DATE IN 11/4/02	SUSPENSE 11/19/02	ENGINEER	LOGGED IN KV	TYPE SWD	APP NO 211445759

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONVERVATION 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:

[NSP-Non-Standard Location] [NSL-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

NOV - 4 2002

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 _____

[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 if 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.

Doug O'Neil		Engineering Manager	10/31/02
Print or Type Name	Signature	Title	Date

Doug.O'Neil@usa.apachecorp.com
e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 SOUTH PACHECO
SANTA FE, NEW MEXICO 87505

Form C-108
Revised 4-1-98

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ☐ Secondary Recovery ☐ Pressure Maintenance ☑ Disposal ☐ Storage
Application qualifies for administrative approval? ☑ Yes ☐ No

II. OPERATOR: **Apache Corporation**
ADDRESS: **6120 South Yale, Suite 1500 Tulsa, Oklahoma 74136-4224**
CONTACT PARTY: **Kara Coday** PHONE: **918-491-4957**

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed 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 radius circle drawn around each proposed injection well. This circle identifies the wells 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 geological 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) overlaying 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: Kara Coday TITLE: Sr. Engineering Technician

SIGNATURE: Kara Coday DATE: 10/31/2002

* 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 circumstance of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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 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 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, 2040 South Pacheco, 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.

ATTACHMENT FOR FORM C-108
ARGO LEASE
MISCELLANEOUS DATA

III. WELL DATA

B. (5)	Next higher oil zone	Grayburg @ (+/-) 3735' - 3962'
	Next lower oil zone	Blinebry @ (+/-) 5500' - 6080'

VII. PROPOSED OPERATION

1.	Average Injection Rate	5000 BWPD	
	Maximum Injection Rate	10,000 BWPD	
2.	Closed Injection System		
3.	Average Injection Pressure	600 psi	
	Maximum Injection Pressure	800 psi (approximate) (will not exceed 0.2 psi/ft to top perforation)	
4.	Source Water	Grayburg	Analysis Attached

VIII. See attached Geological Data prepared by Bruce Uszynski, Sr. Staff Geologist

IX. STIMULATION PROGRAM

Acidize both wells with approximately 1500 - 2000 gals 15% HCL

X. Gamma Ray - Compensated Neutron Log for Argo No. 7 enclosed

XI. See attached location plat and analysis for Deck & Bettis fresh water wells

XII. See attached Geological Data prepared by Bruce Uszynski, Sr. Staff Geologist

SAN ANDRES GEOLOGICAL DATA

The San Andres formation has been chosen for water disposal.
The intervals chosen within the San Andres are as follows:

Proposed Injection Formation: San Andres, Top - 3990' Base - 5080'
Proposed Injection Intervals: 4100' - 4200', 4225' - 4285', 4315' - 4377', 4400' - 4430', 4484' - 4530'

The San Andres formation is overall a thick, porous dolomite exhibiting excellent porosity. In offset logs, porosities are typically in the 15 - 20 % range. These porosity zones are more than adequate to allow for the disposal of produced water. Sufficient barriers exist in the upper and lower portions of the San Andres formations to prevent vertical migration either upwards or downwards into over/underlying productive formations.

Nearest overlying productive formation: Grayburg, Top - 3735' Base - 3962'
Distance to uppermost San Andres perforation: 138'

Next lowest productive zone: Blinebry, Top - 5500' Base - 6080'
Distance from lowest San Andres perforation to top of Blinebry: 970'

The deepest known fresh water in this immediate area is the Ogallala formation at a depth of 100' - 300', ~3000' above the proposed disposal zone. This should present no hazard to the fresh water acquifers in the area.

The above information is accurate to the best of my knowledge. I have worked in the Permian Basin for the last 22 years. My credentials have been accepted by the NMOCD as an expert witness in this area.

Bruce J. Uszynski
Sr. Staff Geologist
Apache Corporation
(713) 296-6345
bruce.uszynski@usa.apachecorp.com

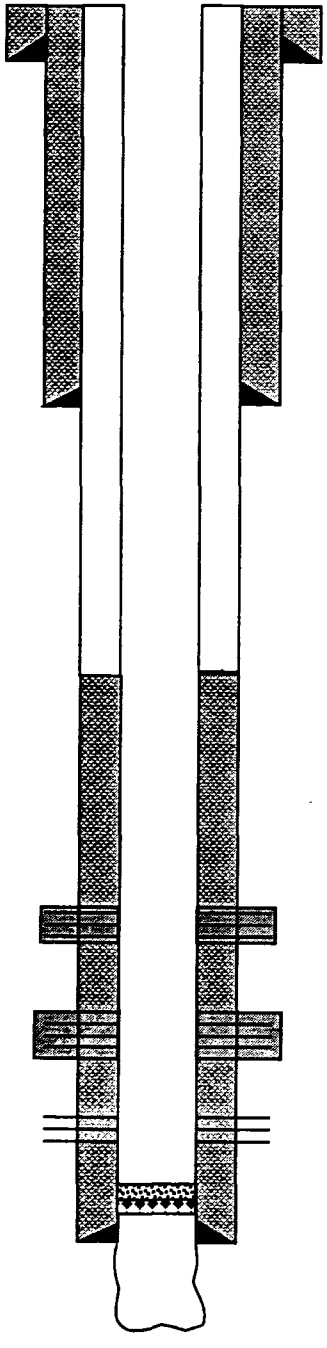
WELL: Argo No. 6

POOL: Current: Hare Simpson / Proposed: Hare; San Andres

LOCATION: 1650' FSL & 2310' FWL
Unit K, Section 15, T-21S, R-37E
Lea County, New Mexico

API NO. 30-025-06603

Current Completion



Surface Casing: 17-1/4" Hole
13-3/8" 32# H-40 CSA 225'
Cement w / 250 sx
Circulated to Surface

Intermediate Casing: 11" Hole
8-5/8" 28# & 32# H-40 CSA 3100'
Cement w / 2000 sx
Circulated to Surface

Drinkard Perfs:
6436 – 6555 (10 Holes)
Cement squeezed w/ 150 sx

Wantz Abo Perfs:
6794 – 7215 (40 Holes)
Cement squeezed w/ 100 sx

Hare Simpson Perfs:
7428 – 7589 (26 Holes)

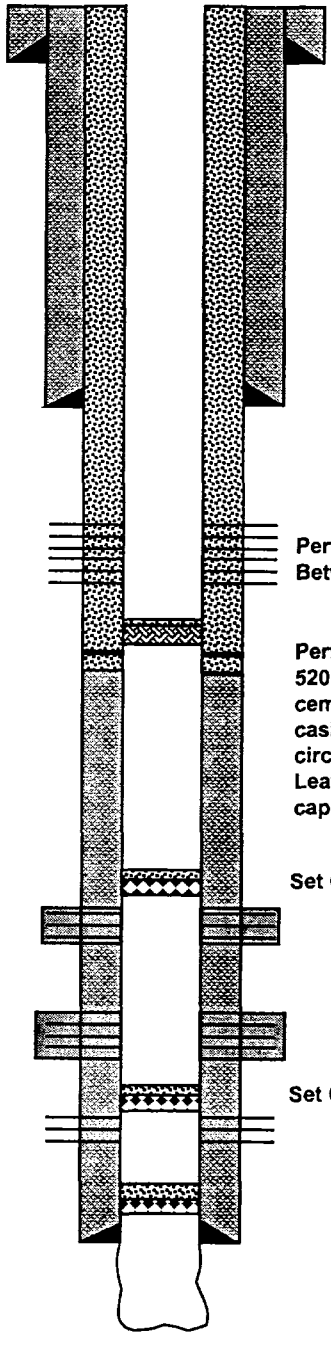
CIBP @ 7760' w/ 35'+ cement cap

Ellenburger Open Hole:
7790 - 7991

Production Casing: 7-7/8" Hole
5-1/2" 15.5# & 17# J-55 CSA 7790'
Cement w / 500 sx
TOC @ 5250' (Freeze Point)

TD @ 7991'

Proposed SWD Completion



Perforate San Andres Between 4000' – 5000'

Perforate 5-1/2" casing @ 5200', set CICR @ 5175', cement squeeze behind casing w/ 1000 sx circulating to surface
Leave CICR @ 5175' w/ cmt cap

Set CIBP @ 6400' w/ 35' cmt

Set CIBP @ 7400' w/ 35' cmt

TD @ 7991'

Argo # 6
API No. 30-025-06603
1650' FSL & 2310' FWL
Sec. 15, T-21S, R-37E
Remedial Operation to Convert to SWD

1.) Set CIBP @ 7400' w/ 35' cement cap

2.) Set CIBP @ 6400' w/ 35' cement cap

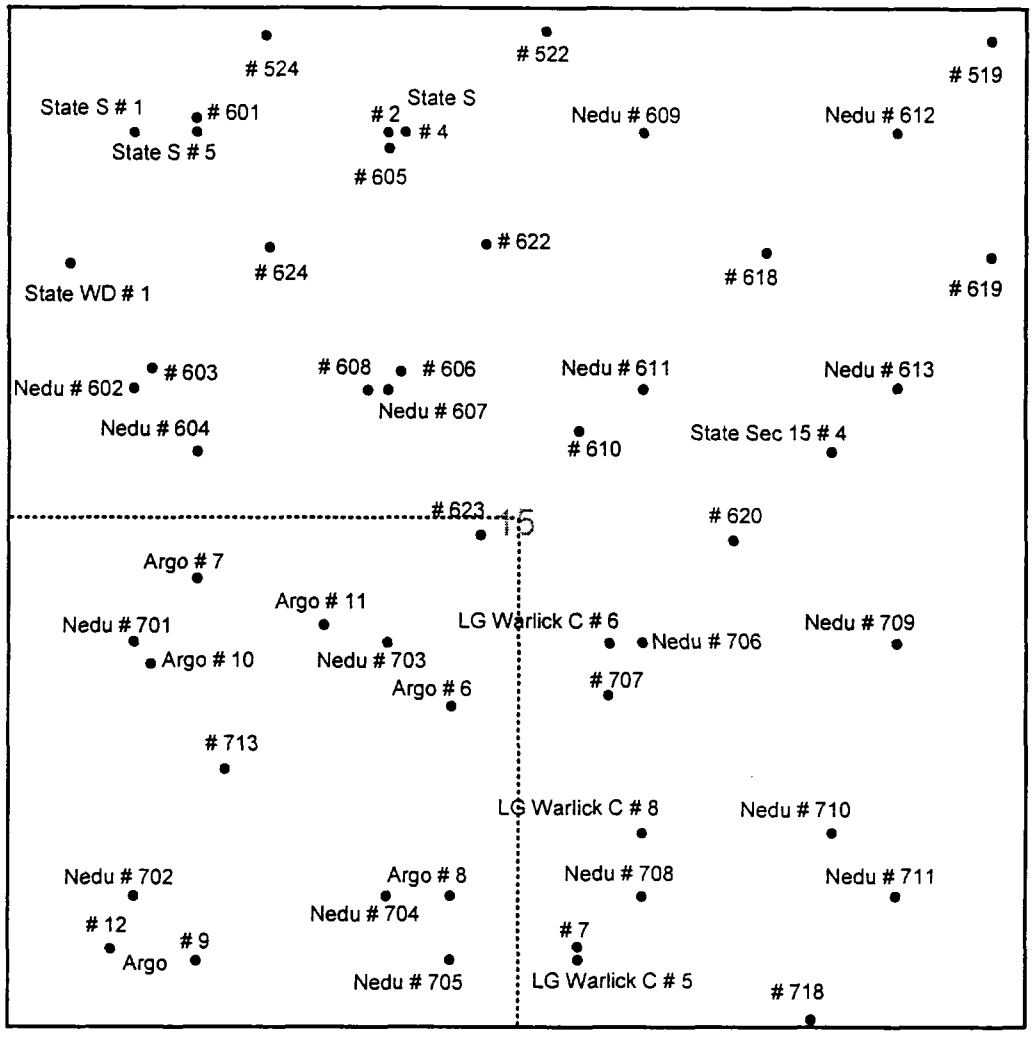
3.) Perforate 5-1/2" casing @ +/- 5200'

4.) Run in hole w/ Cement Retainer and set @ +/- 5175'

5.) Cement squeeze behind 5-1/2" casing w/ 1000 sx - Circulating to Surface

6.) Cap Cement Retainer w/ 2 sx cement

7.) Perforate San Andres between 4000' - 5000' (Perfs to be determined at time of conversion)



Apache CORPORATION

ARGO LEASE
SW1/4 - 160 ACRES / SECTION 15
TOWNSHIP 21S, RANGE 37E
LEA COUNTY, NEW MEXICO

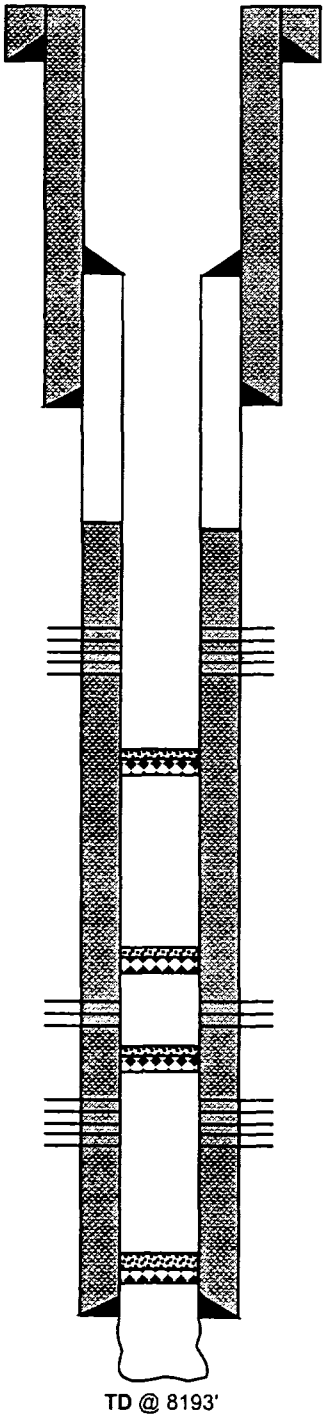
WELL: Argo No. 7

POOL: Current: Penrose Skelly; Grayburg / Proposed: Hare; San Andres

LOCATION: 2310' FSL & 990' FWL
Unit L, Section 15, T-21S, R-37E
Lea County, New Mexico

API NO. 30-025-09915

Current Completion



Surface Casing: 17-1/4" Hole
13-3/8" 32# H-40 CSA 223'
Cement w / 250 sx
Circulated to Surface

Intermediate Casing: 11" Hole
8-5/8" 32# H-40 CSA 2907'
Cement w / 1900 sx
Circulated to Surface

Grayburg Perfs:
3760 – 3974 (460 Holes)

CIBP @ 4500' w/ 35' cement cap

CIBP @ 6350' w/ 35' cement cap

Drinkard Perfs:
6420 – 6636 (48 Holes)

CIBP @ 6700' w/ 35' cement cap

Wantz Abo Perfs:
6821 – 7169 (28 Holes)

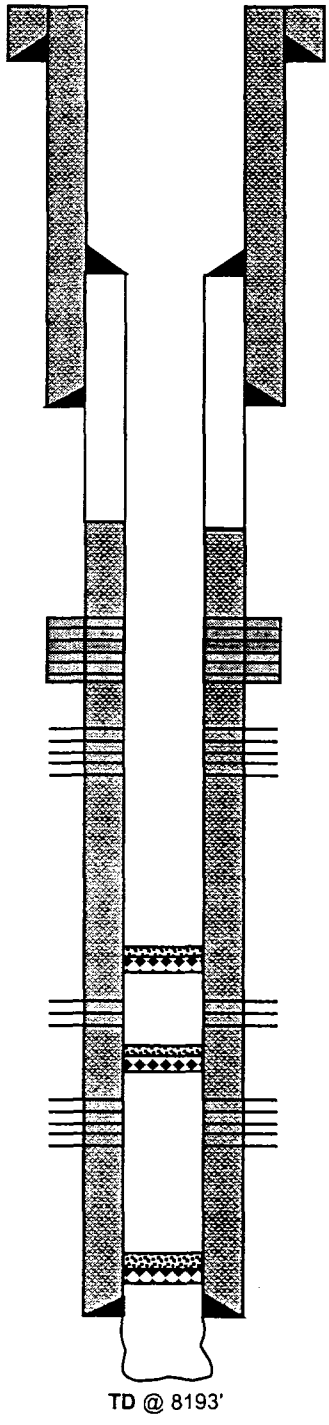
CIBP @ 7900' w/ 35' cement cap

Ellenburger Open Hole:
8016 - 8193

Production Casing: 7-7/8" Hole
5-1/2" 15.5# & 17# J-55 Liner
Liner set @ 2650' – 8016'
Cement w / 779 sx
TOC @ 3280' (CBL)

TD @ 8193'

Proposed SWD Completion



Cement squeeze
Grayburg 3760 – 3974
w/ 500 sx cement

Pressure test squeeze

Drill out CIBP @ 4500'

Perforate San Andres
Between 4000' – 5000'

TD @ 8193'

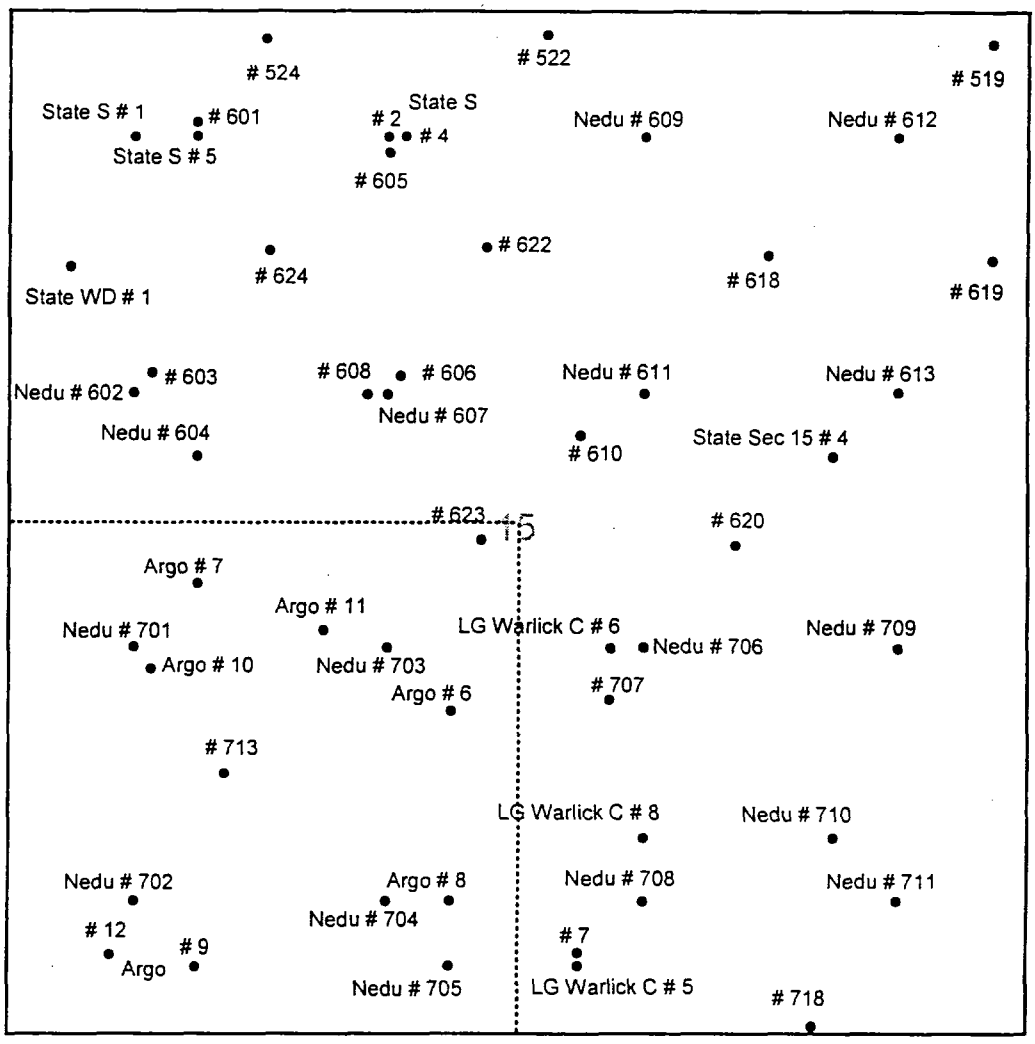
Argo # 7
API No. 30-025-09915
2310' FSL & 990' FWL
Sec. 15, T-21S, R-37E
Remedial Operation to Convert to SWD

1.) Cement squeeze Grayburg perforations 3760' - 3974' w/ 500 sx

2.) Pressure test squeeze job

3.) Drill out CIBP @ 4500'

4.) Perforate San Andres between 4000' - 5000' (Perfs to be determined at time of conversion)



Apache CORPORATION

ARGO LEASE
SW1/4 - 160 ACRES / SECTION 15
TOWNSHIP 21S, RANGE 37E
LEA COUNTY, NEW MEXICO

Submit 3 Copies to Approriate District Office

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
811 South First, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resouces

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

FORM C-103
Revised March 25, 1999

WELL API NO. 30-025-06588

5. Indicate Type of Lease ☑ STATE ☐ FEE

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Northeast Drinkard Unit

1. Type of Well: ☐ OIL WELL ☐ GAS WELL ☑ OTHER **Injection**

2. Name of Operator: Apache Corporation

8. Well No. 610 W

3. Address of Operator: 6120 South Yale, Suite 1500 Tulsa, Oklahoma 74136-4224 **WFX-774**

9. Pool name or Wildcat: Eunice N., Blinebry-Tubb-Drinkard

4. Well Location
Unit Letter G : 2210 Feet From The North Line and 2310 Feet From The West Line
Section 15 Township 21S Range 37E NMPM Lea County

10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3439 DF

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
☐ Perform Remedial Work	☐ Plug and Abandon	☑ Remedial Work	☐ Altering Casing
☐ Temporarily Abandon	☐ Change Plans	☐ Commence Drilling Operations	☐ Plug and Abandonment
☐ Pull or Alter Casing		☐ Casing Test and Cement Job	
☐ Other		☐ Other	

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

9/20/2002
Test anchors-Blow down well-MIRUSU-NUBOP
Take delivery of 2 7/8" N-80 workstring-Rack & tally-PU 5 1/2" Arrow Mod 'PST' rbp & Mod 'CST' pkr
GIH picking up workstring-Set plug @ 5501'-Test to 1000 psi-Circ well clean-Pull up to 5132'-Leave pkr swinging

9/21/2002
Set pkr @ 5132'-Load backside & test to 500 psi-Pump down tbg into leak @ 1 bpm w/ 1000 psi
No returns to surface-Reset pkr @ 5228'-Load backside-Pressure up to 500 psi-Bled off to 400 in 1 min
Pump down tbg-Pressure up to 2000 psi-Csg pressure started to increase-Shut down-Bled off pressure
POOH-LD pkr-PU cmt retainer-GIH to 5132'

9/22/2002
RU Schlumberger-Pump tbg capacity thru retainer-Set retainer @ 5133'-Attempt to pump down tbg
Pressure up to 2000 psi-Leak off 400 psi in 1 min-Sting out of retainer-Pump down tbg to clear debris
Sting back into tbg-Pressure up to 2200 psi-Leak off 400 psi in 1 min-Swab tbg capacity out of tbg
FL holding @ 3000'-Pump down tbg-Pressure up to 2000 psi-Leak off 400 psi in 1 min.-Continue to swab tbg.
Swab tbg dry-Pump down tbg-Pressure up to 2000 psi-Leak off 400 psi in 1 min. (continued)

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Kara Coday TITLE Sr. Engineering Technician DATE 10/29/2002

TYPE OR PRINT NAME Kara Coday TELEPHONE NO. 918-491-4957

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

9/25/2002
Sting out of retainer-Circ above retainer for several hours-Got back LCM & rust chips-Sting into retainer
Pump through retainer @ 1 bpm @ 2000 psi-Set up squeeze for tomorrow

9/26/2002
Pump 60 bbls water through retainer RU Schlumberger-Flush all lines to pit
Test lines to 3500 psi-Pump 30 bbls water ahead of squeeze-Squeeze 5 1/2" csg w/ 100 sks (48 bbls)
Class 'C' cement w/ 0.2% D167-Avg rate 1.5 bpm ATP-1600 Final SIP-2800
Reversed 2 bbls cmt to pit-POOH w/ tbg-SIFWE

9/30/2002
Drill cmt from 5120' to retainer-Drill out retainer-Drill cmt to 5230'-Circ well clean

10/1/2002
Drill cmt from 5230'-5275'-Circ well clean-Test squeeze to 500 psi for 30 mins-OK-GIH to RBP-Circ sand off of plug
POOH-LD drill collars-PU retreiving-GIH-Release RBP-POOH laying down workstring

10/2/2002
GIH w/ 5 1/2" Loc-Set pkr assembly w/ on-off tool & 173 jts 2 3/8" J-55 TK99 tbg-Set pkr @ 5491.43'
w/ EOT @ 5503.47'-Displace backside w/ CRW-172 pkr fluid-Attempt to get an H-5 test while working out air
From engineering: Run bondlog to determine bond across the San Andres zone

10/3/2002
Do final H-5 test on 5 1/2-500 psi for 30 mins-OK-Release pkr-POOH w/ injection tbg-Rack & tally workstring
GIH w/ RBP & PKR-Set plug @ 5500'-Test to 1000-POOH

10/4/2002
RU Computalog-Run GR-CBL-CCL from 5495' to 3000'-Find TOC @ 5055'-RD Computalog
GIH w/ tbg-Release plug-POOH

10/7/2002
GIH w/ CIBP-Set @ 5100'-Test-RU Computalog-Perforate 5 1/2" csg @ 4100' w/ 4 jspf
GIH w/ pkr-Set @ 4024'-Pump into perfs @ 1/4 bpm @ 1800 psi-No returns to surface-POOH w/ pkr
Perforate 5 1/2" csg @ 3500'-GIH w/ pkr-Set @ 3452'-Pump into perfs @ 4 bpm @ 500 psi
w/ returns to the surface from 8 5/8"-Pump 160 bbls to clean up backside.
Reset pkr @ 3518'-Attempt to get communication between perfs pumping down 5 1/2" (500 psi)
Pump down tbg @ 1/2 bpm @ 1800 psi-No returns to surface
Pull pkr above upper perfs

10/8/2002
POOH-LD pkr-GIH w/ cmt retainer-Set @ 4055'-Pump through retainer-SDFN

10/9/2002
RU Schlumberger-Hold safety meeting-Pressure test surface to 3000 psi-Pump 50 bbls water through retainer
Load backside-Pressure to 500 psi-Establish injection rate of 0.5 bpm @ 1660 psi-Squeeze perfs in 5 1/2" csg
w/ 80 sks Class 'C' cmt mixed to 15.1 lbs/gal- Max TP-1753-Hesitated 3 times @ 15 mins each pumping last 3 bbls
ISDP-1666-Reversed 1 bbl to pit-POOH-PU retainer-GIH-Pump 1 1/2 times tbg capacity through retainer-Set @ 3452'
Load backside-Pressure to 500 psi-Established circ to surface through 8 5/8" csg-Squeeze perfs in 5 1/2" csg
w/ 100 sks Class 'C' cmt mixed to 11.8 lbs/gal-120 sks mixed to 13.0 lbs/gal-200 sks mixed to 14.8 lbs/gal
Circ 40 sks to pit-Avg rate 2.1 bpm-Avg psi-120 Left 850 psi on squeeze.-Reverse 2 bbls to pit-POOH w/tbg

10/11/2002
Drill out retainer @ 3452'-Drill out cmt to 3515'-Test squeeze to 1000 psi-Start drlg on retainer @ 4055'

10/14/2002
Drill out retainer @ 4055'-Change out bit-Drill cmt to 4082'-Circ well clean-

10/15/2002
Finish drlg cmt-Test squeeze to 500-OK-POOH
Prep to run CBL

10/16/2002
RU Computalog-Run CBL from 5100' to 2550'-Fax log to Tulsa-GIH & drill out CIBP-Start POOH laying down workstring-SWI-SDFN

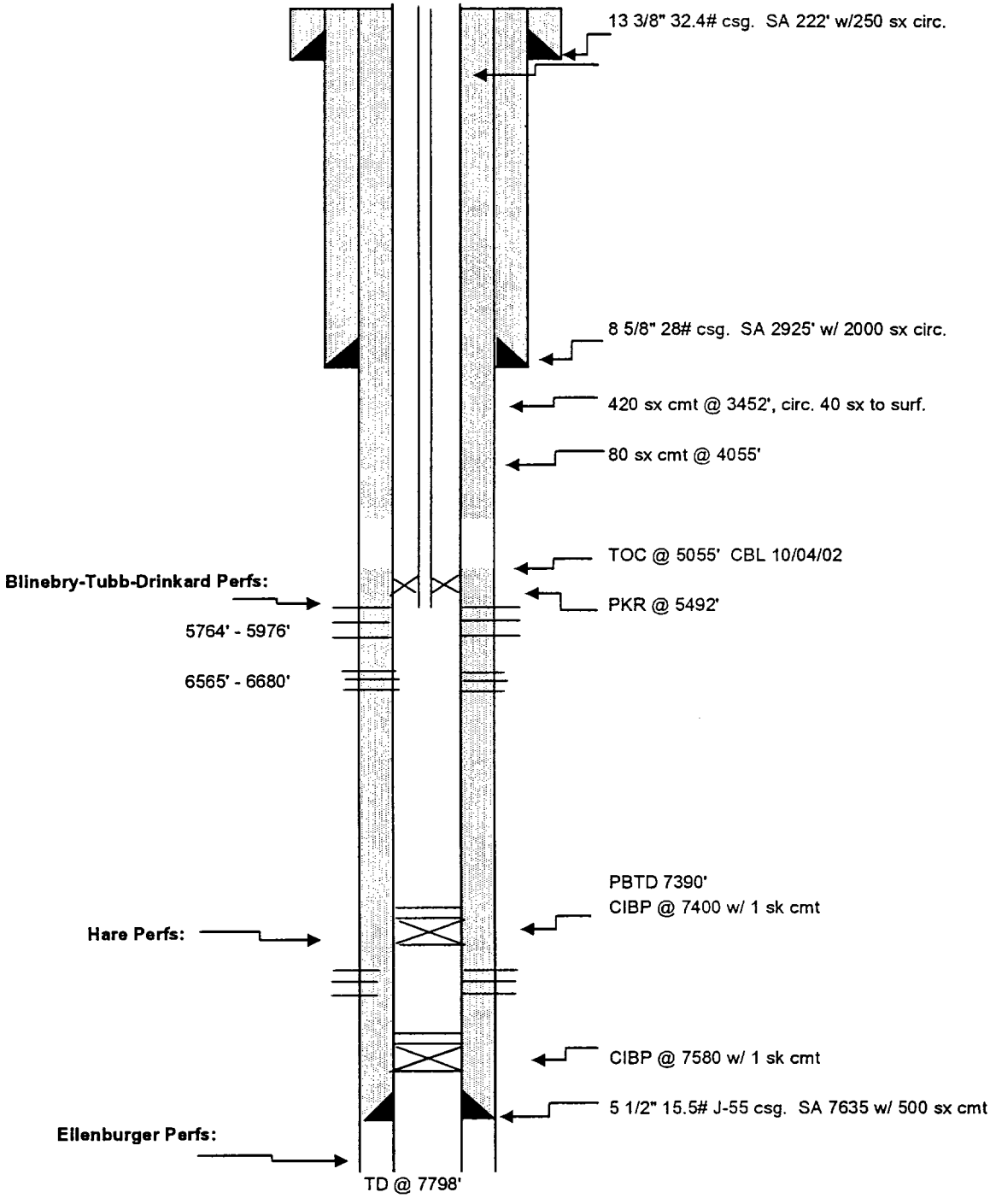
10/17/2002
Finish POOH laying down workstring-GIH w 173 jts 2 3/8" J-55 TK99 tbg-Set pkr @ 5492' w/ EOT @ 5506'

10/18/2002
Displace backside w/ CRW-172 pkr fluid-Test to 500 psi-Have a 50 psi leakoff in 30 mins

10/21/2002
RU Pro Wireline-Set 1.50" plug in 'F' nipple-Test to 1000 psi-Displace backside w/ 10 ppg pkr fluid w/ 1 drum CRW-172 & 3 gals Xcide 302 biocide-'Bump' polymer into leak @ 500 psi-Shut down

10/22/2002
Pressure test backside @ 500 psi for 30 mins-OK-Remove plug from 'F' nipple-RDMO
Tie well to system-Put on injection

Northeast Drinkard Unit #610
Eunice N. Blinebry-Tubb-Drinkard (22900)
2210' FNL, 2310' FWL
Unit G, Sec 15, T-21S, R-37E
Lea County, New Mexico



KAC

11/1/2002

Northeast Drinkard Unit No. 604
REMEDIAL CEMENTING PROCEDURE

WELL: NEDU No. 604 API: 30-025-06591

CASING:

SURFACE: 13 3/8" set@ 334' w/ 350 sx circ.

INTERMEDIATE: 8 5/8" 24 & 32# H-40 csg set@ 2835' w/ 500 sxs. circ.

PRODUCTION: 5 ½" 15.5 & 17 # J-55 csg set @ 8042'. w/400sx. TOC @4170' by CBL.

PBTD: 6765' w/CIBP and cmt.

PROCEDURE

1. RUPU. POH w/ production equipment.
2. RU Wireline and set CIBP at 4500'. Perforate casing at 3950' w/4 JSPF @ 90 deg. phasing. Perforate a second set of holes at 3250' w/4 JSPF @ 90 deg . phasing.
3. RIH w/ tubing and packer and set packer between squeeze holes. Establish circulation behind 5 ½" casing between holes at 3250' and 3950'. Release packer and POH.
4. RIH w/cement retainer and set **below upper set of squeeze holes** at +/- 3280'
5. RIH w/ tubing, sting into retainer and establish circulation down tubing below retainer , behind 5 ½" casing and back up tubing/casing annulus.
6. RU cementers and circulate 100 sx Cl "C" cement behind 5 ½" casing, displacing cement to 3850'. Pull out of retainer and reverse circulate clean and POH.
7. RIH w/ second cement retainer and set **above upper set of squeeze holes** at +/- 3150'
8. RIH w/ tubing, sting into retainer and establish rate into upper set of squeeze holes. RU cementers and squeeze w/ 100 sx Cl "C" cement, leaving 10 sx on top of retainer and POH w/tubing.
9. RIH w/ bit and drill out cement and upper retainer past upper squeeze holes and test to 500 PSIG for 30 min. Continue drilling second retainer and continue down past lower squeeze holes. Pressure test lower set of squeeze holes to 500 psig for 30 min. POH w/bit and tubing.
10. Run CBL from 4500' to top of cement and POH.
11. RIH w/bit and tubing and drill out CIBP set at 4500'. POH w/ drill bit and tubing.
12. RIH with production equipment and place well on production.

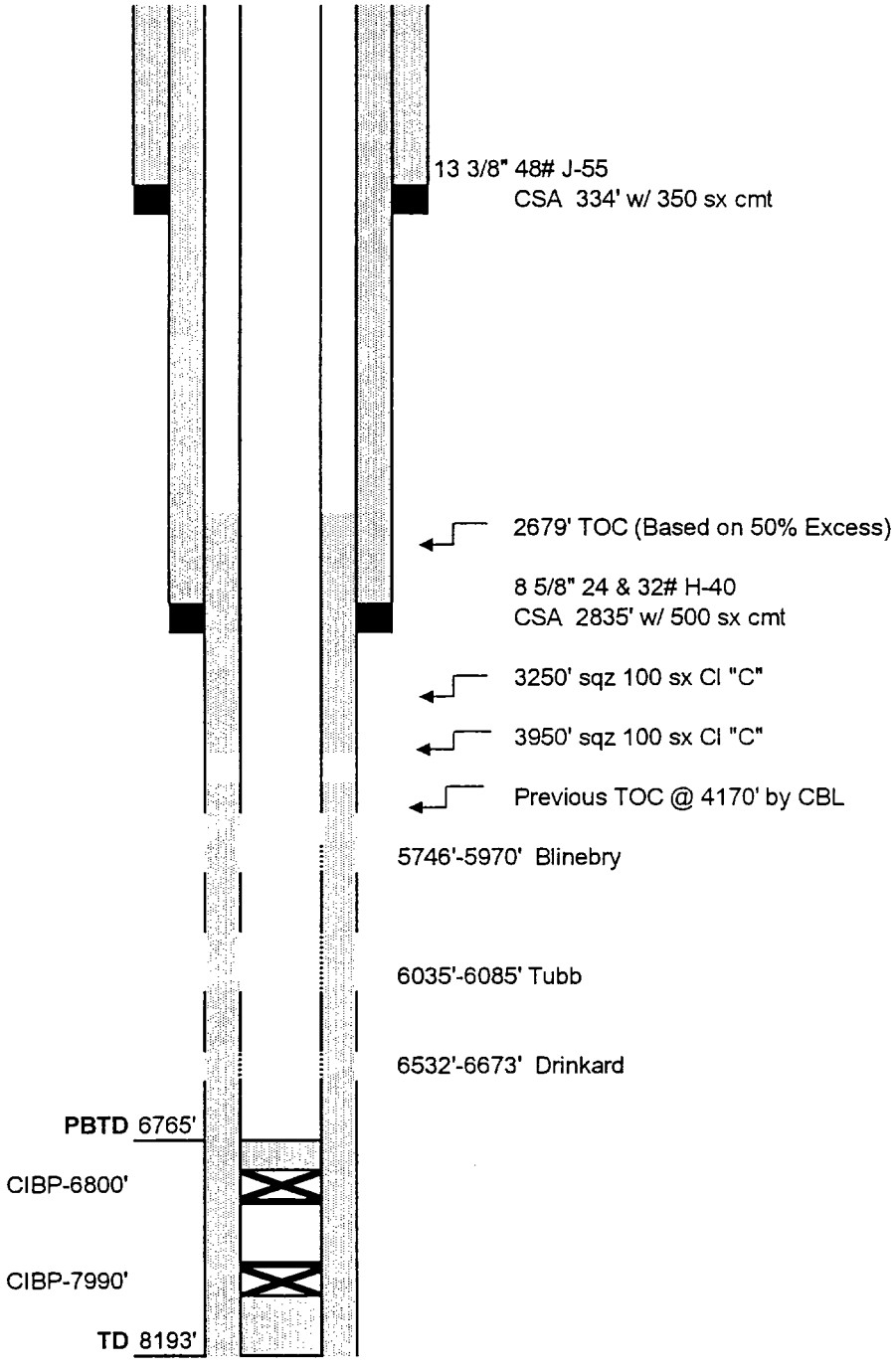
Apache CORPORATION

Property No- API 30-025-06591 ****PROPOSED REMEDIAL WORK****

Lease- Northeast Drinkard Unit Well No. 604 Field Drinkard-Tubb-Bl Date 10/31/02

Legal Desc.- 2310' FNL & 990' FWL Sec 15 Tp 21S Rg 37E

County- Lea State- New Mexico



Northeast Drinkard Unit No. 705
REMEDIAL CEMENTING PROCEDURE

WELL: NEDU No. 705 API: 30-025-06602

CASING:

SURFACE: 13 3/8" set@ 225' w/ 300 sx circ.

INTERMEDIATE: 8 5/8" 32# H-40 csg set@ 2912' w/ 2000 sxs. circ.

PRODUCTION: 5 ½" 15.5 & 17 # J-55 csg set @ 7770'. w/500sx. TOC @4372' by CBL.

PBTD: 5510' w/CIBP and 20' cmt.

PROCEDURE

1. RU Wireline and perforate casing at 4100' w/4 JSPF @ 90 deg. phasing. Perforate a second set of holes at 3550' w/4 JSPF @ 90 deg . phasing.

2. RUPU, RIH w/ tubing and packer and set packer between squeeze holes. Establish circulation behind 5 ½" casing between holes at 3550' and 4100'. Release packer and POH.

3. RIH w/cement retainer and set **below upper set of squeeze holes** at +/- 3580'

4. RIH w/ tubing, sting into retainer and establish circulation down tubing below retainer , behind 5 ½" casing and back up tubing/casing annulus.

5. RU cementers and circulate 100 sx Cl "C" cement behind 5 ½" casing, displacing cement to 4000'. Pull out of retainer, reverse circulate clean and POH.

6. RIH w/ second cement retainer and set **above upper set of squeeze holes** at +/- 3500'

7. RIH w/ tubing, sting into retainer and establish rate into upper set of squeeze holes. RU cementers and squeeze w/ 100 sx Cl "C" cement, leaving 10 sx on top of retainer and POH w/tubing laying down. RD well service unit.

8. Run MIT on casing and return well to TA'd status.

Submit 3 Copies to Approriate District Office

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
811 South First, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resouces

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

FORM C-103
Revised March 25, 1999

WELL API NO. 30-025-06590

5. Indicate Type of Lease ☑ STATE ☐ FEE

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Northeast Drinkard Unit

1. Type of Well: ☑ OIL WELL ☐ GAS WELL ☐ OTHER

2. Name of Operator: Apache Corporation

8. Well No. 608

3. Address of Operator: 2000 Post Oak Blvd., Ste. 100, Houston, Texas 77056-4400

9. Pool name or Wildcat: Eunice N., Blinebry-Tubb-Drinkard

4. Well Location
Unit Letter F : 1980 Feet From The North Line and 1880 Feet From The West Line
Section 15 Township 21S Range 37E NMPM Lea County

10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3441' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
☐ Perform Remedial Work	☐ Plug and Abandon	☐ Remedial Work	☐ Altering Casing
☐ Temporarily Abandon	☐ Change Plans	☐ Commence Drilling Operations	☑ Plug and Abandonment
☐ Pull or Alter Casing		☐ Casing Test and Cement Job	
☐ Other		☐ Other	

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

10/5/2001 MIRU Fleet Cementers. Circulate well w/ 95.# mud. Run in hole w/ 4" casing gun. Tag cement on top of CIBP @ 5476'. Pull up hole to 2855' and perforate. Run in hole to 2855' and pump 25 sx cement. Wait on cement and tag @ 2798'. Pull up hole to 1300'. Spot 25 sx cement plug. Wait on cement and tag @ 1055'. Run in hole w/ 4" casing gun and perforate @ 365'. Run in hole to 385'. Break circulation. Circulate 300 sx cement to surface inside and outside casing. Install P&A marker. Clean location.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE _____ TITLE Sr. Engineering Technician DATE 11/5/2001

TYPE OR PRINT NAME Debra J. Anderson TELEPHONE NO. 713-296-6338

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

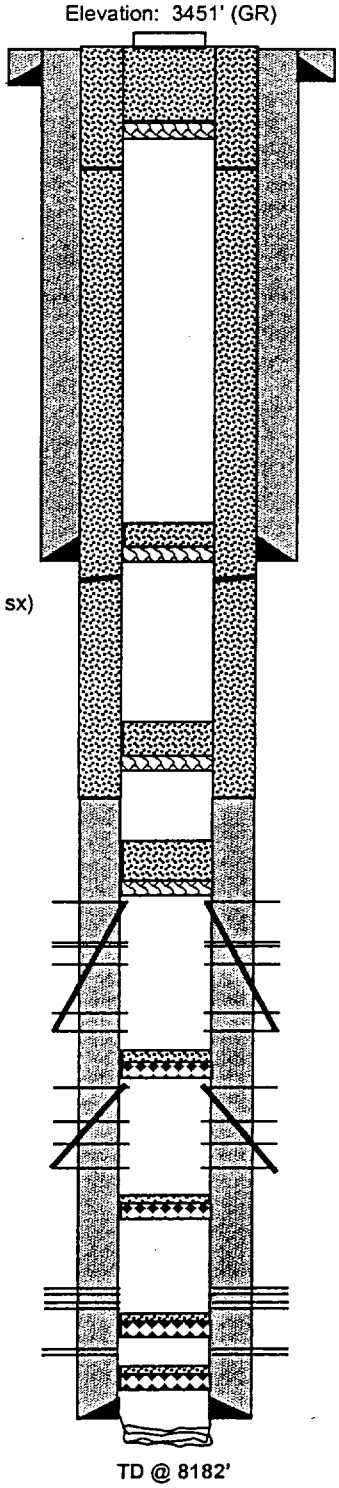
Well: Northeast Drinkard Unit # 603

Field: Eunice N. Blinebry-Tubb-Drinkard

Current Status: P&A (11/93)

Location: 3390' FNL & 760' FWL
Unit E, Sec. 15, T21S, R37E
Lea County, New Mexico

API #: 30-025-09913



Install P&A Marker

CICR @ 750'
Perf 5-1/2" casing @ 800'
Cmt to Surface inside & outside casing

17-1/2" Hole
13-3/8" 36# H-40 CSA 312'
Cement w / 325 sx
Circulated to Surface

CICR @ 2802' (63 sx)
Perf 5-1/2" casing @ 2875'
Cmt sqz 5-1/2" x 8-5/8" annulus (400 sx)
TOC @ 850' (TS)

11" Hole
8-5/8" 24# J-55 CSA 2818'
Cement w / 500 sx
Circulated to Surface

Blinebry Perfs:
5715-5974 (59 Holes)

Tubb Perfs:
5993-6080 (23 Holes)

Drinkard Perfs:
6466-6682 (58 Holes)

Abo Perfs:
6723-7231 (26 Holes)
Cmt sqz w/ 350 sx

CIBP @ 7281' (2 sx)

Hare Perfs:
7742-7938 (596 Holes)

CIBP @ 7950' (2 sx)

Hare Perfs:
7974-90 (108 Holes)

CIBP @ 8010' (1 sx)

Ellenburger Open Hole:
8030-8067

CICR @ 4841' w/ 126' cmt
Cmt sqz leak 4934-65 w / 200 sx

CICR @ 5651' w/ 185' cmt
Cmt sqz perfs 5715-6682 w / 250 sx

CIBP @ 6696' w/ 35' cmt

7-7/8" Hole
5-1/2" 15.5/17# J-55 CSA 8030'
Cement w / 500 sx
TOC @ 5115' (Temp Survey)

South Permian Basin Regior
10520 West I-20 Eas
Odessa, TX 7976
(915) 498-919
Lab Team Leader - Sheila Hernande
(915) 495-724(

Water Analysis Report by Baker Petrolite

Company:	APACHE CORPORATION	Sales RDT:	33102
Region:	PERMIAN BASIN	Account Manager:	MIKE EDWARDS (505) 370-9506
Area:	EUNICE, NM	Sample #:	26347
Lease/Platform:	ARGO	Analysis ID #:	20257
Entity (or well #):	7	Analysis Cost:	$40.00
Formation:	Grayburg		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	7/24/01
Analysis Date:	7/26/01
Analyst:	MARILYN BRANNON
TDS (mg/l or g/m3):	9977.2
Density (g/cm3, tonne/m3):	1.008
Anion/Cation Ratio:	0.9999999
Carbon Dioxide:	
Oxygen:	
Comments:	

Analysis of Sample 26347 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	3638.0	102.61	**Sodium:**	1860.1	80.91
Bicarbonate:	712.0	11.67	**Magnesium:**	359.0	29.53
Carbonate:	0.0	0.	**Calcium:**	955.0	47.65
Sulfate:	2296.0	47.8	**Strontium:**	17.0	0.39
Phosphate:			**Barium:**	0.1	0.
Borate:			**Iron:**	2.0	0.07
Silicate:			Potassium:	138.0	3.53
			Aluminum:		
Hydrogen Sulfide:			Chromium:		
pH at time of sampling:		6.55	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		6.55	Manganese:		
			Nickel:		

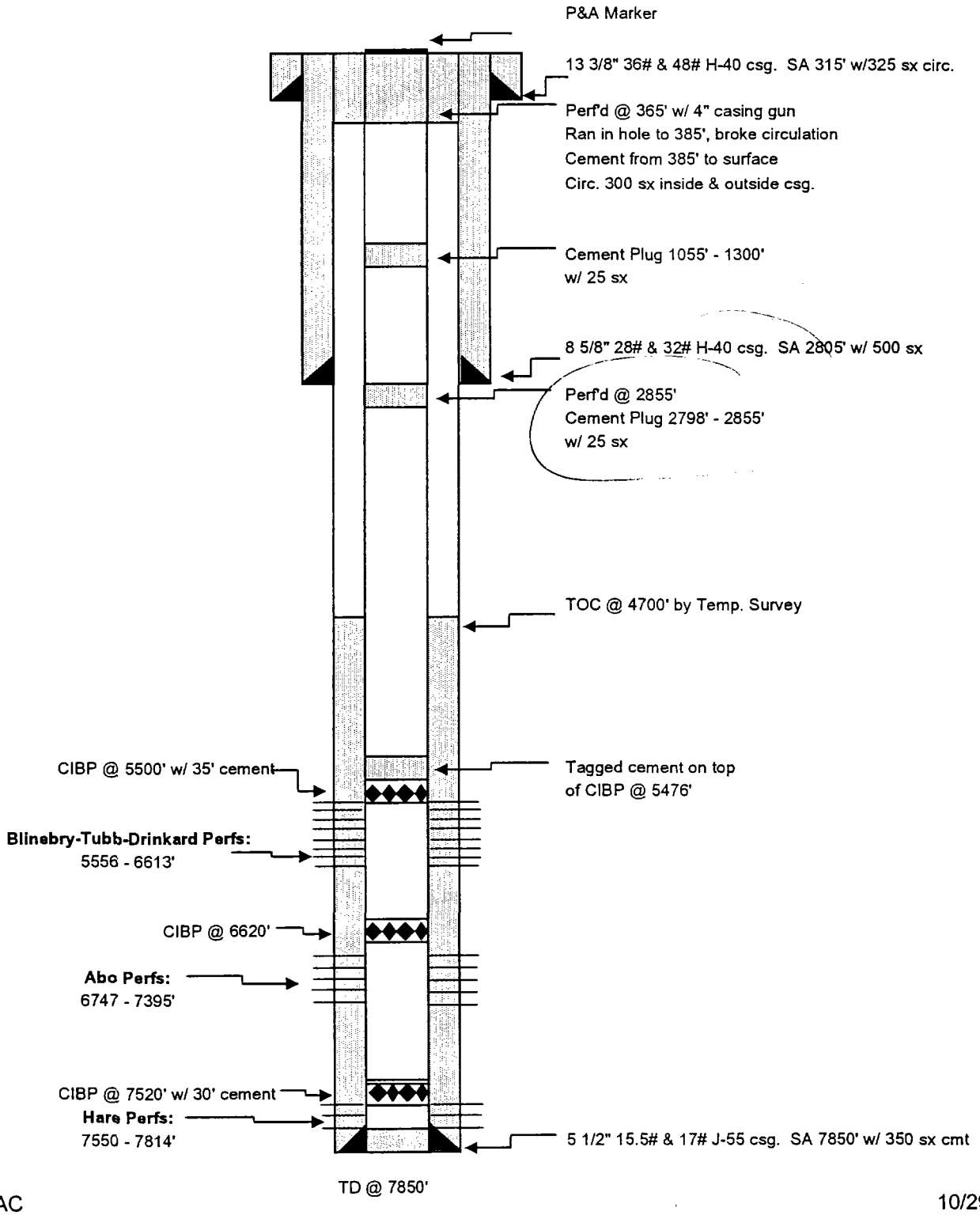
Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 \cdot 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.32	42.34	0.00	5.21	-0.07	0.00	-0.05	0.00	0.87	0.00	2.19
100	0	0.44	57.61	-0.01	0.00	-0.01	0.00	-0.04	0.00	0.71	0.00	2.84
120	0	0.57	73.22	-0.01	0.00	0.07	111.75	-0.02	0.00	0.59	0.00	3.55
140	0	0.70	88.49	0.00	4.16	0.17	253.34	0.01	0.35	0.49	0.00	4.29

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.

Northeast Drinkard Unit #608
Eunice N. Blinebry-Tubb-Drinkard (22900)
1980' FNL & 1880' FWL
Unit F, Sec 15, T-21S, R-37E
Lea County, New Mexico



KAC

10/29/2002

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

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

of 1

_____ weeks.

Beginning with the issue dated

February 7 2002

and ending with the issue dated

February 7 2002

Kathi Bearden

Publisher

Sworn and subscribed to before me this 7th day of

February 2002

Jodi Henson

Notary Public.

My Commission expires
October 18, 2004
(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
February 7, 2002

Notice is Hereby given of the application of Apache Corporation, 2000 Post Oak Blvd., Ste. 100, Houston, TX 77056, (713) 296-6000, to the oil Conservation Division, New Mexico Energy, Minerals and Natural Resources Department, for approval of the following injection wells for the purpose of salt water disposal.

Pool Name: Hare; San Andres
Lea County, New Mexico

Lease/Unit Name: Argo
Well No. 6 (30-025-06603)
Location: 1650' FSL & 2310' FWL, Section 15, T21S, R37E, Unit K
Well No. 7 (30-025-09915)
Location: 2310' FSL & 990' FWL, Section 15, T21S, R37E, Unit L

The injection formation is the San Andres located between 4000' MD to 5000' MD below the surface of the ground. Expected maximum injection rate is 10,000 barrels per day and the expected maximum injection pressure is 800 psi. Interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, NM 87505 within fifteen days.
#18728

02102716000 02553380

Apache Corporation
2000 Post Oak Boulevard Suite 100
Houston, TX 77056-4400

APPLICATION TO CONVERT WELLS TO SALT WATER DISPOSAL
ARGO LEASE
SURFACE OWNERS

The 80-acre tract that the Argo No. 6 and No. 7 wells are located on is owned by Apache Corporation

Mario Moreno
Senior Staff Landman
Apache Corporation

4-22-02
Date

APPLICATION TO CONVERT WELLS TO SALT WATER DISPOSAL
ARGO LEASE
OFFSET OPERATORS

Acoma Oil Corporation
6300 Ridglea Place, Suite 904
Fort Worth, Texas 76116
Cert Rcpt # 7000-2870-0000-2222-3993

Arch Petroleum Incorporated
P O Box 10340
Midland, Texas 79702-9990
Cert Rcpt # 7000-2870-0000-2223-4241

Breck Operating Corporation
Box 4250
Midland, Texas 79702
Cert Rcpt # 7000-2870-0000-2223-4258

Campbell & Hedrick
Box 401
Midland, Texas 79701
Cert Rcpt # 7000-2870-0000-2223-4265

ChevronTexaco
15 Smith Road
Midland, Texas 79705
Cert Rcpt # 7000-2870-0000-2223-4272

J R Cone
Box 10217
Lubbock, Texas 79408
Cert Rcpt # 7000-2870-0000-2223-4289

Conoco Incorporated
10 Desta Drive, Ste. 100W
Midland, Texas 79705
Cert Rcpt # 7000-2870-0000-2223-4296

Eastland Oil Company
P O Box 3488
Midland, Texas 79702
Cert Rcpt # 7000-2870-0000-2223-4302

ExxonMobil
P O Box 4697
Houston, Texas 77210-4697
Cert Rcpt # 7000-2870-0000-2223-4319

John H Hendrix Corporation
Box 3040
Midland, Texas 79702
Cert Rcpt # 7000-2870-0000-2223-4326

Lanexco Incorporated
Box 2730
Midland, Texas 79702
Cert Rcpt # 7000-2870-0000-2223-4333

Marathon Oil Company
Box 2409
Hobbs, New Mexico 88240
Cert Rcpt # 7000-2870-0000-2223-4340

Mayne & Mertz Incorporated
Box 183
Midland, Texas 79702
Cert Rcpt # 7000-2870-0000-2223-4357

Stephens & Johnson Operating Company
Box 2249
Wichita Falls, Texas 76307-2249
Cert Rcpt # 7000-2870-0000-2223-4364

Zia Energy Incorporated
Box 2510
Hobbs, New Mexico 88241-2510
Cert Rcpt # 7000-2870-0000-2223-4371

A copy of the Application to Convert Argo No. 6 and No. 7 to SWD was mailed to the Offset Operators listed above on April 22, 2002

Debra J. Anderson, Sr. Engineering Technician

4-22-02
Date

2000 POST OAK BOULEVARD / SUITE 100 / HOUSTON, TEXAS 77056-4400

Apache CORPORATION

WWW.APACHECORP.COM
(713) 296-6000

April 22, 2002

Offset Operator

Re: Application for Salt Water Disposal Wells
Argo Lease
Well No. 6 and 7
Hare; San Andres
Lea County, New Mexico

Attached please find a copy of completed form C-108 with attachments and a plat of Apache Corporation's lease, which we have filed with the New Mexico Oil Conservation Division. The plat shows the referenced wells in relation to your offset operations.

Sincerely,

APACHE CORPORATION

Debra J. Anderson
Sr. Engineering Technician

Attachments

cc: State of New Mexico
Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

2000 POST OAK BOULEVARD / SUITE 100 / HOUSTON, TEXAS 77056-4400

Apache CORPORATION

WWW.APACHECORP.COM
(713) 296-6000

April 22, 2002

Offset Operator

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Argo Lease
Well No. 6 and 7
Hare; San Andres
Lea County, New Mexico

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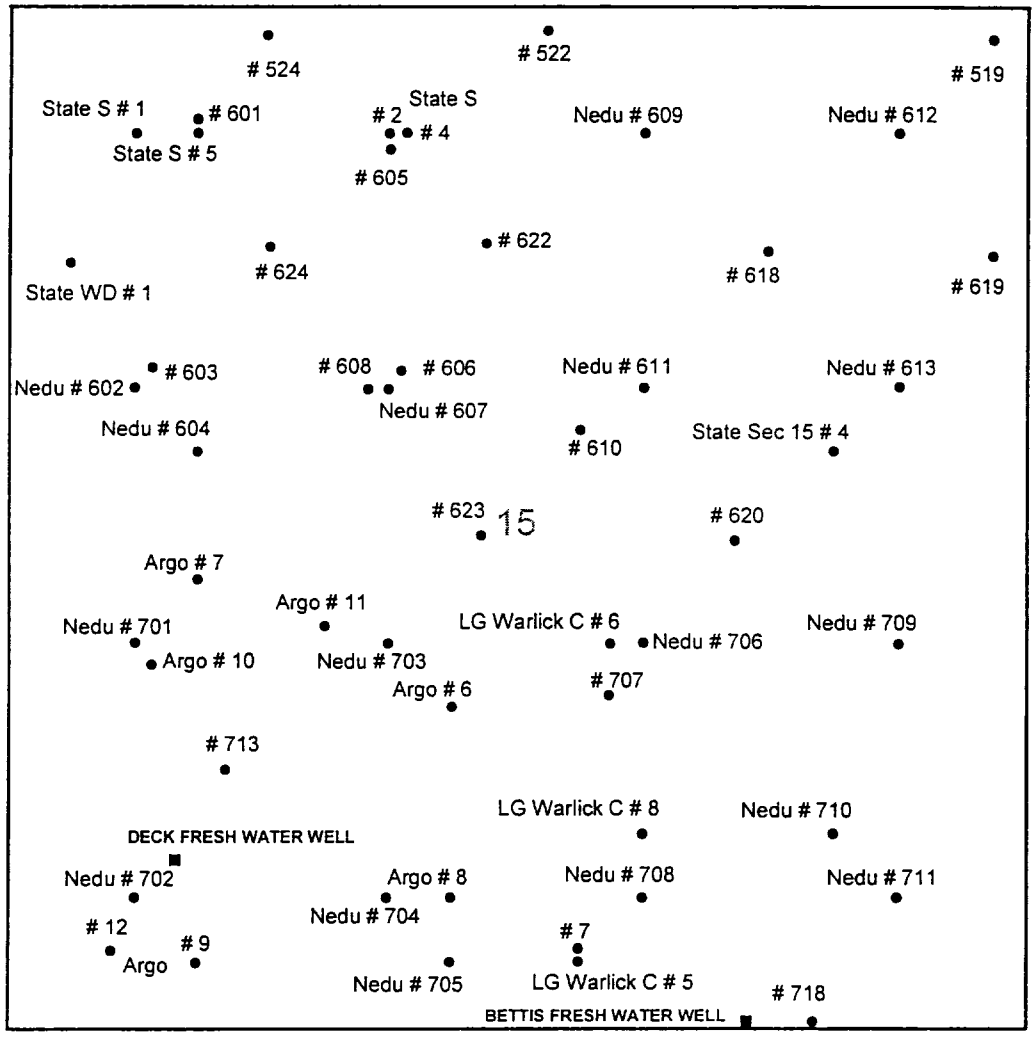
Debra J. Anderson
Sr. Engineering Technician

Attachments

cc: State of New Mexico
Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505



Apache CORPORATION

ARGO SALT WATER DISPOSAL APPLICATION
LOCATION OF TWO FRESH WATER WELLS
SECTION 15, TOWNSHIP 21S, RANGE 37E
LEA COUNTY, NEW MEXICO

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DAVID URBANSKI
APACHE CORPORATION
2000 POST OAK BLVD., STE. 100
HOUSTON, TX 77056

Order#: G0203056
Project:
Project Name: Eunice
Location:

Lab ID: 0203056-01
Sample ID: Deck Well

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Bicarbonate Alkalinity	168	mg/L	1	2.0	310.1	4/12/02	SB
Carbonate Alkalinity	<0.10	mg/L	1	0.10	310.1	4/12/02	SB
Chloride	354	mg/L	1	5.00	9253	4/11/02	SB
pH	7.77	pH Units	1	N/A	150.1	4/12/02	SB
Sulfate	158	mg/L	5	0.250	375.4	4/16/02	CC
Total Dissolved Solids (TDS)	1230	mg/L	1	5.0	160.1	4/17/02	SB

Lab ID: 0203056-02
Sample ID: Bettis Well

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Bicarbonate Alkalinity	170	mg/L	1	2.0	310.1	4/12/02	SB
Carbonate Alkalinity	<0.10	mg/L	1	0.10	310.1	4/12/02	SB
Chloride	833	mg/L	1	5.00	9253	4/11/02	SB
pH	7.53	pH Units	1	N/A	150.1	4/12/02	SB
Sulfate	232	mg/L	5	0.250	375.4	4/16/02	CC
Total Dissolved Solids (TDS)	2710	mg/L	1	5.0	160.1	4/17/02	SB

Approval: Raland K. Tuttle 4-17-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0203056

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Barium-mg/L	0001267-01			<0.001		
Bicarbonate Alkalinity-mg/L	0001279-01			<2.00		
Calcium-mg/L	0001253-01			<0.010		
Carbonate Alkalinity-mg/L	0001280-01			< 0.10		
Chloride-mg/L	0001261-01			<5.00		
Iron-mg/L	0001267-01			<0.002		
Magnesium-mg/L	0001253-01			<0.001		
pH-pH Units	0001273-01			5.05		
Potassium-mg/L	0001253-01			<0.050		
Sodium-mg/L	0001253-01			<0.010		
Strontium-mg/L	0001267-01			<0.001		
Sulfate-mg/L	0001222-01			<0.05		
Total Dissolved Solids (TDS)-mg/L	0001282-01			<5.00		
CONTROL WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Barium-mg/L	0001267-02		1	1.02	102.%	
Iron-mg/L	0001267-02		0.5	0.491	98.2%	
Strontium-mg/L	0001267-02		1	1.04	104.%	
CONTROL DUP WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Barium-mg/L	0001267-03		1	1.02	102.%	0.%
Iron-mg/L	0001267-03		0.5	0.497	99.4%	1.2%
Strontium-mg/L	0001267-03		1	1.05	105.%	1.%
DUPLICATE Water	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Bicarbonate Alkalinity-mg/L	0203067-01	187		188		0.5%
Calcium-mg/L	0203056-01	106		108		1.9%
Carbonate Alkalinity-mg/L	0203067-01	8		< 0.10		200.%
Magnesium-mg/L	0203056-01	48.3		48.5		0.4%
pH-pH Units	0203067-01	7.97		7.99		0.3%
Potassium-mg/L	0203056-01	7.46		8.57		13.8%
Sodium-mg/L	0203056-01	179		184		2.8%
Sulfate-mg/L	0203056-01	158		140		12.1%
Total Dissolved Solids (TDS)-mg/L	0203056-01	1230		1200		2.5%
MS Water	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/L	0203045-01	638	1000	1630	99.2%	
MSD Water	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/L	0203045-01	638	1000	1630	99.2%	0.%

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

SRM WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Barium-mg/L	0001267-04		1	1.02	102.%	
Bicarbonate Alkalinity-mg/L	0001279-04		0.05	0.0496	99.2%	
Calcium-mg/L	0001253-04		2	2.00	100.%	
Carbonate Alkalinity-mg/L	0001280-04		0.05	0.0496	99.2%	
Chloride-mg/L	0001261-04		5000	5050	101.%	
Iron-mg/L	0001267-04		1	1.09	109.%	
Magnesium-mg/L	0001253-04		2	2.01	100.5%	
pH-pH Units	0001273-04		7	7.06	100.9%	
Potassium-mg/L	0001253-04		2	2.17	108.5%	
Sodium-mg/L	0001253-04		2	2.23	111.5%	
Strontium-mg/L	0001267-04		1	1.08	108.%	
Sulfate-mg/L	0001222-04		50	47.9	95.8%	

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: David Urbanski
Company Name: Apache Corp
Company Address: 2000 Post Oak Blvd #100
City/State/Zip: Houston, TX 77056
Telephone No: 713 296-6555 Fax No: 713-296-7250
Sampler Signature: David E. Urbanski

Project Name: Eunice SWD
Project #:
Project Loc:
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TDS/CL SAR/EC	TPH 418.1	TPH TX 1005 '06	TPH 8015M GRO/DRO	Metals As Ag Ba Cd Cr Pb Hg Se (TCLP / TOTAL)	Volatiles	Semivolatiles	BTEX 8021B/5030	pH	Bicarb, Carb, SO4	Na, Mg, Ca, Barium, S	Fe, K	RUSH TAT (Pre-Schedule)	Standard TAT
2056-01	Deck Well	4/11/02	1:30	2						X		X				X								X	X	X	X		X
-02	Bettis Well	4/11/02	1:50	2						X		X				X								X	X	X	X		X

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 20°C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
David E Urbanski	4/11/02	1620			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Ray Blalock	4/11/02	16:20

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

APACHE CORPORATION
2000 POST OAK BLVD., STE. 100
HOUSTON, TX 77056
713-296-7250

Order#: G0203056
Project:
Project Name: Eunice
Location:

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0203056-01	Deck Well	WATER	4/10/02 1:30	4/11/02 16:42	500 mL Plastic	none

Lab Testing: Rejected: No Temp: 30C

Barium
Bicarbonate Alkalinity
Calcium
Carbonate Alkalinity
Chloride
Iron
Magnesium
Metals Digestion - Total
pH
Potassium
Sodium
Strontium
Sulfate
Total Dissolved Solids (TDS)

0203056-02	Bettis Well	WATER	4/10/02 1:50	4/11/02 16:42	500 mL Plastic	none

Lab Testing: Rejected: No Temp: 30C

Barium
Bicarbonate Alkalinity
Calcium
Carbonate Alkalinity
Chloride
Iron
Magnesium
Metals Digestion - Total
pH
Potassium
Sodium
Strontium
Sulfate
Total Dissolved Solids (TDS)

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DAVID URBANSKI
APACHE CORPORATION
2000 POST OAK BLVD., STE. 100
HOUSTON, TX 77056

Order#: G0203056
Project:
Project Name: Eunice
Location:

Lab ID: 0203056-01
Sample ID: Deck Well

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Barium	0.073	mg/L	1	0.001	3005/6010B	04/12/2002	4/17/02	SM
Calcium	106	mg/L	100	1.00	6010B	04/16/2002	4/17/02	SM
Iron	0.854	mg/L	1	0.002	3005/6010B	04/12/2002	4/17/02	SM
Magnesium	48.3	mg/L	10	0.010	6010B	04/16/2002	4/17/02	SM
Potassium	7.46	mg/L	10	0.500	6010B	04/16/2002	4/17/02	SM
Sodium	179	mg/L	100	1.00	6010B	04/16/2002	4/17/02	SM
Strontium	3.59	mg/L	1	0.001	3005/6010B	04/12/2002	4/17/02	SM

Lab ID: 0203056-02
Sample ID: Bettis Well

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Barium	0.074	mg/L	1	0.001	3005/6010B	04/12/2002	4/17/02	SM
Calcium	223	mg/L	100	1.0	6010B	04/16/2002	4/17/02	SM
Iron	0.285	mg/L	1	0.002	3005/6010B	04/12/2002	4/17/02	SM
Magnesium	118	mg/L	100	0.100	6010B	04/16/2002	4/17/02	SM
Potassium	13.3	mg/L	10	0.500	6010B	04/16/2002	4/17/02	SM
Sodium	312	mg/L	100	1.00	6010B	04/16/2002	4/17/02	SM
Strontium	5.81	mg/L	1	0.001	3005/6010B	04/12/2002	4/17/02	SM

Approval: Raland K Tuttle 4-17-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

N/A = Not Applicable RL = Reporting Limit

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AREA OF REVIEW / WELL DATA

WELL NAME	API NO.	S / T / R	LOCATION	WELL TYPE	SPUD DATE	COMP DATE	TD	SURFACE CASING				INTERMEDIATE CASING				PRODUCTION CASING					LINER				
								HOLE	CSG	SET	CMT	HOLE	CSG	SET	CMT	HOLE	CSG	SET	CMT	TOC	HOLE	LINER	DEPTH	CMT	TOC
NEDU #601 (State S #7)	30-025-06614	15/21S/37E	660 FNL-990 FWL	O	2/25/1952	4/27/1952	8145	17-1/2	13-3/8	293	300	11	8-5/8	2990	2000						6-3/4	5-1/2	2847-8142	500	TOL
NEDU #602 (State S #1)	30-025-09914	15/21S/37E	1980 FNL-660 FWL	O	4/11/1948	5/22/1948	6673	17-1/2	13-3/8	297	300	11	8-5/8	2799	800	7-7/8	5-1/2	6625	350	4250 (T)					
NEDU #603 (State S #4)	30-025-09913	15/21S/37E	3390 FSL-4520 FEL	P&A	2/18/1951	4/15/1951	8182	17-1/2	13-3/8	296	325	11	8-5/8	2818	500	7-7/8	5-1/2	8030	500	5115 (T)					
NEDU #604 (State S #6)	30-025-06591	15/21S/37E	2310 FNL-990 FWL	O	8/28/1951	10/24/1951	8193	17-1/2	13-3/8	324	350	11	8-5/8	2835	500	7-7/8	5-1/2	8042	400	4650 (B)					
NEDU #605 (State S #6)	30-025-06613	15/21S/37E	760 FNL-1980 FWL	WI	8/13/1951	10/10/1951	7675	17-1/2	13-3/8	295	300	11	8-5/8	2997	2000	7-7/8	5-1/2	7675	900	Surface					
NEDU #606 (State S #3)	30-025-06587	15/21S/37E	3375 FSL-3225 FEL	O	12/16/1950	2/11/1951	8034	17-1/2	13-3/8	333	350	11	8-5/8	2803	500	7-7/8	5-1/2	8032	775	3295 (T)					
Cities State S # 2 (NEDU # 607)	30-025-06585	15/21S/37E	1980 FNL-1980 FWL	O	6/2/1948	6/29/1948	6676	17-1/2	13-3/8	297	300	11	8-5/8	2791	500	7-7/8	5-1/2	6586	125	5000 (C)					
NEDU #608 (State S #5)	30-025-06590	15/21S/37E	1980 FNL-1880 FWL	O	7/10/1951	8/25/1951	7850	17-1/2	13-3/8	314	325	11	8-5/8	2805	500	7-7/8	5-1/2	7849	350	4700 (T)					
NEDU #610 (State #3)	30-025-06588	15/21S/37E	2210 FNL-2310 FEL	WI	1/10/1951	2/19/1951	7798	17-1/2	13-3/8	222	250	11	8-5/8	2925	2000	7-7/8	5-1/2	7635	693	4600 (C)					
NEDU #611 (State #1)	30-025-09912	15/21S/37E	1980 FNL-1978 FEL	WI	8/30/1948	11/1/1948	6641	17-1/2	13-3/8	229	250	11	8-5/8	2897	1500	7-7/8	5-1/2	6545	1200	Surface					
NEDU #620	30-025-34650	15/21S/37E	2515 FSL-1501 FEL	O	8/27/1999	9/28/1999	6820	12-1/4	8-5/8	1240	460					7-7/8	5-1/2	6820	1525	Surface					
NEDU #622	30-025-34649	15/21S/37E	1229 FNL-2498 FWL	O	8/16/1999	9/16/1999	6840	12-1/4	8-5/8	1265	460					7-7/8	5-1/2	6840	1675	650 (B)					
NEDU #623	30-025-34657	15/21S/37E	2540 FSL-2482 FWL	O	8/29/1999	10/1/1999	6840	12-1/4	8-5/8	1283	460					7-7/8	5-1/2	6840	1650	Surface					
NEDU #624	30-025-34887	15/21S/37E	1250 FNL-1368 FWL	O	4/17/2000	5/19/2000	6860	12-1/4	8-5/8	1213	460					7-7/8	5-1/2	6860	1400	Surface					
NEDU #701 (Argo #2)	30-025-09916	15/21S/37E	1980 FSL-660 FWL	O	10/10/1947	12/18/1947	6654	17-1/2	13-3/8	210	210	11	8-5/8	2875	800	7-7/8	5-1/2	6652	600	3223 (C)					
NEDU #702 (Argo Oil Corp #1)	30-025-09911	15/21S/37E	660 FSL-660 FWL	O	8/8/1947	9/30/1947	6646	17-1/2	13-3/8	321	220	11	8-5/8	2839	800	7-7/8	5-1/2	6529	500	3672 (C)					
NEDU #703 (Argo #3)	30-025-09918	15/21S/37E	1980 FSL-1980 FWL	WI	2/29/1948	4/17/1948	6645	17-1/2	13-3/8	208	250	11	8-5/8	2891	1500	7-7/8	5-1/2	6494	500	3637 (C)					
NEDU #704 (Argo #4)	30-025-09917	15/21S/37E	660 FSL-1980 FWL	O	5/9/1948	6/26/1948	6630	17-1/2	13-3/8	208	250	11	8-5/8	2883	1500	7-7/8	5-1/2	6560	1000	846 (C)					
NEDU #705 (Argo #5)	30-025-06602	15/21S/37E	330 FSL-2310 FWL	O	7/27/1950	9/12/1950	8091	17-1/2	13-3/8	225	300	11	8-5/8	2912	2000	7-7/8	5-1/2	7790	500	4933 (C)					
NEDU #706 (LG Warlick C #1)	30-025-06592	15/21S/37E	1980 FSL-1980 FEL	O	6/8/1948	7/31/1948	6629	17-1/2	13-3/8	299	250	11	8-5/8	2800	1500	7-7/8	5-1/2	6497	750	2311 (C)					
NEDU #707 (LG Warlick C #10)	30-025-06601	15/21S/37E	1725 FSL-2149 FEL	O	5/5/1952	6/28/1952	7670	17-1/2	13-3/8	324	250	11	8-5/8	2851	1200	7-7/8	5-1/2	7665	1155	Surface					
NEDU #708 (LG Warlick C #2)	30-025-06593	15/21S/37E	660 FSL-1980 FEL	WI	7/30/1948	9/15/1948	6634	17-1/2	13-3/8	300	250	11	8-5/8	2799	1200	7-7/8	5-1/2	6590	750	3750 (C)					
NEDU #709 (LG Warlick C #4)	30-025-06595	15/21S/37E	1980 FSL-660 FEL	WI	11/16/1948	12/30/1948	6662	17-1/2	13-3/8	306	300	11	8-5/8	2802	1500	7-7/8	5-1/2	6596	750	1250 (T)					
NEDU #710 (LG Warlick C #9)	30-025-06600	15/21S/37E	990 FSL-990 FEL	O	6/19/1951	8/24/1951	7503	17-1/2	13-3/8	371	350	11	8-5/8	2900	1400	7-7/8	5-1/2	7465	850	Surface					
NEDU #711 (LG Warlick C #3)	30-025-06594	15/21S/37E	660 FSL-660 FEL	O	9/23/1948	11/8/1948	6621	17-1/2	13-3/8	302	250	11	8-5/8	2795	1500	7-7/8	5-1/2	6595	750	2300 (C)					
NEDU #713	30-025-34888	15/21S/37E	1330 FSL-1142 FWL	O	9/25/2000	11/6/2000	6790	12-1/4	8-5/8	1245	460					7-7/8	5-1/2	6790	1525	Surface					
NEDU #717	30-025-35274	15/21S/37E	44 FSL-2415 FWL	O	4/29/2001	6/1/2001	6780	12-1/4	8-5/8	1265	460					7-7/8	5-1/2	6780	1075	150 (B)					
NEDU #718	30-025-34742	15/21S/37E	14 FSL-1098 FEL	O	9/11/2000	10/20/2000	6790	12-1/4	8-5/8	1244	460					7-7/8	5-1/2	6790	1250	Surface					
State S #1	30-025-06586	15/21S/37E	660 FNL-660 FWL	O	6/24/1948	9/3/1948	6660	17-1/2	13-3/8	293	300	11	8-5/8	2797	1200	7-7/8	5-1/2	6625	400	4339 (C)					
State S #2	30-025-06609	15/21S/37E	660 FNL-1980 FWL	G	9/6/1948	11/17/1948	6667	11	8-5/8	2603	1200					7-7/8	5-1/2	6630	500	3773 (C)					
State S #4	30-025-06611	15/21S/37E	660 FNL-2080 FWL	O	11/28/1950	1/19/1951	7896	17-1/2	13-3/8	294	300	11	8-5/8	2999	1700	7-7/8	5-1/2	7895	500	5038 (C)					
State S #5	30-025-06612	15/21S/37E	660 FNL-990 FWL	O	2/13/1951	4/23/1951	8148	17-1/2	13-3/8	294	200	11	8-5/8	2974	2000	7-7/8	5-1/2	8147	500	5290 (C)					
State WD-1	30-025-33547	15/21S/37E	1340 FNL-330 FWL	SWD	9/28/1996	10/4/1996	2200	Does not penetrate injection zone												2766 (C)					
State #4	30-025-06589	15/21S/37E	2310 FNL-990 FEL	O	9/8/1951	10/24/1951	7615	17-1/2	13-3/8	241	250	11	8-5/8	2934	1800	7-7/8	5-1/2	7566	840	4933 (C)					
Argo #8	30-025-06604	15/21S/37E	660 FSL-2310 FWL	O	5/11/1951	6/28/1951	8002	17-1/2	13-3/8	226	300	11	8-5/8	2915	1800						6-3/4	5-1/2	2683-7800	925	TOL
Argo #9	30-025-06605	15/21S/37E	330 FSL-990 FWL	O	5/29/1951	7/18/1951	8189	17-1/2	13-3/8	225	250	11	8-5/8	2917	1200						6-3/4	5-1/2	2701-8000	925	TOL
Argo #10	30-025-06606	15/21S/37E	1880 FSL-760 FWL	G	7/19/1951	9/5/1951	8015	17-1/2	13-3/8	241	250	11	8-5/8	2906	1700	7-7/8	5-1/2	8012	875	3012 (C)					
Argo #11	30-025-06607	15/21S/37E	2080 FSL-1650 FWL	O	7/14/1951	9/25/1951	7891	17-1/2	13-3/8	228	250	11	8-5/8	2903	1950						6-3/4	5-1/2	2697-7890	800	TOL
Argo #12	30-025-06608	15/21S/37E	400 FSL-550 FWL	O	12/15/1951	2/17/1952	8035	17-1/2	13-3/8	227	254	11	8-5/8	2882	1900						7-7/8	5-1/2	2650-8033	983	TOL
LG Warlick #5	30-025-06596	15/21S/37E	330 FSL-2310 FEL	G	5/31/1950	7/17/1950	7827	17-1/2	13-3/8	298	350	12-1/4	9-5/8	2800	1300	7-7/8	5-1/2	7655	1100	1370 (C)					
LG Warlick #6	30-025-06597	15/21S/37E	1650 FSL-2140 FEL	G	10/29/1950	12/11/1950	7847	17-1/2	13-3/8	303	300	11	8-5/8	2797	1200	7-7/8	5-1/2	7700	575	4415 (C)					
LG Warlick #7	30-025-06598	15/21S/37E	405 FSL-2310 FEL	O	2/13/1951	4/16/1951	7690	17-1/2	13-3/8	305	300	11	8-5/8	2802	1300	7-7/8	5-1/2	7688	1000	1974 (C)					
LG Warlick #8	30-025-06599	15/21S/37E	1650 FSL-990 FEL	O	4/20/1951	6/16/1951	7626	17-1/2	13-3/8	308	300	11	8-5/8	2803	1300	7-7/8	5-1/2	7570	800	3000 (C)					
Harry Leonard NCT E #2	30-025-06621	16/21S/37E	1980 FNL-660 FEL	O	11/23/1947	1/23/1948	6614	17-1/2	13-3/8	301	300	12-1/4	9-5/8	2932	1300	8-3/4	7	6547	700	1937 (C)					
Harry Leonard NCT E #5	30-025-06624	16/21S/37E	2310 FNL-330 FEL	O	6/22/1952	7/3/1952	8220	15	12-3/4	268	325	11	8-5/8	2729	808	7-7/8	5-1/2	7999	1011	4100 (C)					
State 15 #4	30-025-06633	16/21S/37E	660 FSL-660 FEL	O	6/22/1947	7/27/1947	6665	17-1/2	13-3/8	219	250	11	8-5/8	2864	1700	7-7/8	5-1/2	6664	400	4378 (C)					
State 15 #5	30-025-06634	16/21S/37E	330 FSL-330 FEL	O	4/11/1952	6/24/1952	8261	17-1/2	13-3/8	293	250	11	8-5/8	2861	NR	7-7/8	5-1/2	8251	500+	3375 (T)					

AREA OF REVIEW / WELL DATA

WELL NAME	API NO.	S / T / R	LOCATION	WELL TYPE	SPUD DATE	COMP DATE	TD	SURFACE CASING				INTERMEDIATE CASING				PRODUCTION CASING					LINER				
								HOLE	CSG	SET	CMT	HOLE	CSG	SET	CMT	HOLE	CSG	SET	CMT	TOC	HOLE	LINER	DEPTH	CMT	TOC
State DA # 4	30-025-06619	16/21S/37E	1980 FSL-660 FEL	O	8/12/1947	9/26/1947	6644	17-1/2	13-3/8	213	200	11	8-5/8	2807	1550	7-7/8	5-1/2	6644	600	3165 (T)					
State DA # 5	30-025-06617	16/21S/37E	1980 FSL-330 FEL	O	2/14/1952	5/6/1952	8330	17-1/2	13-3/8	250	200	11	8-5/8	2820	1500	7-7/8	5-1/2	8225	500	3448 (T)					
NEDU #716	30-025-34660	22/21S/37E	61 FNL-1212 FWL	O	8/1/1999	9/2/1999	6810	12-1/4	8-5/8	1269	460					7-7/8	5-1/2	6810	1550	Surface					
NEDU #803 (Argo Oil Corp A #3)	30-025-09929	22/21S/37E	660 FNL-1980 FWL	WI	7/1/1948	8/20/1948	6628	17-1/2	13-3/8	226	250	11	8-5/8	2918	1500	7-7/8	5-1/2	6559	750	2560 (C)					
NEDU #806 (Eubank #1)	30-025-06727	22/21S/37E	660 FNL-1780 FEL	O	8/17/1948	9/23/1948	6620	17-1/2	13-3/8	317	300	12-1/4	9-5/8	2800	1262	8-3/4	7	6500	700	2850 (T)					
Argo A #6	30-025-06738	22/21S/37E	440 FNL-2200 FWL	O	5/26/1950	7/12/1950	7907	17-1/2	13-3/8	227	300	11	8-5/8	2883	2000	7-7/8	5-1/2	7770	500	4913 (C)					
Argo A #10	30-025-06742	22/21S/37E	660 FNL-1660 FWL	G	9/29/1951	12/4/1951	8130	17-1/2	13-3/8	216	250	11	8-5/8	2874	1900						6-3/4	5-1/2	2655-8058	870	TOL
Eubank #5	30-025-06731	22/21S/37E	330 FNL-2310 FEL	G	2/23/1950	4/21/1950	7756	17-1/2	13-3/8	294	300	12-1/4	9-5/8	2800	1300	8-3/4	7	7644	700	2950 (T)					
Eubank #7	30-025-06733	22/21S/37E	450 FNL-2305 FEL	O	7/23/1951	9/28/1951	7630	17-1/2	13-3/8	306	300	12-1/4	9-5/8	2799	1400	8-3/4	7	7629	625	3513 (C)					

Top of Cement Legend:
B = Cement Bond Log
C = Calculated
Surface = Circulated
T = Temperature Survey
TOL = Top of Liner