

DATE IN <u>06/25/14</u>	SUSPENSE	ENGINEER <u>PRG</u>	LOGGED IN <u>06/26/14</u>	TYPE <u>SWD</u>	APP NO. <u>PRG 141 7737887</u>
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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 _____

*06/25/14
 Hand-delivered.
 Date Stamp not available*

*Apache Corp.
 30-015 - Pending
 AAO Fed. SWD 1*

[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

G/Sec 1/189/27E

[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.

David Catanach
 Print or Type Name

David Catanach
 Signature

Agent-Apache Corporation
 Title

6/25/14
 Date

drcatanach@netscape.com
 E-Mail Address

June 25, 2014

Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Ms. Jami Bailey, CPG
Division Director

Re: Form C-108
Apache Corporation
AAO Federal SWD No. 1
API No. (Not Yet Assigned)
2470' FNL & 2380' FEL, Unit G
Section 1, T-18S, R-27E, NMPM,
Eddy County, New Mexico

Dear Ms. Bailey,

Enclosed please find a Division Form C-108 (Application for Authorization to Inject) for the Apache Corporation AAO Federal SWD No. 1. Apache Corporation proposes to drill and utilize this well as a produced water disposal well, injection to occur into the Wolfcamp, Cisco, Canyon and Strawn formations through the perforated interval from approximately 6,806 feet to 9,200 feet. Produced water from the Glorieta and Yeso formations originating from Apache Corporation operated wells in this area will be injected into the well.

I believe that all the information necessary to approve the application is enclosed. If additional information is needed, please contact me at (505) 690-9453.

Sincerely,



David Catanach-Agent
Apache Corporation
303 Veterans Airpark Lane, Suite 3000
Midland, Texas 79705

Xc: OCD-Artesia

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance _____ ☒ Disposal _____ Storage
Application qualifies for administrative approval? _____ ☒ Yes _____ No
- II. OPERATOR: _____ Apache Corporation (OGRID-873) _____
ADDRESS: _____ 303 Veterans Airpark Lane, Suite 3000 Midland, Texas 79705 _____
CONTACT PARTY: _____ David Catanach-Agent _____ PHONE: (505) 690-9453
- 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 _____ ☒ No
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:
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: _____ David Catanach _____ TITLE: _____ Agent-Apache Corporation _____
SIGNATURE: _____ *David Catanach* _____ DATE: _____ 6/25/14 _____
E-MAIL ADDRESS: _____ drcatanach@netscape.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.

C-108 Application
Apache Corporation
AAO Federal SWD No. 1
2470' FNL & 2380' FEL (Unit G)
Section 1, T-18S, R-27E, NMPM
Eddy County, New Mexico

- I. The purpose of the application is to request approval to utilize the proposed AAO Federal SWD No. 1 as a produced water disposal well. This is a new well to be drilled for injection.
- II. Apache Corporation
303 Veterans Airpark Lane
Suite 3000
Midland, Texas 79705
Contact Party: David Catanach (505) 690-9453
- III. Injection well data sheet and wellbore schematic diagram showing the proposed wellbore configuration is attached.
- IV. This is not an expansion of an existing project.
- V. Attached are maps that identify all wells/leases within a 2-mile and 1-mile radius of the proposed water disposal well and a map that identifies the ½ mile "Area of Review" ("AOR").
- VI. A listing of all wells within the AOR, including API No., operator, well name & number, well type and status, well location, total depth and well construction, where applicable, is attached. An examination of the AOR well listing shows that of the 40 active or PA'd wells within the AOR, only 3 wells penetrate the proposed injection interval. The well data further indicates that these 3 wells are adequately cased and cemented so as to preclude the migration of fluid from the proposed injection interval.
- VII.
 1. The average injection rate is anticipated to be approximately 4,000 BWPd. The maximum rate will be approximately 15,000 BWPd. If the average or maximum rates increase in the future, the Division will be notified.
 2. This will be a closed system.
 3. Apache Corporation will initially inject water into the subject well at or below a surface injection pressure that is in compliance with the Division's limit of 0.2 psi/ft., or approximately 1,361 psi. If a surface injection pressure above 1,361 psi is necessary, Apache will conduct a

step rate injection test to determine the fracture pressure of the Wolfcamp, Cisco, Canyon and Strawn formations in this area.

4. Produced water from the Glorieta and Yeso formations originating from Apache Corporation operated wells in this area will be injected into the subject well. Attached is a water analysis from Apache's Barnsdall Federal Well No. 12 which produces from the East Empire Glorieta-Yeso Pool, and a water analysis from Apache's D State No. 71 which produces from the Artesia Glorieta-Yeso Pool.
5. The Wolfcamp formation is productive within one mile the proposed AAO Federal SWD No. 1. The Cisco, Canyon and Strawn formation are not productive within one mile of the proposed AAO Federal SWD No. 1 and consequently, formation water samples are not available. The Cisco, Canyon and Strawn formation are productive in numerous locations in Eddy and Lea Counties, and literature indicates that the water present in these formations is highly saline.

VIII. Geologic Formation: Wolfcamp
Estimated Top: 6,806' ✓
Thickness: 845'
Lithology: Limestone w/Interbedded Dolomites

Geologic Formation: Cisco
Estimated Top: 7,651' ✓
Thickness: 675'
Lithology: Dolomites & Limestones

Geologic Formation: Canyon
Estimated Top: 8,326' ✓
Thickness: 482'
Lithology: Limestone

Geologic Formation: Strawn
Estimated Top: 8,808' ✓
Thickness: 592'
Lithology: Limestone

USDW's: According to data obtained from the New Mexico State Engineer, there are no fresh water wells within a one mile radius of the AAO Federal SWD No. 1, however, if fresh water is present, it would likely occur at shallow depths of less than 100'

M/36/175/27E
30-015-27286
Chalk Bluff
316 State No. 1
Recompletion in
w/ Perforated 7104' to
7277'
Logan Draw; UK
Pool
Latest 2.0 to 1.5 BOPD
+ 1 MCFPD
+ 3 to 6 BOPD
Lost 6 months
- 30 day production
Alaska & Marrow abandoned

- IX. If necessary, the well will be stimulated with a mild acid job.
- X. Logs will be filed subsequent to the completion of drilling operations.
- XI. There are no fresh water wells located within a one-mile radius of the proposed AAO Federal SWD No. 1.
- XII. Affirmative statement is enclosed.
- XIII. Proof of Notice is enclosed.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (505) 748-1283 Fax: (505) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3450 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name AAO FEDERAL SWD	Well Number 1
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3629'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	1	18 S	27 E		2470	NORTH	2380	EAST	EDDY

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		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>BC</p> <p>Lot - N 32.783425° Long - W 104.240803° NMSPC-E 569774.1 (NAD-83)</p> <p>Lot - N 32.783111° Long - W 104.240290° NMSPC-E 568692.0 E 528594.9 (NAD-27)</p>	<p>LOT 4</p>	<p>LOT 3</p>	<p>LOT 2</p>	<p>LOT 1</p>	<p>BC</p> <p>Lot - N 32.783261° Long - W 104.223507° NMSPC-E 568700.1 E 575089.8 (NAD-83)</p> <p>Lot - N 32.783146° Long - W 104.222994° NMSPC-E 568637.2 E 533910.6 (NAD-27)</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p> <p>Email Address _____</p>
<p>BC</p> <p>Lot - N 32.776289° Long - W 104.240687° NMSPC-E 568158.7 E 569812.1 (NAD-83)</p> <p>Lot - N 32.776175° Long - W 104.240174° NMSPC-E 568095.9 E 528632.9 (NAD-27)</p>	<p>SURFACE LOCATION</p> <p>Lot - N 32.776548° Long - W 104.231257° NMSPC-E 5646255.3 E 572710.3 (NAD-83)</p> <p>Lot - N 32.776433° Long - W 104.230744° NMSPC-E 5646192.5 E 531531.1 (NAD-27)</p>	<p>2470'</p>	<p>3618.0'</p>	<p>3647.6'</p>	<p>BC</p> <p>Lot - N 32.775950° Long - W 104.223517° NMSPC-E 5646040.1 E 575089.6 (NAD-83)</p> <p>Lot - N 32.775833° Long - W 104.223004° NMSPC-E 5645977.2 E 533910.3 (NAD-27)</p>	<p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>Date Surveyed MAY 1, 2013</p> <p>Signature _____ Professional Surveyor 7977</p> <p>Certificate _____ Professional Surveyor 7977</p> <p>Scale: 0' 500' 1000' 1500' 2000'</p> <p>SCALE: 1" = 1000'</p> <p>WO Num.: 29720</p>
<p>BC</p> <p>Lot - N 32.769171° Long - W 104.240566° NMSPC-E 5643568.8 E 569851.5 (NAD-83)</p> <p>Lot - N 32.769056° Long - W 104.240054° NMSPC-E 5643506.0 E 528672.3 (NAD-27)</p>		<p>3639.3'</p>	<p>3618.0'</p>	<p>BC</p> <p>Lot - N 32.769067° Long - W 104.232043° NMSPC-E 5643534.2 E 572471.5 (NAD-83)</p> <p>Lot - N 32.768954° Long - W 104.231530° NMSPC-E 5643471.5 E 531292.2 (NAD-27)</p>		

INJECTION WELL DATA SHEET

OPERATOR: Apache Corporation

WELL NAME & NUMBER: AAO Federal SWD No. 1

WELL LOCATION: 2470' FNL & 2380' FEL G 1 18 South 27 East
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

See Attached Wellbore Schematic

WELL CONSTRUCTION DATA (PROPOSED)

Surface Casing

Hole Size: 17 1/2" Casing Size: 13 3/8" @ 480'

Cemented with: 950 Sx. or _____ ft³

Top of Cement: Surface Method Determined: Circulate

Intermediate Casing

Hole Size: 12 1/4" Casing Size: 9 5/8" @ 4,500'

Cemented with: 1550 Sx. or _____ ft³

Top of Cement: Surface Method Determined: Circulate

Production Casing

Hole Size: 8 3/4" Casing Size: 7" @ 9,400'

Cement with: 1150 sx. or _____ ft³

Top of Cement: Surface Method Determined: Circulate

Total Depth: 9,400'

Injection Interval

Perforated Interval -6,806'-9,200' (Perforated)

2394ft
> per conversation with DC - keep interval in Application

→ See attached approved
APD for well *BA*

INJECTION WELL DATA SHEET

Tubing Size: 4 1/2"

Lining Material: Duo Lined (Extruded Thermoplastic)

Type of Packer: Nickel Plated Weatherford 1X

Packer Setting Depth: 6,706' or within 100' of the uppermost injection perforations

Other Type of Tubing/Casing Seal (if applicable): None

Additional Data

1. Is this a new well drilled for injection: X Yes No

If no, for what purpose was the well originally drilled: _____

2. Name of the Injection Formation: Wolfcamp, Cisco, Canyon & Strawn

3. Name of Field or Pool (if applicable): N/A

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.

None

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

Empire Yates-Seven Rivers (1,000'); Red Lake Queen-Grayburg-San Andres Pool (1,800'); Northeast Red Lake Glorieta-Yeso Pool (4,000'); Empire-Abo Pool (6,200'); North Illinois Camp-Morrow Gas Pool (10,500')

Proposed Wellbore Configuration

Apache Corporation
AAO Federal SWD No. 1

API No. N/A

2470' FNL & 2380' FEL (Unit G)
Section 1, T-18 South, R-27 East, NMPM

17 1/2" Hole; Set 13 3/8" 48# H-40 Csg @ 480'
Cement w/950 Sx.
Circulate cement to surface.

12 1/4" Hole; Set 9 5/8" 40# J-55 Csg @ 4,500'
Cement w/1550 Sx.
Circulate cement to surface.

4 1/2" Duo-Lined Injection Tubing to be set in a
Nickel Plated Weatherford 1X Packer @ 6,706' or
within 100' or the uppermost injection perforations.

Estimated Formation Tops: Wolfcamp: 6,806'
Cisco: 7,651'
Canyon: 8,326'
Strawn: 8,808'

Proposed Wolfcamp, Cisco, Canyon & Strawn Perforations:
6,806'-9,200' (Selected Intervals)

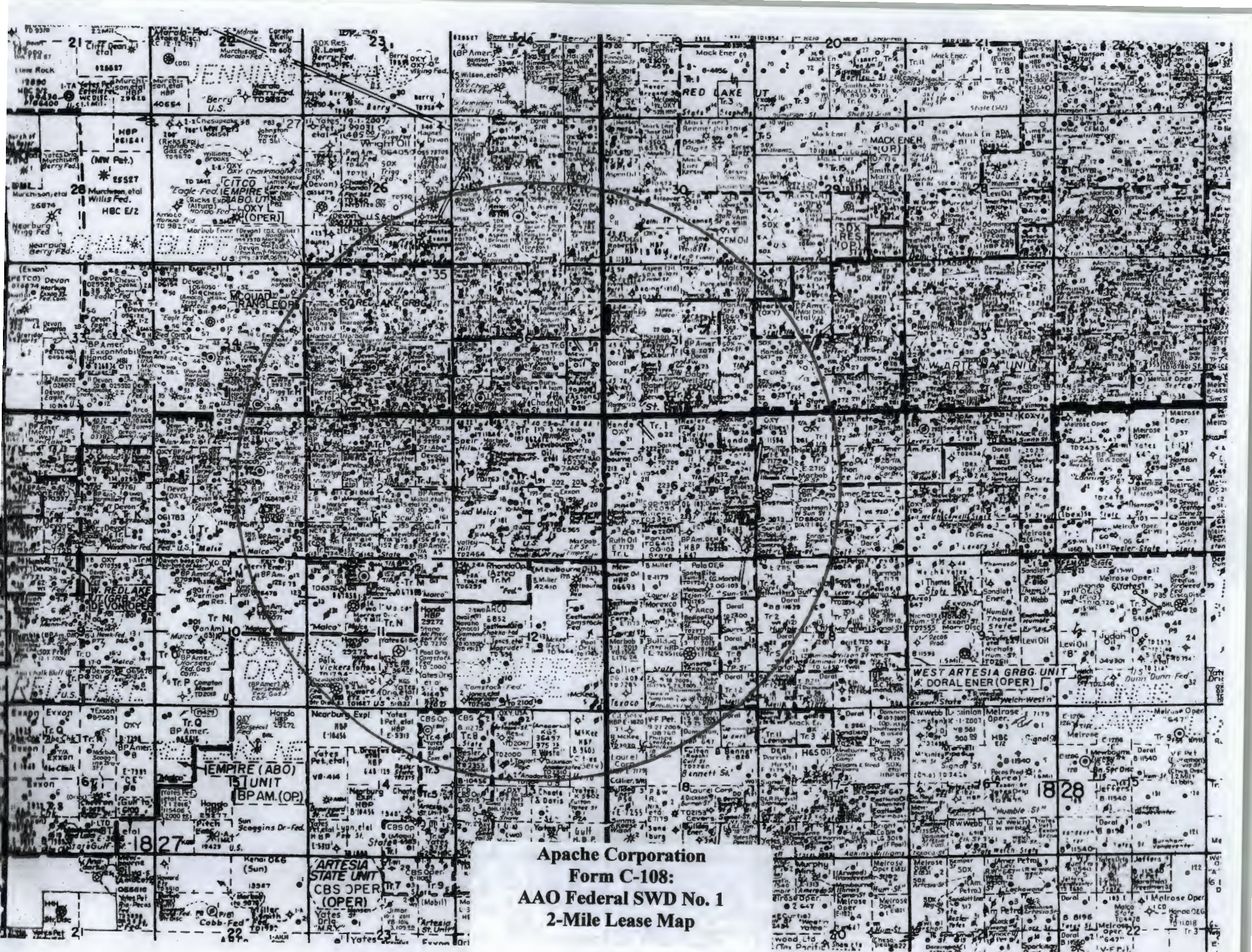
8 3/4" Hole; Set 7" 26# HCL-80 Csg. @ 9,400'
Cement w/1150 Sx.
Circulate cement to surface.

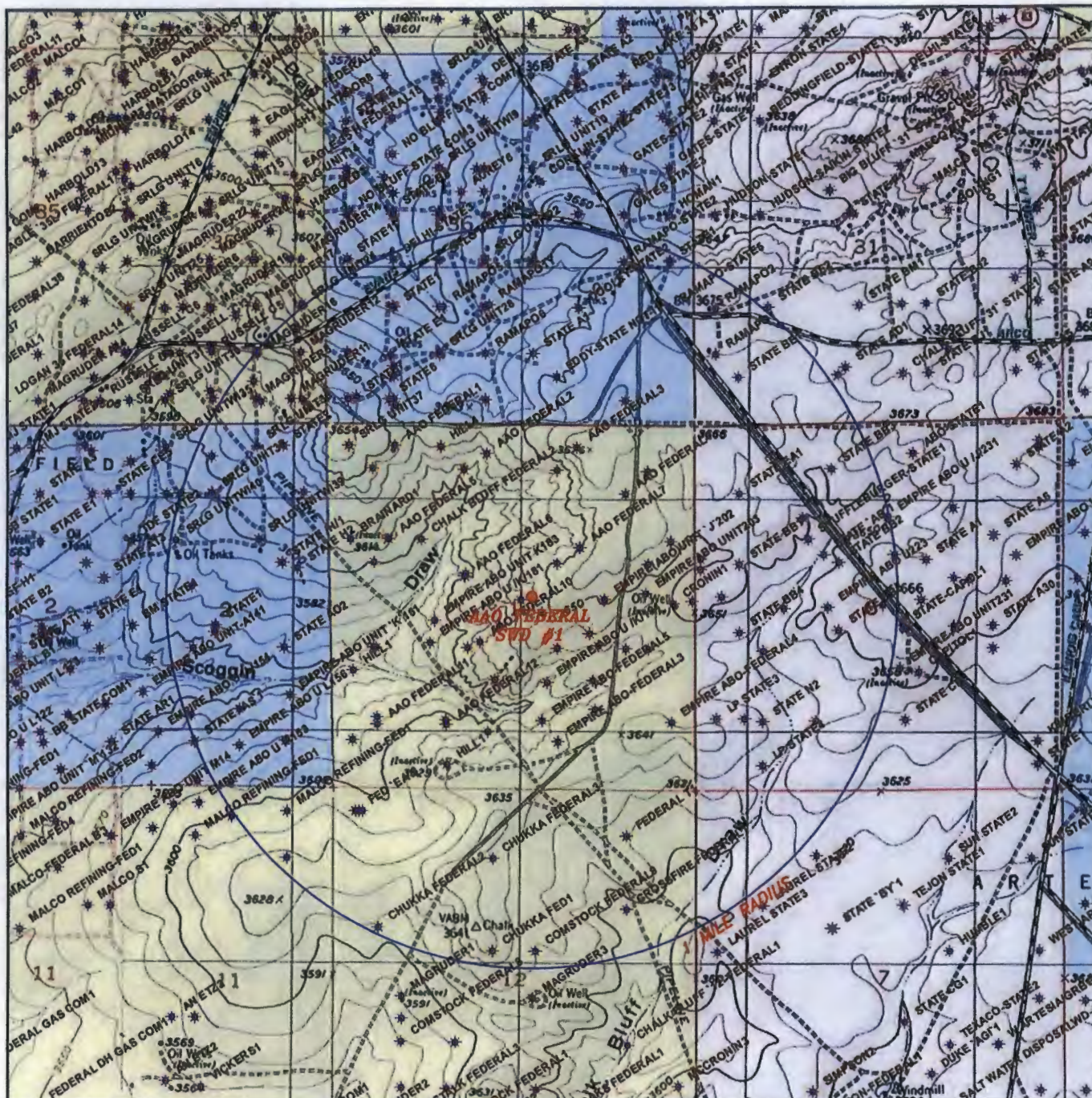
Apache's APD
- TOC at 3000'
DV tool at

Apache's APD

9100

TD: 9,400'





AAO FEDERAL SWD #1

Located 2470' FNL and 2380' FEL
Section 1, Township 18 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax

Apache Corporation

Form C-108:

AAO Federal SWD No. 1
1-Mile Well/Lease Map

0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

W.O. Number: JMS 29720

Survey Date: 11-05-2013

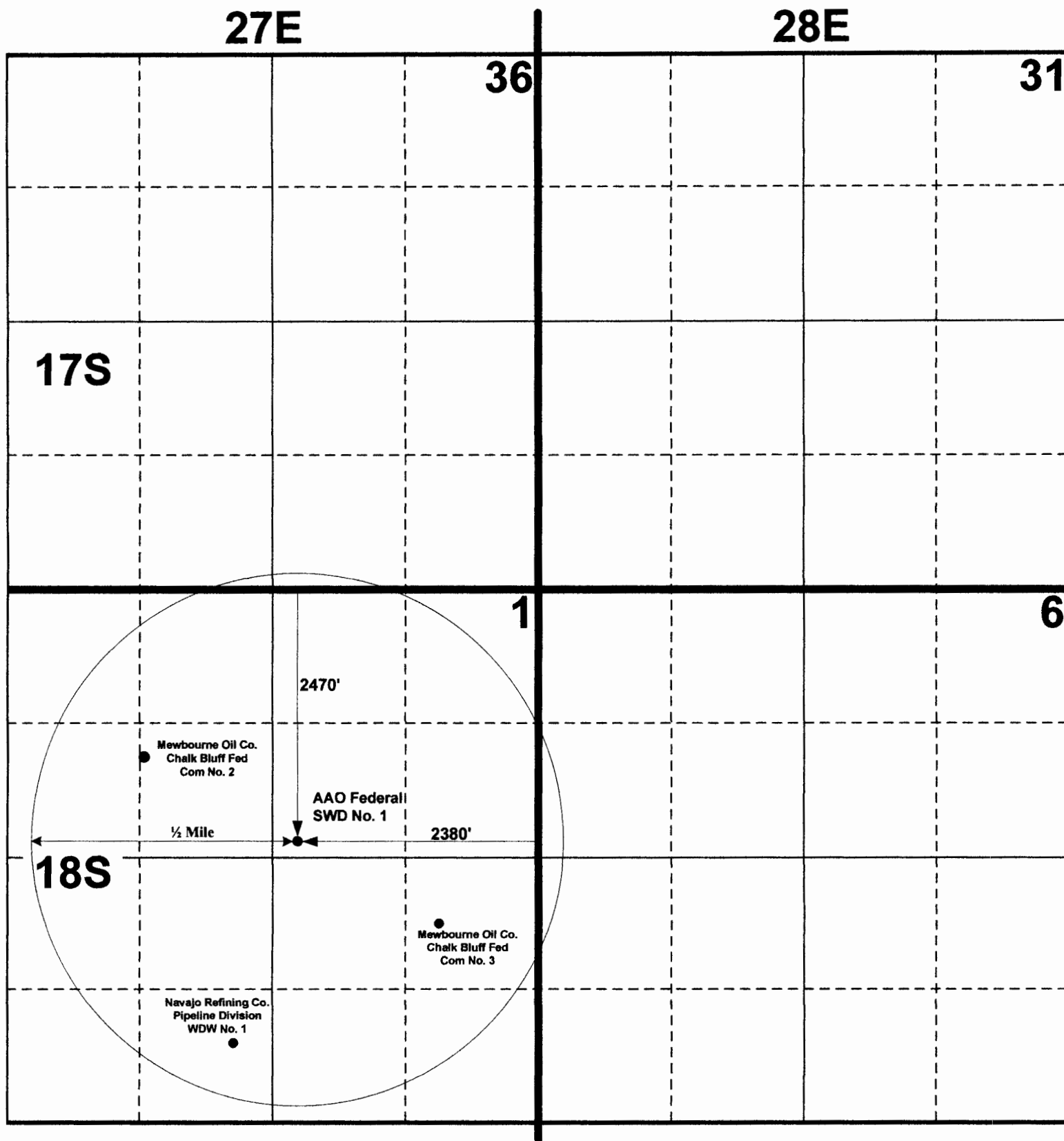
YELLOW TINT - USA LAND

BLUE TINT - STATE LAND

NATURAL COLOR - FEE LAND



EXPLORING WHAT'S POSSIBLE



Form C-108: AAO Federal SWD No. 1
Apache Corporation
Area of Review Well Map*

(* Only AOR wells that penetrate the injection interval are shown)

APACHE CORPORATION
FORM C-108: AAO FEDERAL SWD NO. 1
AREA OF REVIEW WELL LIST
WELLS THAT PENETRATE INJECTION INTERVAL

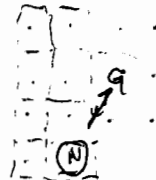
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTD	NIB	FTS	SWP	UNIT	SEC	TRMP	TRMS	DATE	TOTAL DEPTH	WELL SIZE	PERF	ST	ST	UNIT	INTD	HOLE SIZE	CSC SIZE	SET AT	SV	CS	TOP	INTD	COMPLETION	REMARKS
30-015-27163	Mewbourne Oil Company	Chalk Bluff Fed Com	3	P	Active	1980'	S	990'	E	I	1	18S	27E	Nov-92	10,150'	17 1/2"	13 3/8"	400'	515	Surface	Circ.	12 1/4"	9 5/8"	2,600'	840	Surface	Circ.	9,950'-9,972' Perf.	Morrow Completion	
																8 3/4"	7"	8,968'	1200	2,075'	Calc.	6"	4 1/2"	8,599'-10,150'	200	Liner Top	Calc.		7" csg. stage cemented. 1st-350 sx. 2nd-850 sx. DV Tool @ 6,997'	
30-015-26741	Mewbourne Oil Company	Chalk Bluff Fed Com	2	P	Active	1650'	N	1350'	W	F	1	18S	27E	May-91	10,140'	17 1/2"	13 3/8"	416'	550	Surface	Circ.	12 1/4"	9 5/8"	2,610'	1025	Surface	Circ.	9,850'-9,876' Perf.	Morrow Completion	
																					8 3/4"	5 1/2"	10,148'	1020	Surface	Circ.		PBTD: 9,935'		
																												5 1/2" csg. stage cemented. 1st-560 sx. 2nd-460 sx. DV Tool @ 7,606'		
30-015-26575	Navajo Refining Company Pipeline Division	WDW	1	SWD	Active	790'	S	2250'	W	N	1	18S	27E	Dec-90	10,120'	17 1/2"	13 3/8"	400'	625	Surface	Circ.	12 1/4"	9 5/8"	2,604'	1025'	Surface	Circ.	7,660'-8,620' Perf.	Cisco-Canyon SWD Completion	
																8 3/4"	7"	9,450'	1350	Surface	Circ.	6 3/4"	4 1/2"	9,051'-10,119'	175	Liner Top	Circ.		PBTD: 9,022'	
Morrow Perfs 9,861'-9,967' Isolated w/CIBP @ 9,800' + 35' cmt. Wolfcamp Perfs 7,050'-7,314' squeezed w/260 sx. Cmt.																														
																													7" csg. Stage Cemented. 1st-350 sx. 2nd-1000 sx. DV Tool @ 7,599'	

3 total

2 Producers

&

1 SWD - Navajo Refinery disposal (Class I)
at outer edge of 1/2 mile radius



APACHE CORPORATION
FORM C-108: AAO FEDERAL SWD NO. 1
AREA OF REVIEW WELL LIST

WELLS THAT DO NOT PENETRATE INJECTION INTERVAL (Pg. 1)

API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHIP	RNG.	TOTAL DEPTH	COMPLETION
30-015-00696	Apache Corporation	Empire Abo Unit	19Q	P	Active	1980'	S	1980'	E	J	1	18S	27E	6,180'	Abo
30-015-00697	BP America Prod. Co.	Empire Abo Unit	20K	P	PA	1980'	S	660'	E	I	1	18S	27E	6,185'	Abo
30-015-00708	Apache Corporation	Empire Abo Unit	19B	P	PA	660'	N	1980'	E	B	1	18S	27E	6,078'	Abo
30-015-00709	Apache Corporation	Empire Abo Unit	19C	P	PA	1980'	N	1980'	E	G	1	18S	27E	6,205'	Abo
30-015-00711	Apache Corporation	Empire Abo Unit	20C	P	Active	1980'	N	660'	E	H	1	18S	27E	6,218'	Abo
30-015-01215	Apache Corporation	Empire Abo Unit	20D	P	Active	667'	N	666'	E	A	1	18S	27E	6,118'	Abo
30-015-21552	Apache Corporation	Empire Abo Unit	191	P	Active	2500'	N	2500'	E	G	1	18S	27E	6,259'	Abo
30-015-21553	Apache Corporation	Empire Abo Unit	201	P	Active	2501'	N	20'	E	H	1	18S	27E	6,225'	Abo
30-015-21783	Apache Corporation	Empire Abo Unit	202	P	Active	2490'	N	1299'	E	H	1	18S	27E	6,296'	Abo
30-015-21873	Apache Corporation	Empire Abo Unit	191A	P	Active	1526'	S	1470'	E	J	1	18S	27E	6,350'	Abo
30-015-22560	Apache Corporation	Empire Abo Unit	192	P	Active	2020'	S	1390'	E	J	1	18S	27E	6,250'	Abo
30-015-22656	Apache Corporation	Empire Abo Unit	203	P	Active	2400'	N	700'	E	H	1	18S	27E	6,225'	Abo
30-015-22657	Apache Corporation	Empire Abo Unit	193	P	Active	2490'	S	2200'	E	J	1	18S	27E	6,225'	Abo
30-015-32309	Apache Corporation	AAO Federal	3	P	Active	330'	N	1690'	E	B	1	18S	27E	4,125'	Glorieta-Yeso
30-015-32310	Apache Corporation	AAO Federal	4	P	Active	990'	N	990'	E	A	1	18S	27E	4,100'	Glor-Yeso-Gb-SA
30-015-33473	Apache Corporation	AAO Federal	7	P	Active	1750'	N	1650'	E	G	1	18S	27E	4,100'	Glor-Yeso-Gb-SA
30-015-33784	Apache Corporation	AAO Federal	8	P	Active	1650'	N	330'	E	H	1	18S	27E	4,310'	Glor-Yeso-Gb-SA
30-015-36281	Mack Energy Corp.	Sun Devils Federal	1		Cancelled APD	2193'	S	1520'	E	J	1	18S	27E	N/A	N/A
30-015-39898	Apache Corporation	Empire Abo Unit	412	P	NYD	1258'	N	1005'	E	A	1	18S	27E	6,300'	Abo
30-015-39899	Apache Corporation	Empire Abo Unit	413	P	NYD	1305'	N	2535'	W	C	1	18S	27E	6,300'	Abo
30-015-00698	ARCO Permian	Empire Abo Unit	191	SWD	PA	660'	S	1980'	E	O	1	18S	27E	6,365'	San Andres
30-015-00703	BP America Prod. Co.	Empire Abo Unit	17A	P	PA	1980'	S	660'	W	L	1	18S	27E	6,137'	Abo
30-015-00704	ARCO Oil & Gas Company	Empire Abo Unit J	17	P	PA	1980'	N	660'	W	E	1	18S	27E	5,960'	Abo
30-015-00706	Apache Corporation	Empire Abo Unit	18A	P	Active	2310'	N	1980'	W	F	1	18S	27E	6,087'	Abo
30-015-00707	Apache Corporation	Empire Abo Unit	18B	P	Active	1980'	S	1980'	W	K	1	18S	27E	6,163'	Abo
30-015-00710	Apache Corporation	AAO Federal	13	P	Active	660'	N	1980'	W	C	1	18S	27E	6,200'	Glorieta-Yeso
30-015-00713	BP America Prod. Co.	Empire Abo Unit	18D	P	PA	995'	S	1644'	W	N	1	18S	27E	6,174'	Abo
30-015-20394	ARCO Oil & Gas Company	Empire Abo Unit L	19	P	PA	953'	S	2197'	E	O	1	18S	27E	6,300'	Abo
30-015-21554	BP America Prod. Co.	Empire Abo Unit K	181	P	PA	1367'	S	1440'	W	K	1	18S	27E	6,203'	Abo
30-015-21792	Apache Corporation	Empire Abo Unit	182	P	Active	1533'	S	2370'	W	K	1	18S	27E	6,369'	Abo
30-015-22096	Apache Corporation	Empire Abo Unit	183	P	Active	2370'	S	1510'	W	K	1	18S	27E	6,210'	Abo
30-015-22559	Apache Corporation	Empire Abo Unit	184	P	PA	2290'	S	2445'	W	K	1	18S	27E	6,200'	Abo
30-015-22658	Apache Corporation	Empire Abo Unit	194	P	Active	1500'	S	2130'	E	J	1	18S	27E	6,325'	Abo

WELLS THAT DO NOT PENETRATE INJECTION INTERVAL (Pg. 2)

[illegible]

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company: <u>APACHE CORPORATION</u>	Sales RDT: <u>33512</u>
Region: <u>PERMIAN BASIN</u>	Account Manager: <u>WAYNE PETERSON (575) 910-9389</u>
Area: <u>LOCO HILL, NM</u>	Sample #: <u>583097</u>
Lease/Platform: <u>BARNSDALL FED</u>	Analysis ID #: <u>111864</u>
Entity (or well #): <u>12</u>	Analysis Cost: <u>\$90.00</u>
Formation: <u>UNKNOWN</u>	
Sample Point: <u>WELLHEAD</u>	

Summary		Analysis of Sample 583097 @ 75 F					
Sampling Date:	08/24/11	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	08/31/11	Chloride:	105893.0	2986.86	Sodium:	67982.4	2957.07
Analyst:	STACEY SMITH	Bicarbonate:	646.6	10.6	Magnesium:	315.0	25.91
TDS (mg/l or g/m3):	181426.6	Carbonate:	0.0	0.	Calcium:	1870.0	93.31
Density (g/cm3, tonne/m3):	1.122	Sulfate:	4299.0	89.51	Strontium:	38.0	0.87
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.1	0.
		Borate:			Iron:	1.5	0.05
		Silicate:			Potassium:	381.0	9.74
Carbon Dioxide:	70 PPM	Hydrogen Sulfide:		85 PPM	Aluminum:		
Oxygen:	0 PPM	pH at time of sampling:		7.3	Chromium:		
Comments:		pH at time of analysis:			Copper:		
		pH used in Calculation:		7.3	Lead:		
					Manganese:	0.040	0.
					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	1.12	55.83	-0.13	0.00	-0.11	0.00	-0.15	0.00	0.39	0.00	0.26
100	0	1.10	62.00	-0.21	0.00	-0.12	0.00	-0.18	0.00	0.18	0.00	0.41
120	0	1.07	68.17	-0.28	0.00	-0.11	0.00	-0.20	0.00	0.00	0.00	0.61
140	0	1.06	74.93	-0.33	0.00	-0.08	0.00	-0.21	0.00	-0.16	0.00	0.88

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.

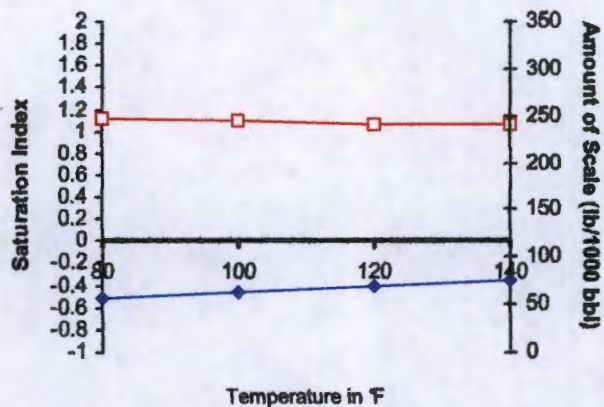
Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

Apache Corporation
Form C-108:
AAO Federal SWD No. 1
East Empire Glorita-Yeso
Produced Water Analysis

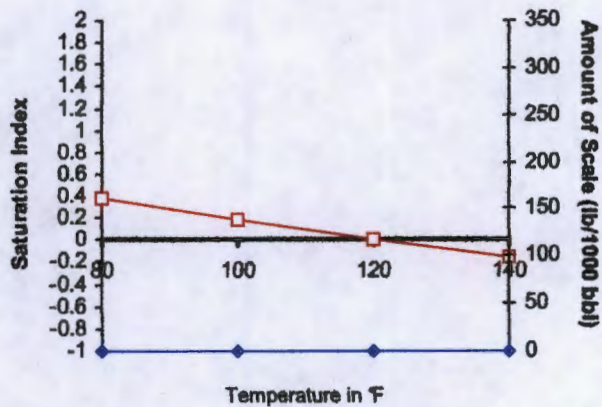
Scale Predictions from Baker Petrolite

Analysis of Sample 583097 @ 75 °F for APACHE CORPORATION, 08/31/11

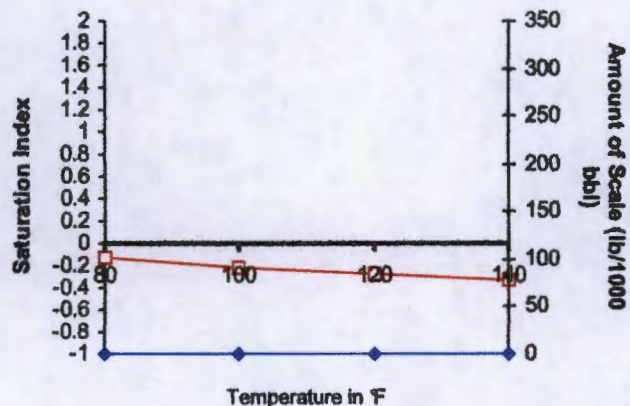
Calcite - CaCO_3



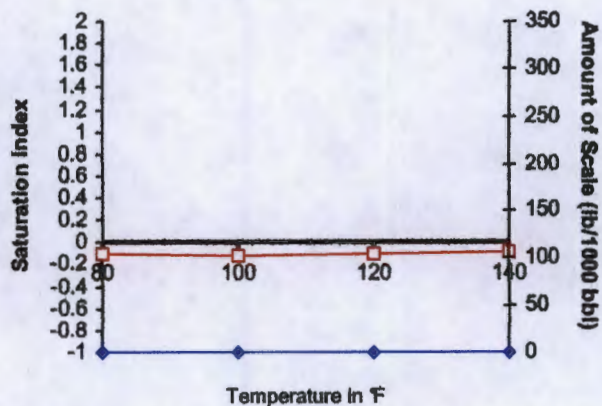
Barite - BaSO_4



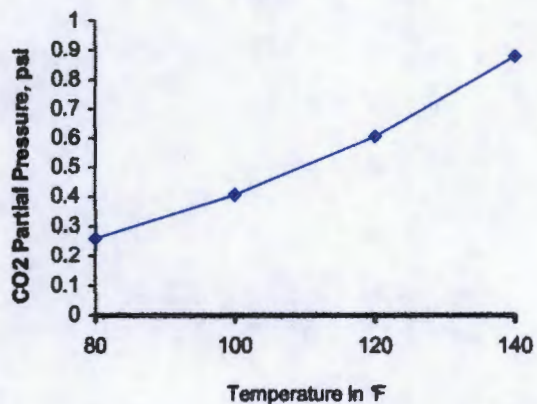
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



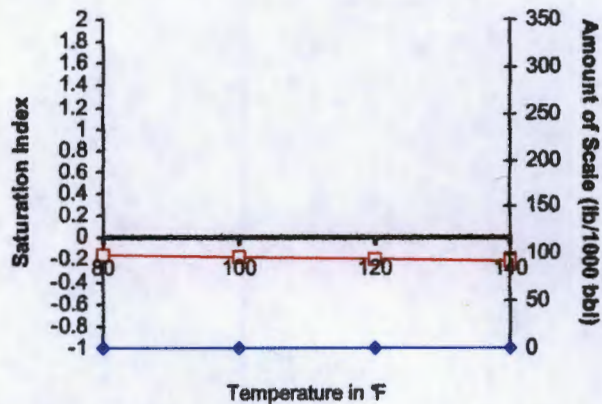
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Shella Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company: APACHE CORPORATION	Sales RDT: 33514
Region: PERMIAN BASIN	Account Manager: REGGIE GUY (575) 513-9135
Area: ARTESIA, NM	Sample #: 629369
Lease/Platform: D STATE	Analysis ID #: 125753
Entity (or well #): 71	Analysis Cost: \$90.00
Formation: UNKNOWN	
Sample Point: WELLHEAD	

Summary		Analysis of Sample 629369 @ 75 F					
Sampling Date:	10/02/12	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	10/31/12	Chloride:	128179.0	3615.46	Sodium:	71732.3	3120.18
Analyst:	SANDRA GOMEZ	Bicarbonate:	353.8	5.8	Magnesium:	1993.0	163.95
		Carbonate:	0.0	0.	Calcium:	6936.0	346.11
TDS (mg/l or g/m3):	212303.4	Sulfate:	1899.0	39.54	Strontium:	187.0	4.27
Density (g/cm3, tonne/m3):	1.142	Phosphate:			Barium:	0.1	0.
Anion/Cation Ratio:	1	Borate:			Iron:	12.0	0.43
		Silicate:			Potassium:	1011.0	25.86
Carbon Dioxide:	160 PPM	Hydrogen Sulfide:		17 PPM	Aluminum:		
Oxygen:	0 PPM	pH at time of sampling:		6.6	Chromium:		
Comments:		pH at time of analysis:			Copper:		
		pH used in Calculation:		6.6	Lead:		
					Manganese:	0.200	0.01
					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	0.77	31.10	0.04	89.03	0.07	120.70	0.10	23.68	-0.06	0.00	0.6
100	0	0.84	34.81	-0.04	0.00	0.06	100.44	0.08	17.69	-0.26	0.00	0.75
120	0	0.90	38.24	-0.10	0.00	0.07	118.99	0.06	14.27	-0.44	0.00	0.91
140	0	0.96	42.23	-0.16	0.00	0.11	168.92	0.06	13.13	-0.60	0.00	1.09

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

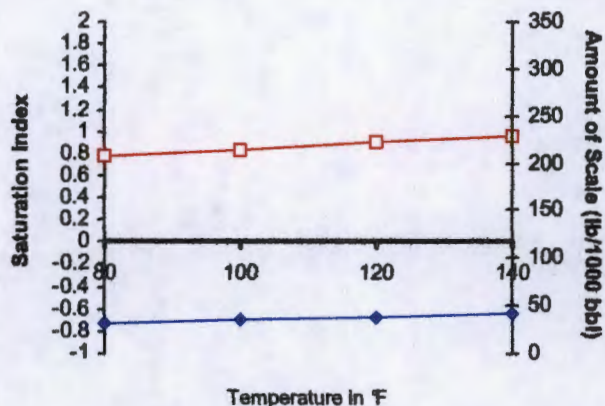
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

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

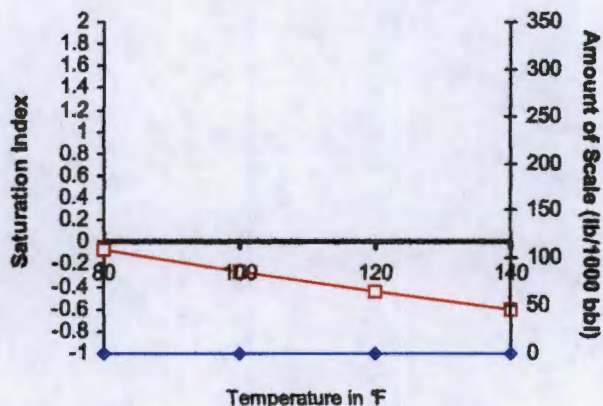
Scale Predictions from Baker Petrolite

Analysis of Sample 629369 @ 75 °F for APACHE CORPORATION, 10/31/12

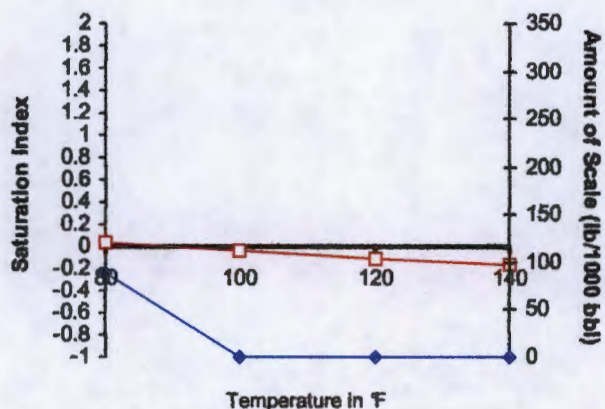
Calcite - CaCO_3



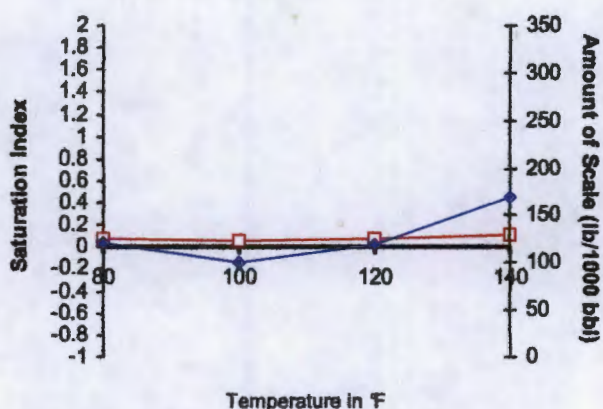
Barite - BaSO_4



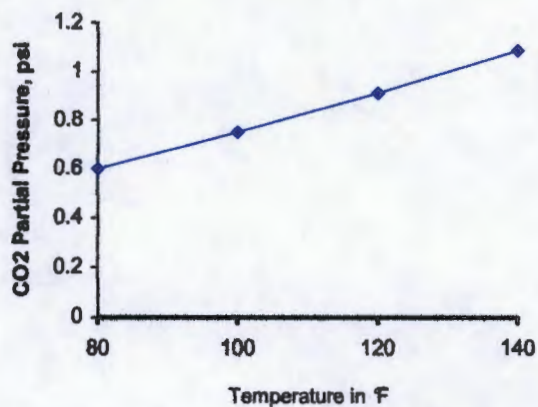
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



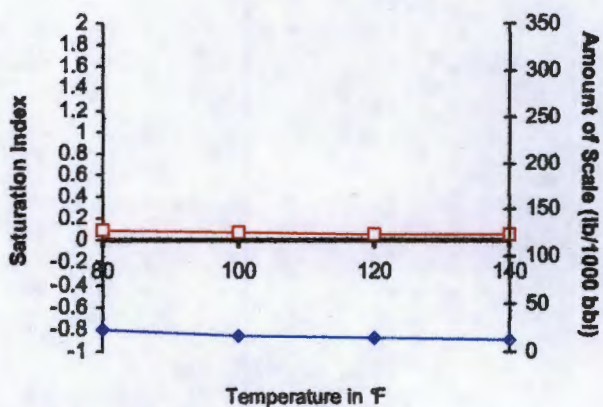
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4





New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 31

Township: 17S

Range: 28E

**Apache Corporation
Form C-108:
AAO Federal SWD No. 1
Fresh Water Well Data**

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.



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

No records found.

PLSS Search:

Section(s): 35, 36

Township: 17S

Range: 27E

**Apache Corporation
Form C-108:
AAO Federal SWD No. 1
Fresh Water Well Data**

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.



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

No records found.

PLSS Search:

Section(s): 6, 7

Township: 18S

Range: 28E

**Apache Corporation
Form C-108:
AAO Federal SWD No. 1
Fresh Water Well Data**

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.



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

No records found.

PLSS Search:

Section(s): 1, 2, 11, 12 Township: 18S Range: 27E

Apache Corporation
Form C-108:
AAO Federal SWD No. 1
Fresh Water Well Data

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.

Form C-108
Affirmative Statement
Apache Corporation
AAO Federal SWD No. 1
Section 1, T-18 South, R-27 East, NMPM,
Eddy County, New Mexico

Available geologic and engineering data has been examined and no evidence of open faults or hydrological connection between the injection zone and any underground sources of drinking water has been found.

David Catanach

David Catanach
Agent for Apache Corporation

6/25/14

Date

June 25, 2014

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

TO: OFFSET OPERATORS/LEASEHOLD OWNERS & SURFACE OWNER

Re: Apache Corporation
Form C-108 (Application for Authorization to Inject)
AAO Federal SWD No. 1
API No. N/A
2470' FNL & 2380' FEL, Unit G, Section 1, T-18S, R-27E, NMPM,
Eddy County, New Mexico

Ladies & Gentlemen:

Enclosed please find a copy of Oil Conservation Division Form C-108 (Application for Authorization to Inject) for the Apache Corporation AAO Federal SWD No. 1. You are being provided a copy of the application as an offset operator/leaseholder or as the owner of the surface where the proposed well is located. Apache Corporation proposes to drill the AAO Federal SWD No. 1 and utilize the well as a produced water disposal well, injection to occur into the Wolfcamp, Cisco, Canyon and Strawn formations through the perforated interval from approximately 6,806 feet to 9,200 feet.

Objections must be filed with the Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, within 15 days.

If you should have any questions, please contact me at (505) 690-9453.

Sincerely,



David Catanach-Agent
Apache Corporation
303 Veterans Airpark Lane, Suite 3000
Midland, Texas 79705

Enclosure

27E

28E

36

31

17S

Tract 1

Tract 2

Tract 5

Tract 4

1

6

Tract 3

$\frac{1}{2}$ Mile

18S

**AAO Federal
SWD No. 1**

**Apache Corporation
Form C-108: AAO Federal SWD No. 1
 $\frac{1}{2}$ Mile Notice Area
Tract Identification Map**

**Apache Corporation
Form C-108: AAO Federal SWD No. 1
Section 1, T-18 South, R-27 East, NMPM
Eddy County, New Mexico**

Offset Leasehold Owner/Operator Notification List (See Attached Map)

Tract No. 1 (SE/4 SW/4 of Section 36-17S-27E)

Leasehold Owners and/or Operator: (Leasehold as to Depths from the Base of the Abo to 10,160')

Mewbourne Oil Company
Mewbourne & Daughters
Mewbourne Development Partners 1992 GP
Mewbourne Development Corporation
P.O. Box 7698
Tyler, Texas 75711

Unit Petroleum Company
7130 South Lewis, Suite 1000
Tulsa, Oklahoma 74136

CWM 2000-C, Ltd.
3901 South Broadway
Tyler, Texas 75701

Yates Petroleum Corporation
105 S. Fourth Street
Artesia, New Mexico 88210

Myco Industries, Inc.
P.O. Box 840
Artesia, New Mexico 88211

COG Operating, LLC
One Concho Center
600 W. Illinois Ave.
Midland, Texas 79701

Tract No. 2 (SW/4 SE/4 of Section 36-17S-27E)

Leasehold Owners and/or Operator: (Leasehold as to Depths from the Base of the Abo to 10,160')

Mewbourne Oil Company

Mewbourne & Daughters

Mewbourne Development

Unit Petroleum Company

CWM 2000-C, Ltd.

COG Operating, LLC

Apache Corporation
Form C-108: AAO Federal SWD No. 1
Section 1, T-18 South, R-27 East, NMPM
Eddy County, New Mexico
Offset Leasehold Owner/Operator Notification List (Page 2)

**Tract No. 3 (NE/4, SE/4 NW/4, SE/4, E/2 SW/4 of Section 1-18S-27E, SW/4 NW/4
& NW/4 SW/4 of Section 6-18S-28E)**

Leasehold Owners and/or Operators:

Apache Corporation

Mewbourne Oil Company

Navajo Refining Company

P.O. Box 159

Artesia, New Mexico 88211

Tract No. 4 (NE/4 NW/4 of Section 1-18S-27E)

Leasehold Owners and/or Operator: (Leasehold as to Depths from the Base of the Abo to 10,124')

Mewbourne Oil Company

CWM 2000-D, Ltd.

3901 South Broadway

Tyler, Texas 75701

Unit Petroleum Company

Apache Corporation

Tract No. 5: (W/2 W/2 of Section 1-18S-27E)

Leasehold Owners and/or Operator: (Leasehold as to Depths from the Base of the Abo to 10,124')

Mewbourne Oil Company

CWM 2000-D, Ltd.

Unit Petroleum Company

Apache Corporation

Legacy Reserves Operating, LP

P.O. Box 10848

Midland, Texas 79702

Surface Owner

Bureau of Land Management

620 E. Greene Street

Carlsbad, New Mexico 88220

Form C-108
Apache Corporation
AAO Federal SWD No. 1
Section 1, T-18 South, R-27 East, NMPM,
Eddy County, New Mexico

The following-described legal notice will be published in the:

Artesia Daily Press
503 W. Main Street
Artesia, New Mexico 88210-2067

The Affidavit of Publication will be forwarded to the Division upon receipt by Apache Corporation.

LEGAL NOTICE

Apache Corporation, 303 Veterans Airpark Lane, Suite 3000, Midland, Texas 79705 has filed a Form C-108 (Application for Authorization to Inject) with the Oil Conservation Division ("Division") seeking administrative approval to utilize its proposed AAO Federal SWD No. 1 (API No. N/A) to be drilled 2470 feet from the North line and 2380 feet from the East line (Unit G) of Section 1, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico and complete the well as a produced water disposal well in the Wolfcamp, Cisco, Canyon and Strawn formations. Injection is to occur through the perforated interval from approximately 6,806 feet to 9,200 feet.

Produced water from the Glorieta & Yeso formations originating from Apache Corporation operated wells in this area will be injected into the AAO Federal SWD No. 1 at average and maximum rates of 4,000 and 15,000 barrels of water per day, respectively. The initial surface injection pressure for the well is anticipated to be at or below 1,361 psi., which is in compliance with Division regulations. The maximum surface injection pressure will be determined by step rate injection test.

Interested parties must file objections with the New Mexico Oil Conservation Division, 1220 S. St Francis Drive, Santa Fe, New Mexico 87505, within 15 days of the date of this publication.

Additional information can be obtained by contacting Mr. David Catanach Agent-Apache Corporation at (505) 690-9453.

7013 2630 0000 9072 3225

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 Certified Fee \$3.30

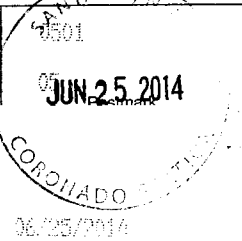
Ret (Endorse) \$2.70
 Restrict (Endorse) \$0.00

Total F
Mewbourne Oil Company
Mewbourne & Daughters

Sent To **Mewbourne Development Part. 1992 GP**
Mewbourne Development Corporation
 Street, or PO Box **P.O. Box 7698**
 City, State, ZIP+4® **Tyler, Texas 75711**

PS Form

Instructions



7013 2630 0000 9072 3195

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For delivery information visit our website at www.usps.com

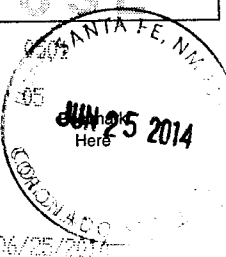
ARTESIA NM 88210

Postage \$2.03
 Certified Fee \$3.30
 Return Receipt Fee (Endorsement Required) \$2.70
 Restricted Delivery Fee (Endorsement Required) \$0.00
 Total \$8.03

Sent **Yates Petroleum Corporation**
 Street, or PO Box **105 S. Fourth Street**
 City, State, ZIP+4® **Artesia, New Mexico 88210**

PS Form 3800, August 2006

Instructions



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To **COG Operating, LLC**
One Concho Center
 Street, or PO Box **600 W. Illinois Ave.**
 City, State, ZIP+4® **Midland, Texas 79701**

PS Form 3800, August 2006

See Reverse for Instructions



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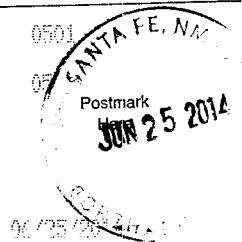
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TULSA OK 74136

Postage \$2.03
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 Return Receipt Fee (Endorsement Required) \$2.70
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Sent **Unit Petroleum Company**
 Street, or PO Box **7130 South Lewis, Suite 1000**
 City, State, ZIP+4® **Tulsa, Oklahoma 74136**

PS Form 3800, August 2006



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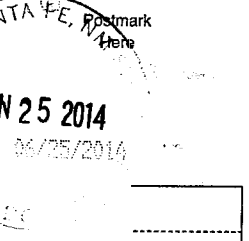
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TYLER TX 75701

Postage \$2.03
 Certified Fee \$3.30
 Return Receipt Fee (Endorsement Required) \$2.70
 Restricted Delivery Fee (Endorsement Required) \$0.00

Sent **CWM 2000-C, Ltd.**
CWM 2000-D, Ltd.
 Street, or PO Box **3901 South Broadway**
 City, State, ZIP+4® **Tyler, Texas 75701**

PS Form 3800, August 2006



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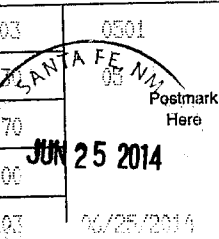
ARTESIA NM 88211

Postage \$2.03
 Certified Fee \$3.30
 Return Receipt Fee (Endorsement Required) \$2.70
 Restricted Delivery Fee (Endorsement Required) \$0.00

Sent **Myco Industries, Inc.**
 Street, or PO Box **P.O. Box 840**
 City, State, ZIP+4® **Artesia, New Mexico 88211**

PS Form 3800, August 2006

See Reverse for Instructions



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MIDLAND TX 79702

Postage	\$	\$2.03	0501 SANTA FE, NM 05 Postmark Here JUN 25 2014
Certified Fee		\$3.30	
Return Receipt Fee (Endorsement Required)		\$2.70	
Restricted Delivery Fee (Endorsement Required)		\$0.00	
Total		\$8.03	06/25/2014

Sent **Legacy Reserves Operating, LP**
 Street or P.O. **P.O. Box 10848**
 City, **Midland, Texas 79702**

PS Form 3800, August 2006

See Reverse for Instructions

7013 2630 0000 9072 3164

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ARTESIA NM 88211

Postage	\$	\$2.03	0501 SANTA FE, NM 05 Postmark Here JUN 25 2014
Certified Fee		\$3.30	
Return Receipt Fee (Endorsement Required)		\$2.70	
Restricted Delivery Fee (Endorsement Required)		\$0.00	
Total		\$8.03	06/25/2014

Sent **Navajo Refining Company**
 Street or P.O. **P.O. Box 159**
 City, **Artesia, New Mexico 88211**

PS Form 3800, August 2006

See Reverse for Instructions

7013 2630 0000 9072 3140

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CARLSBAD NM 88220

Postage	\$	\$2.03	0501 SANTA FE, NM 05 Postmark Here JUN 25 2014
Certified Fee		\$3.30	
Return Receipt Fee (Endorsement Required)		\$2.70	
Restricted Delivery Fee (Endorsement Required)		\$0.00	
Total		\$8.03	06/25/2014

Sent **Bureau of Land Management**
 Street or P.O. **620 E. Greene Street**
 City, **Carlsbad, New Mexico 88220**

PS Form 3800, August 2006

See Reverse for Instructions

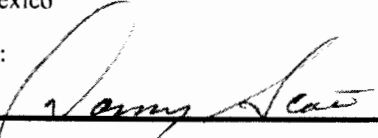
Affidavit of Publication

No. 23060

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 June 25, 2014

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Sixth Publication

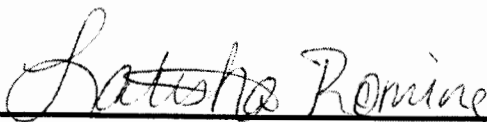
Subscribed and sworn before me this

25th day of June 2014



OFFICIAL SEAL
Latisha Romine
NOTARY PUBLIC-STATE OF NEW MEXICO

My commission expires: 5/12/2015



Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

LEGAL NOTICE

Apache Corporation, 303 Veterans Airpark Lane, Suite 3000, Midland, Texas 79705 has filed a Form C-108 (Application for Authorization to Inject) with the Oil Conservation Division ("Division") seeking administrative approval to utilize its proposed AAO Federal SWD No. 1 (API No. N/A) to be drilled 2470 feet from the North line and 2380 feet from the East line (Unit G) of Section 1, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico and complete the well as a produced water disposal well in the Wolfcamp, Cisco, Canyon and Strawn formations. Injection is to occur through the perforated interval from approximately 6,806 feet to 9,200 feet.

Produced water from the Glorieta & Yeso formations originating from Apache Corporation operated wells in this area will be injected into the AAO Federal SWD No. 1 at average and maximum rates of 4,000 and 15,000 barrels of water per day, respectively. The initial surface injection pressure for the well is anticipated to be at or below 1,361 psi., which is in compliance with Division regulations. The maximum surface injection pressure will be determined by step rate injection test.

Interested parties must file objections with the New Mexico Oil Conservation Division, 1220 S. St Francis Drive, Santa Fe, New Mexico 87505, within 15 days of the date of this publication.

Additional information can be obtained by contacting Mr. David Catanach Agent-Apache Corporation at (505) 690-9453.

Published in the Artesia Daily Press, Artesia, N.M., June 25 2014 Legal No. 23060.



C-108 Review Checklist: Received 06/26/14 Add. Request: — Reply Date: — Suspended: — [Ver 13]

PERMIT TYPE: WFX / PMX (SWD) Number: 1503 Permit Date: 10/08/14 Legacy Permits/Orders: NA

Well No. 1 Well Name(s): AAO Federal SWD <see SWD-1466; 30-015-27163; Chalk Bluff Fed SWD

API: 30-0 15-42549 Spud Date: TBD New or Old: New (UIC Class II Primacy 03/07/1982)

Footages 2470 FNL / 2380 FEL Lot — or Unit G Sec 1 Tsp 18S Rge 27E County Eddy

General Location: ~9 mi SE of Artesia / south of US82 Pool: SWD: Wolfcamp-Cisco SWD: Strawn
SWD: Canyon Pool No.: —

BLM 100K Map: Artesia Operator: Apache Corporation OGRID: 873 Contact: D. Catanach

COMPLIANCE RULE 5.9: Total Wells: 298 Inactive: 3 Fincl Assur: Yes Compl. Order? No IS 5.9 OK? Yes Date: 10/08/14

WELL FILE REVIEWED ☒ Current Status: Approved BLM APD - some differences in casing / cmt from C-108

WELL DIAGRAMS: NEW: Proposed ☒ or RE-ENTER: Before Conv. ☐ After Conv. ☐ Logs in Imaging: No CBL in APD

Planned Rehab Work to Well: * Used APD for detail / agent requested original interval depth of 9200 ft be used

Well Construction Details:	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Sx or Cf	Cement Top and Determination Method
Planned <input checked="" type="checkbox"/> or Existing <u>Surface</u>	<u>17 1/2 / 13 3/8</u>	<u>0 to 400</u>	<u>415</u>	<u>Cir. to surface</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Intern/Prod</u>	<u>12 3/4 / 9 5/8</u>	<u>0 to 4500</u>	<u>None</u>	<u>Cir. to surface</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Intern/Prod</u>	<u>8 3/4 / 7</u>	<u>0 to 9100</u>	<u>DI/16000</u>	<u>1st 475' 70 2nd 300' TOC 3000 / ckt.</u>
Planned <input type="checkbox"/> or Existing <u>Prod/Liner</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>— run CBL for 7"</u>
Planned <input type="checkbox"/> or Existing <u>Liner</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Planned <input checked="" type="checkbox"/> or Existing <u>OH (PERF)</u>	<u>to be in 7 in determined following</u>	<u>6806 to 9200</u>	<u>Inj Length 2394</u>	

Injection Stratigraphic Units:	Depths (ft)	Injection or Confining Units	Completion/Operation Details:
Adjacent Unit: Litho. Struc. Por.		<u>Tubb</u>	Drilled TD <u>9100</u> * PBDT <u>9100</u>
Confining Unit: Litho. <u>(Struc.)</u> Por.		<u>Wolfcamp</u>	NEW TD <u>—</u> NEW PBDT <u>—</u>
Proposed Inj Interval TOP:	<u>6806</u>	<u>Wolfcamp 2nd</u>	NEW Open Hole <input type="checkbox"/> or NEW Perfs <input checked="" type="checkbox"/>
Proposed Inj Interval BOTTOM:	<u>9200</u>	<u>Strawn 5 units</u>	Tubing Size <u>4 1/2</u> in. Inter Coated? <u>Yes</u>
Confining Unit: Litho. Struc. <u>(Por)</u>	<u>200 ft</u>	<u>Atoka</u>	Proposed Packer Depth <u>6706</u> ft
Adjacent Unit: Litho. Struc. Por.		<u>Morrow</u>	Min. Packer Depth <u>6706</u> (100-ft limit)
			Proposed Max. Surface Press. <u>1361</u> psi
			Admin. Inj. Press. <u>1361</u> (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P Noticed? NA BLM Sec Ord No WIPP Noticed? NA SALT/SALADO T: — B: — CLIFF HOUSE —

FRESH WATER: Aquifer Shallow alluvial / artesian Max Depth 300 to 360 HYDRO AFFIRM STATEMENT By Qualified Person ☒

NMOSE Basin: Roswell Artesian CAPITAN REEF: thru — adj ☐ NA ☒ No. Wells within 1-Mile Radius? 0 FW Analysis NA

Disposal Fluid: Formation Source(s) Glorita / Yeso / GB-3A Analysis? Yes On Lease ☒ Operator Only ☐ or Commercial ☐

Disposal Int: Inject Rate (Avg/Max BWPD): 4000 / 15000 Protectable Waters: Law Pro: 10 Historical — System: Closed ☒ or Open ☐

HC Potential: Producing Interval? Yes - within one mile - but no immediate production Formerly Producing? No Method: Logs OSTP & Other well history — 2-Mile Radius Pool Map ☒

AOR Wells: 1/2-M Radius Map? Yes Well List? Yes Total No. Wells Penetrating Interval: 3 Horizontals? 0

Penetrating Wells: No. Active Wells 3 Num Repairs? 0 on which well(s)? Navajo Refinery WDW Diagrams? Yes

Penetrating Wells: No. P&A Wells 0 Num Repairs? 0 on which well(s)? NA Diagrams? NA

NOTICE: Newspaper Date 6/25/14 Mineral Owner BLM Surface Owner BLM N. Date 6/25/14

RULE 26.7(A): Identified Tracts? Yes Affected Persons: CWM 2000-D / CWM 2000-C / Navajo Refinery / COG N. Date 6/25/14

Permit Conditions: Issues: length of approved interval; HC potential; formation WP; cmt change to 7-inch

Add Permit Cond: CBL for 7 inch casing; injection survey within 1st year plus every 5 years; mudlog & salinity

Dated: July 25, 2014
DRILLING PLAN: BLM COMPLIANCE
 (Supplement to BLM 3160-3)

APACHE CORPORATION (OGRID: 873) AAO FEDERAL SWD #1

Lease #: NMNM-0557371 Projected TD: 9100' GL: 3629'
 2470' FNL & 2380' FEL UL: G SEC: 1 T18S R27E EDDY COUNTY, NM

1. **GEOLOGIC NAME OF SURFACE FORMATION:** Eolian/Piedmont Alluvial Deposits
2. **ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Quaternary Aeolian	Surf	Glorieta	2338'
Rustler	Surf NP	Paddock	3374'
Top of Salt	Surf NP	Blaine	3759'(Oil)
Base of Salt	Surf NP	Tubb	4540'(Oil)
Yates	247'	ABO	5347'(Oil)
Seven Rivers	488'	Wolfcamp	6806'(Oil)
Queen	775'	Cisco	7840'(Oil)
San Andres	1845'	Canyon	8795'
		Strawn	9029'
		TD	9100'

There is not believed to be ground water present in this area.

3. **CASING PROGRAM:** All casing is new & API approved

HOLE SIZE	DEPTH	OD CSG	WEIGHT	COLLAR	GRADE	Mud Wt	COLLAPSE Rating/SF*	BURST Rating/SF*	TENSION Rating/SF*
17-1/2"	0' - 400'	13-3/8"	48#	STC	H-40	8.8 ppg	740/4.043	1730/1.429	322k/19.374
12-1/4"	0' - 4000'	9-5/8"	40#	LTC	J-55	10.0 ppg	2570/1.236	3950/1.429	520k/3.409
	4000' - 4500'		40#	LTC	HCK-55		4230/1.808	3950/1.624	694k/40.952
8-3/4"	0-9100'	7"	26#	LTC	L-80	9.8 ppg	5410/1.180	7240/1.182	511k/2.568

*Calculated Safety Factors based on:

Burst: Mud gradient in annulus for all strings except 7" which uses a 0.30 psi/ft formation pore pressure as backup. Casing is filled with 8.4 ppg fresh water and pressure tested up to 70% of respective casing string's minimum burst rating, but not to exceed 5000 psi.
 Collapse: Mud gradient in annulus and full evacuation of casing.
 Tension: Hole and casing filled with mud.

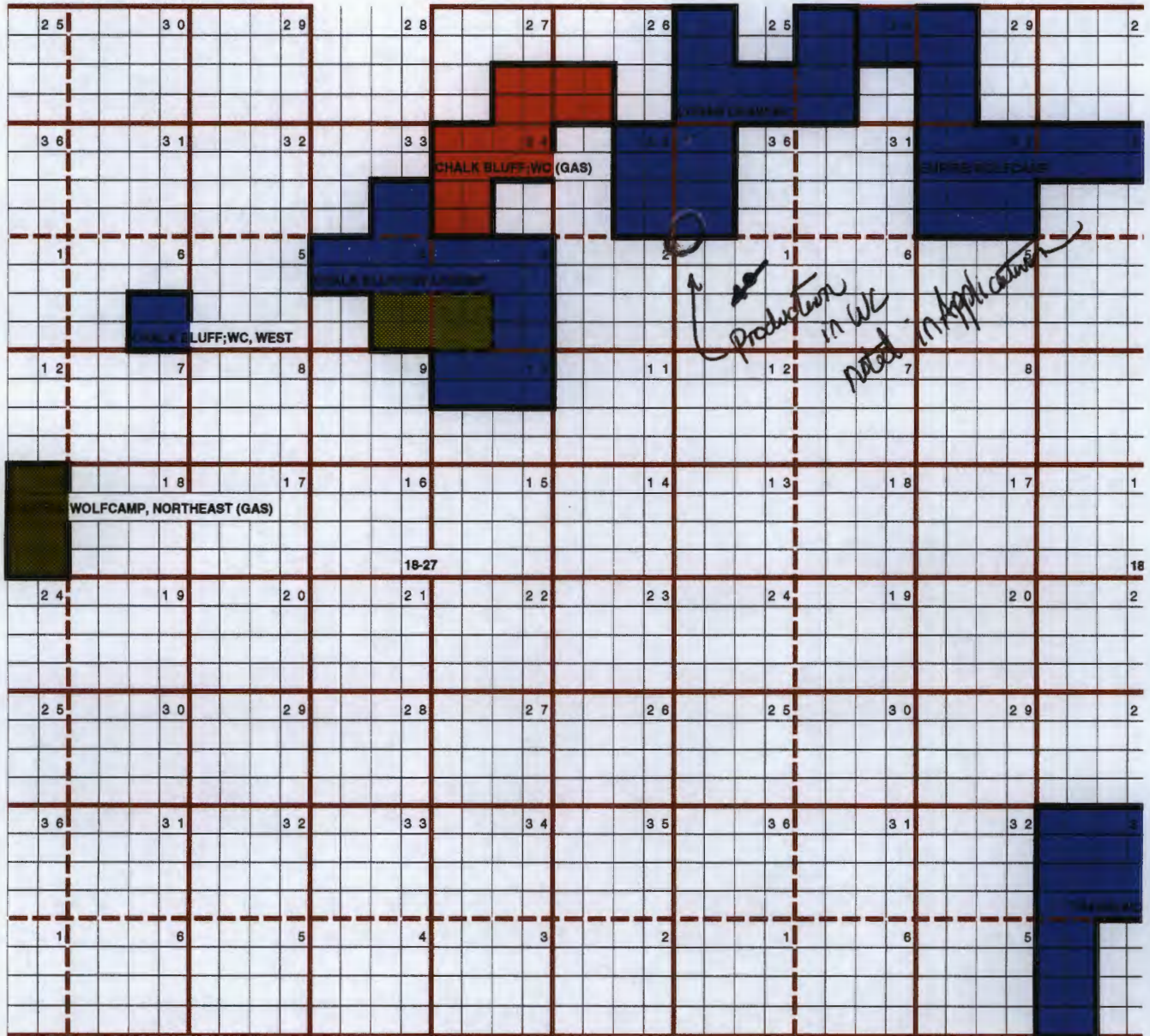
4. **CEMENT PROGRAM:**

- A. **13-3/8" Surface (100% excess cmt to surf) Cmt with:**
Lead: 415 sx Cl C w/ 1% CaCl₂ (14.8wt, 1.34yld, 6.32gal/sk) **Comp Strengths: 12 hr - 813 psi 24 hr - 1205 psi**
- B. **9-5/8" Intermediate (50% excess cmt to surf). Cmt with:**
Lead: 700 sx Cl C 35/65 Poz w/6% Bentonite + 5% Salt (12.4wt, 2.1 yld, 11.65gal/sk)
Comp Strengths: 12 hr - 257 psi 24 hr - 579 psi
Tail: 550 sx Class C (14.8 wt, 1.33 yld, 6.31gal/sx) **Comp Strengths: 12 hr - 813 psi 24 hr - 1205 psi**
- C. **7" Production: (TOC: ~3000' from surface DVT: 6000' 35% excess cmt) Cmt with:**
1st Stage: 475 sx Cl H 50/50 Poz w/2% Bentonite + 5% Salt (14.2 wt, 1.30 yld, 5.81gal/sk)
Comp Strengths: 12 hr - 210 psi 24 hr - 879 psi
2nd Stage Lead: 225 sx Cl C 35/65 Poz w/ 6% Bentonite + 5% Salt (12.4 wt, 2.11 yld, 11.65 gal/sk)
Comp Strengths: 12 hr - 324 psi 24 hr - 569 psi
2nd Stage Tail: 175 sx Class C 50/50 Poz w/2% Bentonite + 5% Salt (14.2 wt, 1.30 yld, 5.81 gal/sk)
Comp Strengths: 12 hr - 210 psi 24 hr - 879 psi

**** The above cmt volumes could be revised pending caliper measurement from open hole logs. For Surface csg: If cmt does not circ to surface, the appropriate BLM office shall be notified, TOC shall be determined by running a method approved by BLM, operator will propose a remediation method & request BLM approval.**

If DVT is set at a different depth, cmt volumes will be adjusted accordingly.

WC Prod



Secs. 35 & 36 T.17S. R.27E.

See 36:

UL/M 30-015-27286 - Chalk Bluff 36 State / DHC-2464 Oil
 U/D 30-015-20907 - No Bluff State Com #1/ Gas

Recompletion / PB to WC 7164'-7277'

- Last six months:

2 to 1 BOPD / 1 MCF PD / 2 to 3 BOPD - 30 to 28 day production

- 2002 Prod.

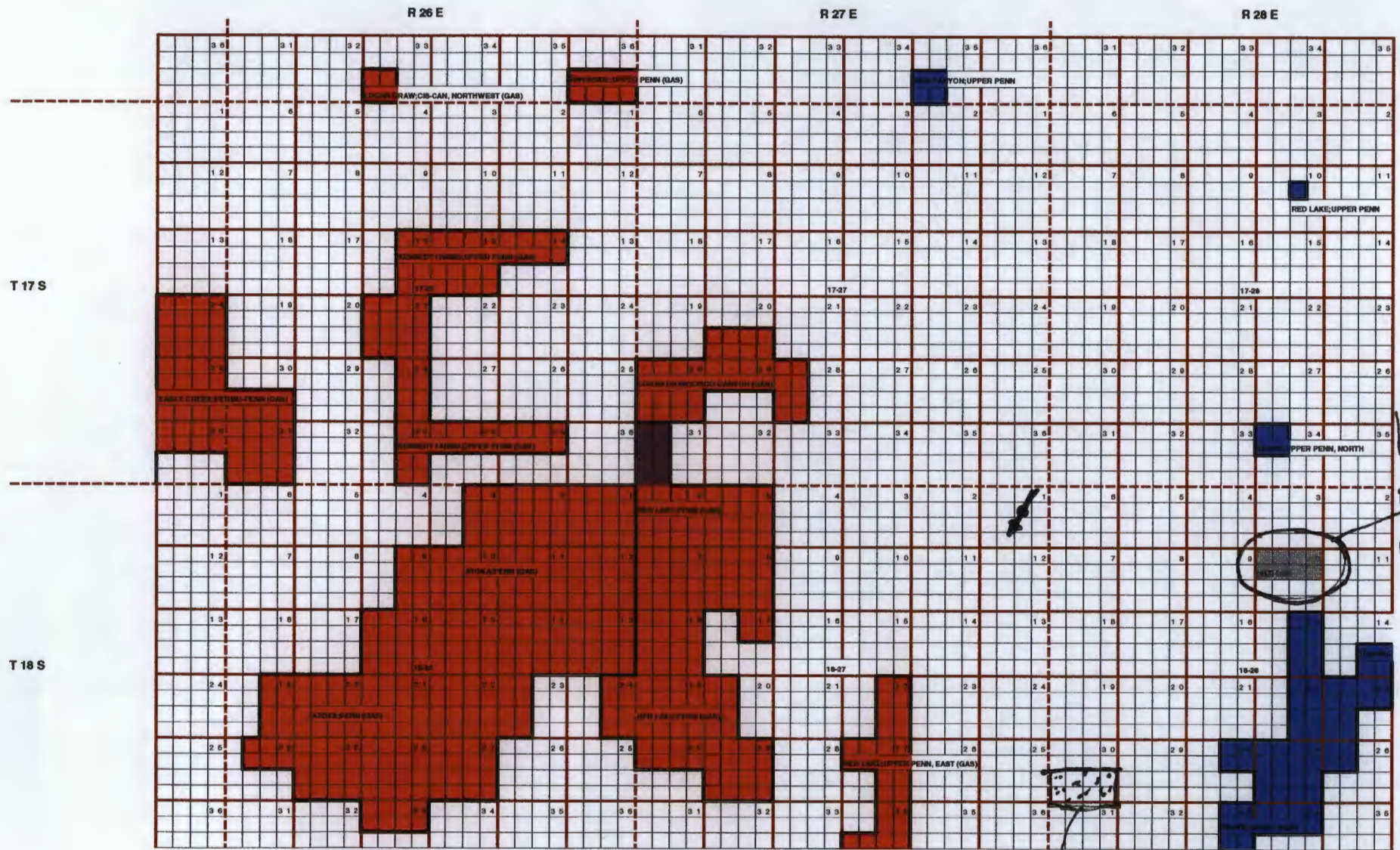
Jan: 10 BOPD / 24 MCF PD / 11 BOPD

- 2001 Prod

Jul - 1st prod

Aug - 27 BOPD / 15 MCF PD / 32 BOPD

Upper TP - Cisco Canyon



see
Sec. 30
Canyon

Cisco
Illinois
Camp

Illinois Camp
Canyon Prod.

[illegible]

Travis
Upper
Penn