127	34426	8/29/98	OW	6980	11	8.625	1390	410	PBCZ	GL	circ. 78 sx	EBTDN
					7.875	5.5	6980	1200	Class C & poz	GL	circ. 90 sx	
NEDU 145	35903	7/12/02	WIW	7023	12.25	8.625	1344	550	Class C	GL	circ.	EBTDN
					7.875	5.5	7023	1500	Class C & poz	GL	circ.	
NEDU 167	39917	12/9/10	OW	7075	12.25	8.625	1511	700	Class C	GL	circ. 32 sx	EBTDN
					7.875	5.5	7075	1315	Class C	GL	circ. 25 sx	
NEDU 166	39916	12/19/10	OW	7050	12.25	8.625	1502	680	Class C	GL	circ. 88 sx	EBTDN
					7.875	5.5	7039	1225	Class C	GL	circ. 55 sx	
NEDU 165	39915	11/15/10	WIW not completed	7054	12.25	8.625	1460	720	Class C	GL	circ.	EBTDN
					7.875	5.5	7054	1135	poz	98	CBL	
NEDU 126	34415	8/15/98	OW	6940	11	8.625	1396	410		GL	circ. 106 sx	EBTDN
					7.875	5.5	6940	1350		GL	circ. 50 sx	
NEDU 114	06344	3/29/54	WIW	6896	17.25	13.375	208	240	Halliburton	GL	circ.	EBTDN
					11	8.625	3008	1750	Halliburton	GL	circ.	
					7.875	5.5	6030	225	Halliburton	4780	temp. surv.	
					4.375	3.5	6896	100	Class C			
NEDU 117	06345	5/24/54	WIW	6996	17.5	13.375	210	245	Halliburton	GL	circ.	EBTN
					11	8.625	3022	1950	Halliburton	GL	circ.	
					7.875	5.5	6060	200	Halliburton	4930	temp. surv.	
					4.75	3.5	6945	100				

WELL	API 30-025-	SPUD	STATUS	TD	HOLE O. D.	CASING O. D.	SET @	SX CEMENT	TYPE	TOC	METH DET	POOL
NEDU 132	34601	5/29/99	OW	6970	12.25 7.875	8.625 5.5	1323 6970	380 1250		GL GL	circ. 92 sx circ. 25 sx	EBTDN
NEDU 135	34796	1/18/00	OW	6610	12.25 7.875	8.625 5.5	1273 6610	460 1300	Class C poz	GL GL	circ. 70 sx circ. 112 sx	EBTDN
NEDU 213	06368	10/27/49	OW	6760	17.5 11 7.875	13.375 8.625 5.5	213 2926 6651	300 2200 600	regular	GL GL	circ. 30 sx circ. 200 sx	EBTDN
NEDU 217	06485	6/10/54	OW	5952	17 11 7.875	13.375 8.625 5.5	250 3127 5816	250 1500 100				EBTDN
State 2-11	06377	10/27/49	P & A 4/10/02	8015	17.25 11 7.875	13.375 8.625 5.5	211 3128 8014	250 2000 850		GL GL 3400	circ. circ.	Wantz; Abo
NEDU 141	35469	5/8/01	OW	6990	12.25 7.875	8.625 5.5	1429 6990	460 1375	Class C poz	GL GL	circ. 71 sx circ. 66 sx	EBTDN
State 2-8	06374	9/16/51	OW	8156	17.25 11 7.875	13.375 8.625 5.5	219 3149 8018	250 2134 875	regular regular	GL GL	circ. circ.	Hare Simpson
NEDU 216	06483	6/6/52	WIW	8147	17.5 11 7.875	13.375 8.625 5.5	228 3148 8010	250 1600 800	regular neat	GL GL	circ. 60 sx circ. 490 sx	EBTDN
NEDU 218	06484	7/29/52	WIW	8000	17 11 7.875	13.375 8.625 5.5	222 3150 7997	250 1800 825	neat neat	GL GL	circ. 40 sx circ. 450 sx	EBTDN
NEU 121	06354	4/7/54	WIW	5950	17.25 11 6.75	13.375 8.625 5.5	375 3024 5844	425 1550 1120	bulk reg. & neat reg. & neat	GL 317 3100	circ. temp. surv. temp. surv.	EBTDN
NEDU 140	35468	4/23/01	OW	7000	12.25 7.875	8.625 5.5	1398 7000	460 1375	Class C poz	GL GL	circ. 81 sx circ. 75 sx	EBTDN
NEDU 142	35470	5/23/01	OW	6850	12.25 7.875	8.625 5.5	1448 6850	460 1175	Class C poz	GL GL	circ. 72 sx circ. 44 sx	EBTDN
NEDU 224	06351	2/18/53	WIW	8700	17.5 12.25 8.75	13.375 9.625 7	299 2999 8280	350 1657 700	regular regular			EBTDN

WELL	API 30-025-	SPUD	STATUS	TD	HOLE O. D.	CASING O. D.	SET @	SX CEMENT	TYPE	TOC	METH DET	POOL
NEDU 220	06358	8/29/54	OW	5975	17.5	13.375	330	350				EBTDN
					11	8.625	3048	1500	4% & neat			
					7.875	5.5	5829	500	4% & neat			
NEDU 231	34411	6/29/88	OW	6940	11	8.625	1382	410		GL	circ. 125 sx	EBTDN
					7.875	5.5	6940	1450		GL	circ. 146 sx	
NEDU 120	06357	7/28/54	OW	5995	17.25	13.375	318	425	regular neat	GL	circ. 50 sx	EBTDN
					11	8.625	3099	2025				
					7.875	5.5	5879	670	4% & neat			
NEDU 230	34412	6/16/98	OW	6930	11	8.625	1363	400		GL	circ. 120 sx	EBTDN
					7.875	5.5	6930	1305		GL	circ. 110 sx	
NEDU 136	34882	7/2/00	OW	6370	12.25	8.625	1365	460	Class C	GL	circ. 81 sx	EBTDN
					7.875	5.5	6370	1275	poz	GL	circ. 66 sx	
NEDU 247	38508	10/11/07	OW	7000	12.25	8.625	1306	650	Class C	GL	circ.	EBTDN
					7.875	5.5	7000	1100	Class C	90'	CBL	
NEDU 345	38507	10/21/07	OW	6980	12.25	8.625	1342	650	Class C	GL	circ.	EBTDN
					7.875	5.5	6980	1300	Class C	170'	CBL	
NEDU 235	34883	7/15/00	OW	6370	12.25	8.625	1347	460	Class C	GL	circ. 91 sx	EBTDN
					7.875	5.5	6370	1050	poz	GL	circ. 148 sx	
NEDU 219	06486	12/18/54	P & A	5956	17	13.375	241	250	neat	GL	circ. 25 sx	EBTDN
			4/20/09		11	8.625	3095	1600	4% & reg.	GL	circ. 30 sx	
					7.875	5.5	5943	200				
NEDU 214	06491	5/3/49	WIW	6810	17.5	13.375	145	175				EBTDN
					12.25	9.625	2939	1600				
					8.75	7	6810	600				
3-21s-37e												
NEDU 113	06496	4/15/58	WIW	6830	17.5	13.375	211	250		GL	circ.	EBTDN
					12.25	9.625	3029	1210		820'	temp. surv.	
					8.75	7	6829	770		3038	temp. surv.	
NEDU 158	39440	11/7/10	OW	7020	12.25	8.625	1419	720	Class C	GL	circ. 170 sx	EBTDN
					7.875	5.5	7020	1250	Class C	GL	circ. 124 sx	
Taylor Glen 3	06382	11/11/51	OW	8224	17.5	13.375	219	250	neat			Wantz; Abo
					11	8.625	3150	2000	neat	GL	circ. 350 sx	
					7.875	5.5	8102	870	neat	GL	circ. 10 sx	

WELL	API 30-025-	SPUD	STATUS	TD	HOLE O. D.	CASING O. D.	SET @	SX CEMENT	TYPE	TOC	METH DET	POOL
NEDU 211	06381	1/4/50	WIW	6780	17.5	13.375	222	300	regular	GL	circ.	EBTDN
					11	8.625	2920	2200	4% + neat	198'		
					7.875	5.5	6655	600	regular	6620'		
NEDU 112	06509	11/26/54	WIW	6020	15	10.75	290	300		GL		EBTDN
					9.875	7.625	3038	1150		650	temp. surv.	
					6.75	5.5	6019	310		3650	temp. surv.	
Taylor Glen 4	06383	3/10/52	OW	8119	17.25	13.375	200	250	neat	GL	circ. 50 sx	Hare; Simp.
					11	8.625	3147	2200	4% & neat	GL	circ. 300 sx	
					7.875	5.5	8115	875	4% & reg.	GL	circ. 75 sx	
NEDU 131	34609	7/10/99	OW	6990	12.25	8.625	1365	460	Class C	GL	circ. 109 sx	EBTDN
					7.875	5.5	6990	1525	poz	GL	circ. 125 sx	
34-20s-38e												
Warren 12	07880	9/11/54	OW	6198		10.75	252	250				Warren;BT
						7.875	3049	1120				
						5.5	6179	415				



Baker Petrolite

from WFX-784

South Permian Basin Region

10520 West I-20 East

Odessa, TX 79765

(915) 498-0191

Lab Team Leader - Sheila Hernandez

(915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	APACHE CORPORATION	Sales RDT:	33102
Region:	PERMIAN BASIN	Account Manager:	MIKE EDWARDS (505) 910-9517
Area:	EUNICE, NM	Sample #:	223099
Lease/Platform:	NORTHEAST DRINKARD UNIT	Analysis ID #:	28971
Entity (or well #):	WATER INJECTION STATION	Analysis Cost	\$40.00
Formation:	UNKNOWN		
Sample Point:	INJECTION PUMP DISCHARGE		

Summary		Analysis of Sample 223099 @ 75 °F					
Sampling Date:	10/3/02	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	10/4/02	Chloride:	10066.0	284.49	Sodium:	5799.5	252.26
Analyst:	SHEILA HERNANDEZ	Bicarbonate:	871.0	11.	Magnesium:	439.0	36.11
TDS (mg/l or g/m3):	20702.9	Carbonate:	0.0	0.	Calcium:	1099.0	54.84
Density (g/cm3, tonne/m3):	1.015	Sulfate:	2465.0	61.32	Strontium:	28.0	0.84
Anion/Cation Ratio:	1.000000	Phosphate:			Barium:	0.1	0.
Carbon Dioxide:	80 PPM	Borate:			Iron:	0.3	0.01
Oxygen:		Silicate:			Potassium:	115.0	2.94
Comments:		Hydrogen Sulfide:		90 PPM	Aluminum:		
		pH at time of sampling:		7.5	Chromium:		
		pH at time of analysis:			Copper:		
		pH used in Calculation:		7.5	Lead:		
					Manganese:		
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.18	75.54	-0.08	0.00	-0.14	0.00	0.07	2.75	0.75	0.00	0.21
100	0	1.25	85.15	-0.08	0.00	-0.09	0.00	0.07	3.09	0.60	0.00	0.3
120	0	1.33	95.11	-0.10	0.00	-0.02	0.00	0.09	3.78	0.47	0.00	0.42
140	0	1.41	105.41	-0.10	0.00	0.08	128.07	0.11	4.46	0.38	0.00	0.56

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

EXHIBIT G

UNICHEM

A Division of BJ Services Company

Lab Test No. 23748

Apache

Sample Date: 3/10/99

Water Analysis

Listed below please find water analysis report from: NEDU

#919-S

Specific Gravity: 1.009
 Total Dissolved Solids: 13273
 pH: 6.49
 Conductivity (umhos):
 Ionic Strength: 0.265

WFX-774 application indicates
 this is San Andres source water

Cations: mg/l

Calcium (Ca++): 608
 Magnesium (Mg++): 244
 Sodium (Na+): 3909
 Iron (Fe++): 0.00
 Dissolved Iron (Fe++):
 Barium (Ba++): 0.38
 Strontium (Sr): 19
 Manganese (Mn++): 0.01
 Resistivity:

Anions:

Bicarbonate (HCO3-): 562
 Carbonate (CO3-):
 Hydroxide (OH-): 0
 Sulfate (SO4-): 1750
 Chloride (Cl-): 6200

Gases: ppm

Carbon Dioxide (CO2): 80.00
 Hydrogen Sulfide (H2S): 408.00
 Oxygen (O2):

Scale Index (positive value indicates scale tendency) a blank indicates some tests were not run

Temperature	CaCO3 SI	CaSO4 SI
86F 30.0C	-0.14	-17.28
104F 40.0C	0.09	-17.28
122F 50.0C	0.35	-17.28
140F 60.0C	0.57	-16.80
168F 70.0C	0.87	-15.02
176F 80.0C	1.20	-15.51

Comments:

cc: Jerry White
 Jay Brown

P.O. Box 61427 • Midland, TX 79711 • 4312 S. County Rd. 1298, Midland, TX 79765
 Office: (915) 563-0241 • Fax: (915) 563-0243

010/200.2 0120#

UNICHEM LAB

915 563 0243

EXHIBIT G

APR-05-1999 15:15

3942740

96%



New Mexico Office of the State Engineer

Point of Diversion by Location

(with Owner Information)

(acre ft per annum)		(quarters are 1=NW 2=NE 3=SW 4=SE)		(NAD83 UTM in meters)	
Sub	basin	Use	Diversion	Owner	
WR File Nbr	CP 00197	DOM	EXP	0 MCNEILL RANCH	
CP 01037					
Source	6416 4	Sec	21S	37E	
Grant	CP 00197 DCL				
County	LE				
POD Number	CP 01037 POD1				
Q	1	4	1	01	21S 37E
Q	2	2	2	10	21S 37E
Q	3	3	3	3	3
Q	4	4	4	4	4
X	676611				3598599*
Y	674322				3597345
Distance					1853

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 674871.72

Northing (Y): 3599239.42

Radius: 2000

Sorted by: Distance

1,853 meters
x 3.28 meter/feet
6,077 feet

*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.

12/22/10 9:20 AM

Page 1 of 1

POINT OF DIVERSION BY LOCATION

EXHIBIT H

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

February 6, 2011

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

Dear Mr. Powell:

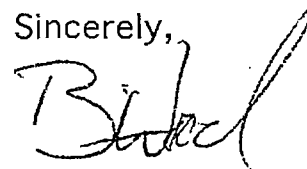
Apache Corporation is applying (see attached application) to complete its existing Northeast Drinkard Unit #168 well as a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposed water injection well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Northeast Drinkard Unit #168 (state lease) ID = 7,052'
Proposed Injection Zone: Blinbry (from ~5,773' to ~5,978')
Location: 1970' FNL & 1125' FWL Sec. 2, T. 21 S., R. 37 E., Lea County, NM
Approximate Location: ~5 air miles north-northeast of Eunice, NM
Applicant Name: Apache Corporation (432) 818-1167
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a salt 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 New Mexico Oil Conservation Division 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

7010 0290 0000 9224 3362

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 696
Sent To NMSLO	
Street, Apt. No., or PO Box No.	
City, State, ZIP+4	

Postmark: SANTA FE, NM FEB 11 2011



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

February 6, 2011

Tom Scarborough
ConocoPhillips Company
P. O. Box 2197
Houston, TX 77252

Dear Mr. Scarborough:

Apache Corporation is applying (see attached application) to complete its existing Northeast Drinkard Unit #168 well as a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposed water injection well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Northeast Drinkard Unit #168 (state lease) TD = 7,052'

Proposed Injection Zone: Blinbry (from ~5,773' to ~5,978')

Location: 1970' FNL & 1125' FWL Sec. 2, T. 21 S., R. 37 E., Lea County, NM

Approximate Location: ~5 air miles north-northeast of Eunice, NM

Applicant Name: Apache Corporation (432) 818-1167

Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a salt 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 New Mexico Oil Conservation Division 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

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$70.0566

Postmark: FEB 11 2011

Sent To: ConocoPhillips

Street, Apt. No.,
or PO Box No.

City, State, ZIP+4



Affidavit of Publication

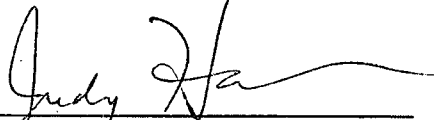
State of New Mexico,
County of Lea.

I, JUDY HANNA
PUBLISHER

of the Hobbs News-Sun, a
newspaper published at Hobbs, New
Mexico, do solemnly swear that the
clipping attached hereto was
published in the regular and entire
issue of said newspaper, and not a
supplement thereof for a period

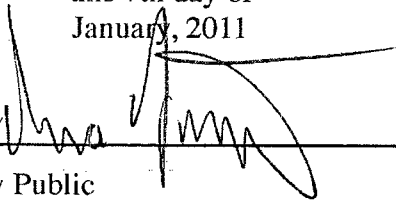
of 1 issue(s).

Beginning with the issue dated
January 07, 2011
and ending with the issue dated
January 07, 2011



PUBLISHER

Sworn and subscribed to before me
this 7th day of
January, 2011



Notary Public

My commission expires
February 09, 2013
(Seal)



This newspaper is duly qualified to
publish legal notices or
advertisements within the meaning of
Section 3, Chapter 167, Laws of
1937 and payment of fees for said
publication has been made.

LEGAL NOTICE
JANUARY 7, 2011
Apache Corporation is applying to use the Northeast Drinkard Unit #165 and #168 wells as water injection wells in Sec. 2, T.21 S., R. 37 E., Lea County, NM. The #165 is located at 1800' FNL & 125' FWL and will inject water into the Blinebry (maximum injection pressure = 1,140 psi) from 5,701' to 6,100' and into the Drinkard (maximum injection pressure = 1,342 psi) from 6,710' to 6,862'. The #168 is located at 1970' FNL & 1125' FWL and will inject water into the Blinebry (maximum injection pressure = 1,155 psi) from 5,773' to 5,978' and into the Drinkard (maximum injection pressure = 1,322 psi) from 6,610' to 6,900'. Injection will be at a maximum rate of 1,000 bwpd per well. 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.
#26305

3
d ep TA
2

EXHIBIT J

DISTRICT I
1625 N FRENCH DR., HOBBS, NM 88240

State of New Mexico
Energy, Minerals and Natural Resources Department

[Handwritten Signature]

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION

11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410

DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39918	Pool Code 22900	Pool Name Eunice, Bli - Tu - Dri, North
Property Code 22503	Property Name NORTHEAST DRINKARD UNIT	Well Number 168 168
OGRID No. 873	Operator Name APACHE CORPORATION	Elevation 3501'

Surface Location

UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
5	2	21-S	37-E		1970	NORTH	1125	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION</p> <p>Y=553758.6 N X=868387.5 E</p> <p>LAT.=32.516714" N LONG.=103.138252" W</p> <p>LAT.=32°31'00.17" N LONG.=103°08'17.71" W</p>	<p>D4 LOT 4</p>	<p>C3 LOT 3</p>	<p>B2 LOT 2</p>	<p>A1 LOT 1</p>
	<p>37 42 AC D5 LOT 5</p>	<p>37 32 AC C6 LOT 6</p>	<p>37 24 AC B7 LOT 7</p>	<p>37 14 AC A8 LOT 8</p>
	<p>40 00 AC D12 LOT 12</p>	<p>40 00 AC C11 LOT 11</p>	<p>40 00 AC B10 LOT 10</p>	<p>40 00 AC A9 LOT 9</p>
	<p>40 00 AC E LOT 13</p>	<p>40 00 AC F LOT 14</p>	<p>40 00 AC G LOT 15</p>	<p>40 00 AC H LOT 16</p>
	<p>40 00 AC</p>	<p>40 00 AC</p>	<p>40 00 AC</p>	<p>40 00 AC</p>
	<p>L</p>	<p>K</p>	<p>J</p>	<p>I</p>
	<p>M</p>	<p>N</p>	<p>O</p>	<p>P</p>
	<p>SCALE: 1"=2000'</p>			
	<p>Diagram showing well location (circled) and acreage for various lots.</p>			

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

[Signature] 9/22/10
Signature Date

Sarina L. Flores
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat 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 belief.

[Signature] 09/27/2010
Date Signature

RONALD J. BIDSON
Professional Surveyor
3233

Certificate No. **GARY G. BIDSON 12641**
RONALD J. BIDSON 3239

DISTRICT I
1625 N. FRENCH DR., HOBBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410

DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39915	Pool Code 22900	Pool Name Ennice; Bli-Tu-Dri, North
Property Code 22503	Property Name NORTHEAST DRINKARD UNIT	Well Number 165
OGRID No. 873	Operator Name APACHE CORPORATION	Elevation 3494'

Surface Location

UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
5	2	21-S	37-E		1800	NORTH	125	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <u>Sorin L. Flores</u> Date: <u>9/22/10</u> Printed Name: <u>Sorin L. Flores</u>	
	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat 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 belief. Date Surveyed: <u>9/22/10</u> DSS Signature & Seal of Professional Surveyor: <u>Ronald J. Eidson</u> Certificate No. <u>GARY G. EIDSON 12851</u> <u>RONALD J. EIDSON 3239</u>	

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y=553917.2 N
X=867385.6 E
LAT.=32°51'18.1" N
LONG.=103°14'19.6" W
LAT.=32°31'01.85" N
LONG.=103°08'29.39" W
SCALE: 1"=2000'