DATE IN 10/27/09	SUSPENSE	ENGINEER Jones	LOGGED IN 10/29/09	TYPE SWD 1169-A	APP NO. 09302517795

ABOVE THIS LINE FOR DIVISION USE ONLY

RECEIVED
2009

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

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

PM Apache

ADMINISTRATIVE APPLICATION CHECKLIST House SWD #1

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

30-025-39193

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 _____

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

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☒ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

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

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

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

Sophie Mackay	Sophie Mackay	Engineering Technician	10/262009
Print or Type Name	Signature	Title	Date

sophie.mackay@apachecorp.com
e-mail Address

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-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance ______Disposal _____Storage
Application qualifies for administrative approval? ______Yes _____No

II. OPERATOR: Apache Corporation (873)

ADDRESS: 6120 S Yale Ave, Suite 1500 Tulsa, OK 74136-4224

CONTACT PARTY: Sophie Mackay PHONE: (918) 491-4864

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: SWD-1169

Hor MAXPSI of 1720 PSI - 357 = 1363 11/18/09

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: Sophie Mackay TITLE: Engineering Technician

SIGNATURE: Sophie Mackay DATE: 10/26/2009

E-MAIL ADDRESS: sophie.mackay@apachecorp.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: _____

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 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.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Apache Corporation (873)

WELL NAME & NUMBER: House SWD #1

WELL LOCATION:	990' FSL & 500' FWL	M	12	20S	38E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 9-5/8" @ 1552'

Cemented with: 620 sx. *or* _____ ft^3

Top of Cement: surface Method Determined: circulate

Intermediate Casing

Hole Size: 8-3/4" Casing Size: 7" @ 4,600'

Cemented with: 1200 sx. *or* _____ ft^3

Top of Cement: surface Method Determined: circulate

Production Casing

Hole Size: 6-1/8" Casing Size: None

Cemented with: NA sx. *or* _____ ft^3

Top of Cement: NA Method Determined: NA

Total Depth: 5,700'

Injection Interval

~~4250'-4600' (Perf) &~~ 4600' feet to 5700' (Open Hole)

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 2-7/8" Lining Material: IPC

Type of Packer: 7" Baker Lok-Set

Packer Setting Depth: ~~4200'~~ 4500 ft

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

Additional Data

1. Is this a new well drilled for injection? \ Yes _____ No

   If no, for what purpose was the well originally drilled? Salt Water Disposal

2. Name of the Injection Formation: San Andres / Glorieta

3. Name of Field or Pool (if applicable): SWD; San Andres - Glorieta (96127)

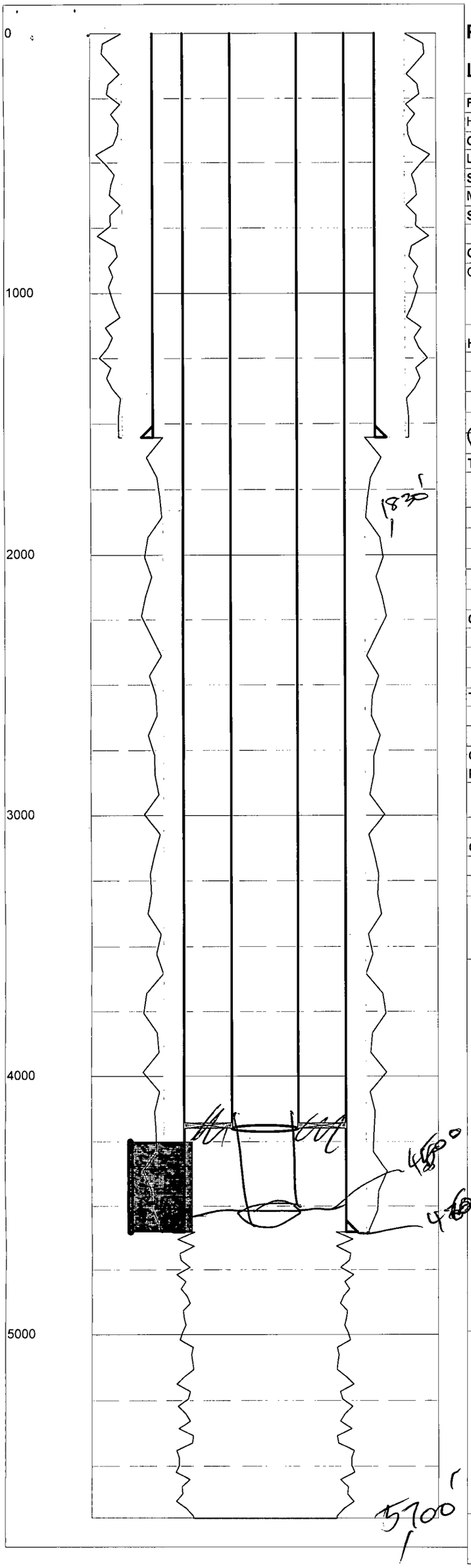
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No

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

   The next higher zone is the Grayburg @ +/- 3890'

   These zones are the San Andres @ +/- 4250' and the Glorieta @ +/- 5560'

   The next lower zone is the Blinebry @ +/- 6023'



PROPOSED COMPLETION

Last Updated: 10/6/2009 4:08:03 PM

Field Name	Lease Name	Well No.
House	House SWD	1

County	State	API	GL (ft)	KB (ft)
Lea	New Mexico	30-025-39193	3563	3575

Sec.	Twp/Blk	Rng/Svy	Footage
M-12	20S	38E	990' FSL & 500' FWL from Section

Spud Date	Comp. Date	Prepared By	Last Updated
6/29/2009		Jeff Frederick	10/6/2009

Current Status

Complete well as a San Andres and Glorieta disposal well.

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	6.1250	4,600	5,700	
6/29/2009	12.2500	0	1,552	
7/1/2009	8.7500	1,552	4,600	
7/6/2009	6.1250	4,600	5,500	OH on Hole

Tubular Summary

Date	Description	OD (in)	Wt (lb/ft)	Grade	Top (KB ft)	Bottom (KB ft)
	Tubing	2.8750	6.50		0	4,200
7/1/2009	Surface Casing	9.6250	40.00	K55	0	1,552
7/5/2009	Production Casing	7.0000	26.00	L80	0	41
7/5/2009	Production Casing	7.0000	26.00	J55	41	3,631
7/5/2009	Production Casing	7.0000	26.00	L80	3,631	4,600

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
7/1/2009	620	12.2500	9.6250	0	1,552
7/5/2009	950	8.7500	7.0000	1,830	4,600

Tools/Problems Summary

Date	Tool Type	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
	Pkr	7.0000	2.8750	4,200	

Cement Plug Summary

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing
	Open	San Andres	4,250	4,600	4	1404	120

Completion History Summary

Date	Comments
6/29/2009	Spud well.
7/13/2009	Run CBL (4600'-surface) and CNL (5500-4540'). Found TOC at 1830' with good bond from 4600-4290', poor bond from 4290-3290', very poor bond from 3290-2700', free pipe from 2700-2060', very poor bond from 2060-1830' (estimated TOC).
7/14/2009	RU CUDD ENERGY SERVICES & MIX ACID & CHEMICALS IN FRAC TANK. TITRATE ACID TO 15%. HOLD TAILGATE SAFETY MEETING. TEST LINES TO 6080#. START ON WATER & LOAD TBG W/ 3.5 BBLS 1% KCL FW. BRK DOWN PERFS @ 2300#. START ACID STAGES & PUMP 2982 GALS 15% HCL NEFE-I ACID @ 8.0 BPM, 2972#. DROP 2K LBS SALT IN 24 BBLS 10# BRINE @ 7.3 BPM, 2833#. 1ST BLOCK ON FORM W/ 100# INCREASE. PUMP 2982 GALS 15% ACID @ 8.0 BPM, 2923#. DROP 4K LBS SALT IN 48 BBLS 10# BRINE @ 7.1 BPM, 2508#. 2ND BLOCK ON FORM W/ 200# INCREASE. PUMP 2982 GALS 15% ACID @ 8.6 BPM, 3300#. DROP 4K LBS SALT IN 48 BBLS 10# BRINE @ 8.2 BPM, 3019#. 3RD BLOCK ON FORM W/ 300# INCREASE. PUMP 2982 GALS 15% ACID @ 8.6 BPM, 3297#. DROP 4K LBS SALT IN 48 BBLS 10# BRINE @ 8.1 BPM, 2919#. 4TH BLOCK ON FORM W/ 400# INCREASE. PUMP 2982 GALS 15% ACID @ 8.7 BPM, 3250#. DROP 5K LBS SALT IN 72 BBLS 10# BRINE @ 8.3 BPM, 3552#. 5TH BLOCK ON FORM W/ 300# INCREASE. PUMP 5082 GALS 15% ACID @ 8.7 BPM, 3520#. PUMP 85 BBLS 1% KCL FW FLUSH @ 8.8 BPM, 3327#. SD. ISDP - 1770#. 5 MIN - 1718#. 10 MIN - 1672#. 15 MIN - 1649#. BLWTR - 775 BBLS. RD CUDD ENERGY SERVICES. OPEN WELL & FLOWBACK 230 BBLS LOAD WATER & ACID GAS. RELEASE PKR & POH W/ TBG. LD PKR. RIH W/ TBG & TAG SALT @ 5273'.
7/16/2009	RU CUDD ENERGY SERVICES. PRESS BACKSIDE TO 628#. TEST LINES TO 4500#. OPEN VALVE & PUMP 18 BBLS 1% KCL FW FOR 37 MINS @ .5 BPM, 811#. PUMP 30 BBLS 1% KCL FW FOR 30 MINS @ 1.0 BPM, 1275#. PUMP 45 BBLS 1% KCL FW FOR 30 MINS @ 1.5 BPM, 1507#. PUMP 63 BBLS 1% KCL FW FOR 30 MINS @ 2.1 BPM, 1623#. PUMP 78 BBLS 1% KCL FW FOR 30 MINS @ 2.6 BPM, 1762#. PUMP 93 BBLS 1% KCL FW FOR 30 MINS @ 3.1 BPM, 1808#. PUMP 105 BBLS 1% KCL FW FOR 30 MINS @ 3.5 BPM, 1855#. SD. ISDP - 1600#. 5 MIN - 1600#. 10 MIN - 1600#. 15 MIN - 1600#. RD CUDD. SI WELL 2 HRS. OPEN WELL. PRESS @ 900#. FLOWBACK 40 BBLS WATER
7/17/2009	RU GRAY WIRELINE. RIH W/ TEMP SURVEY & RUN BASE TEMP SURVEY. WITH REVERSE UNIT PUMP 100 BBLS 1% KCL FW @ 2.0 BPM & RUN TEMP SURVEY WHILE PUMPING.

	STOP PUMPING. WAIT 1 HR & RUN SI TEMP SURVEY. DETERMINED WATER TO GOING OUT IN TOP 400' OF OH. POH & RD GRAY WL. RELEASE PKR & POH W/ TBG
7/20/2009	PU SONIC HAMMER TOOL & RIH W/ TBG TO 5500'. RU CUDD ENERGY SERVICES. ROLL ACID IN FRAC TANK. TITRATE ACID TO 15%. TEST LINES TO 4050#. LOAD TBG & BRK CIRC W/ 42 BBLS 1% KCL FW. ACIDIZE SAN ANDRES OH W/ SONIC HAMMER. ACIDIZE 5500'-5427' W/ 1344 GALS 15% HCL ACID @ 3.8 BPM, TBG - 2025#, CSG - 1305#. ACIDIZE 5427'-5363' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2276#, CSG - 1444#. ACIDIZE 5363'-5303' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2320#, CSG - 1510#. ACIDIZE 5303'-5238' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2276#, CSG - 1374#. ACIDIZE 5238'-5172' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2160#, CSG - 1444#. SHUT BOP RAMS & ACIDIZE 5205' W/ 4,494 GALS 15% HCL ACID @ 6.0 BPM, TBG - 3920#. CSG - 1480#. FLUSH TBG W/ 32 BBLS 1% KCL FW. FLUSH CSG W/ 70 BBLS 1% KCL FW. SD. RD CUDD.

Last Updated: 10/6/2009 4:08:03 PM **P R O P O S E D C O M P L E T I O N**

Field Name	Lease Name	Well No.	County	State	API	GL (ft)	KB (ft)
House	House SWD	1	Lea	New Mexico	30-012-39193	3563	3575

Sec.	Twp/Blk	Rng/Svy	Footage	Spud Date	Comp. Date	Prepared By	Last Updated
M-12	20S	38E	990' FSL & 500' FWL from Section	6/29/2009		Jeff Frederick	10/6/2009

Current Status

Complete well as a San Andres and Glorieta disposal well.

Detailed Summaries

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	6.1250	4,600	5,700	
6/29/2009	12.2500	0	1,552	
7/1/2009	8.7500	1,552	4,600	
7/6/2009	6.1250	4,600	5,500	

Tubular Summary

Date	Description	OD (in)	Wt (lb/ft)	Grade	Coupling	Top (KB ft)	Bottom (KB ft)	Comments
	Tubing	2.8750	6.50			0	4,200	IPC tubing
7/1/2009	Surface Casing	9.6250	40.00	K55	LTC	0	1,552	
7/5/2009	Production Casing	7.0000	26.00	L80	LTC	0	41	
7/5/2009	Production Casing	7.0000	26.00	J55	LTC	41	3,631	
7/5/2009	Production Casing	7.0000	26.00	L80	LTC	3,631	4,600	

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Cement Description	Comments
7/1/2009	620	12.2500	9.6250	0	1,552		Circulate trace of cement
7/5/2009	950	8.7500	7.0000	1,830	4,600		Circulate 174 sx cement, Good bond from 4600-4290', poor bond from 4290-3290', very poor bond from 3290-2700', free pipe from 2700-2060', very poor bond from 2060-1830' (estimated TOC).

Tools/Problems Summary

Date	Tool Type	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Description	Comments
	Pkr	7.0000	2.8750	4,200			

Cement Plug Summary

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing	Perf Comments	Interval Comments
	Open	San Andres	4,250	4,600	4	1404	120		

Completion History Summary

Date	Comments
6/29/2009	Spud well.
7/13/2009	Run CBL (4600'-surface) and CNL (5500-4540'). Found TOC at 1830' with good bond from 4600-4290', poor bond from 4290-3290', very poor bond from 3290-2700', free pipe from 2700-2060', very poor bond from 2060-1830' (estimated TOC).
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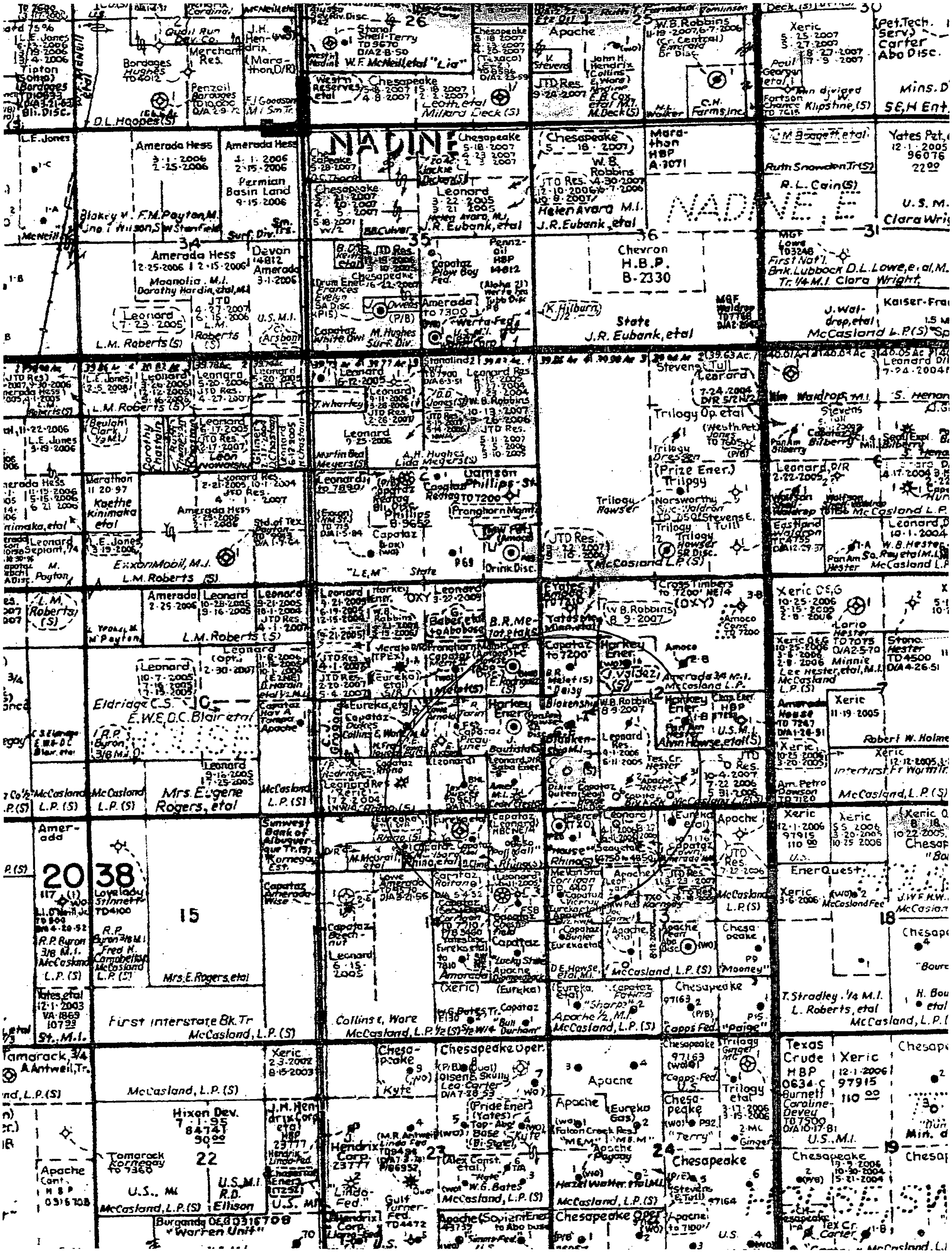
7/16/2009	RU CUDD ENERGY SERVICES. PRESS BACKSIDE TO 628#. TEST LINES TO 4500#. OPEN VALVE & PUMP 18 BBLS 1% KCL FW FOR 37 MINS @ .5 BPM, 811#. PUMP 30 BBLS 1% KCL FW FOR 30 MINS @ 1.0 BPM, 1275#. PUMP 45 BBLS 1% KCL FW FOR 30 MINS @ 1.5 BPM, 1507#. PUMP 63 BBLS 1% KCL FW FOR 30 MINS @ 2.1 BPM, 1623#. PUMP 78 BBLS 1% KCL FW FOR 30 MINS @ 2.6 BPM, 1762#. PUMP 93 BBLS 1% KCL FW FOR 30 MINS @ 3.1 BPM, 1808#. PUMP 105 BBLS 1% KCL FW FOR 30 MINS @ 3.5 BPM, 1855#. SD. ISDP - 1600#. 5 MIN - 1600#. 10 MIN - 1600#. 15 MIN - 1600#. RD CUDD. SI WELL 2 HRS. OPEN WELL. PRESS @ 900#. FLOWBACK 40 BBLS WATER
7/17/2009	RU GRAY WIRELINE. RIH W/ TEMP SURVEY & RUN BASE TEMP SURVEY. WITH REVERSE UNIT PUMP 100 BBLS 1% KCL FW @ 2.0 BPM & RUN TEMP SURVEY WHILE PUMPING. STOP PUMPING. WAIT 1 HR & RUN SI TEMP SURVEY. DETERMINED WATER TO GOING OUT IN TOP 400' OF OH. POH & RD GRAY WL. RELEASE PKR & POH W/ TBG
7/20/2009	PU SONIC HAMMER TOOL & RIH W/ TBG TO 5500'. RU CUDD ENERGY SERVICES. ROLL ACID IN FRAC TANK. TITRATE ACID TO 15%. TEST LINES TO 4050#. LOAD TBG & BRK CIRC W/ 42 BBLS 1% KCL FW. ACIDIZE SAN ANDRES OH W/ SONIC HAMMER. ACIDIZE 5500'-5427' W/ 1344 GALS 15% HCL ACID @ 3.8 BPM, TBG - 2025#, CSG - 1305#. ACIDIZE 5427'-5363' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2276#, CSG - 1444#. ACIDIZE 5363'-5303' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2320#, CSG - 1510#. ACIDIZE 5303'-5238' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2276#, CSG - 1374#. ACIDIZE 5238'-5172' W/ 2,016 GALS 15% HCL ACID @ 3.7 BPM, TBG - 2160#, CSG - 1444#. SHUT BOP RAMS & ACIDIZE 5205' W/ 4,494 GALS 15% HCL ACID @ 6.0 BPM, TBG - 3920#. CSG - 1480#. FLUSH TBG W/ 32 BBLS 1% KCL FW. FLUSH CSG W/ 70 BBLS 1% KCL FW. SD. RD CUDD.



NADINE
NADINE, E.
Chevron
H.B.P.
B-2330
State
J.R. Eubank, etal
L.M. Roberts (S)
Amerada Hess
Permian Basin Land
Eldridge C.S.
E.W.E.D.C. Blair etal
Mrs. Eugene Rogers, etal
Mrs. E. Rogers, etal
First Interstate Bk. Tr
McCasland, L.P. (S)
Collins & Ware
Chesapeake Oper.
Apache
Chesapeake
Hixon Dev.
Tamarack
Xeric
EnerQuest
Texas Crude
HBP
Trilogy Op. etal
Cross Timbers
Robert W. Holmes
ExxonMobil, M.I.
Drink Disc.
U.S., M.I.
Clara Wright
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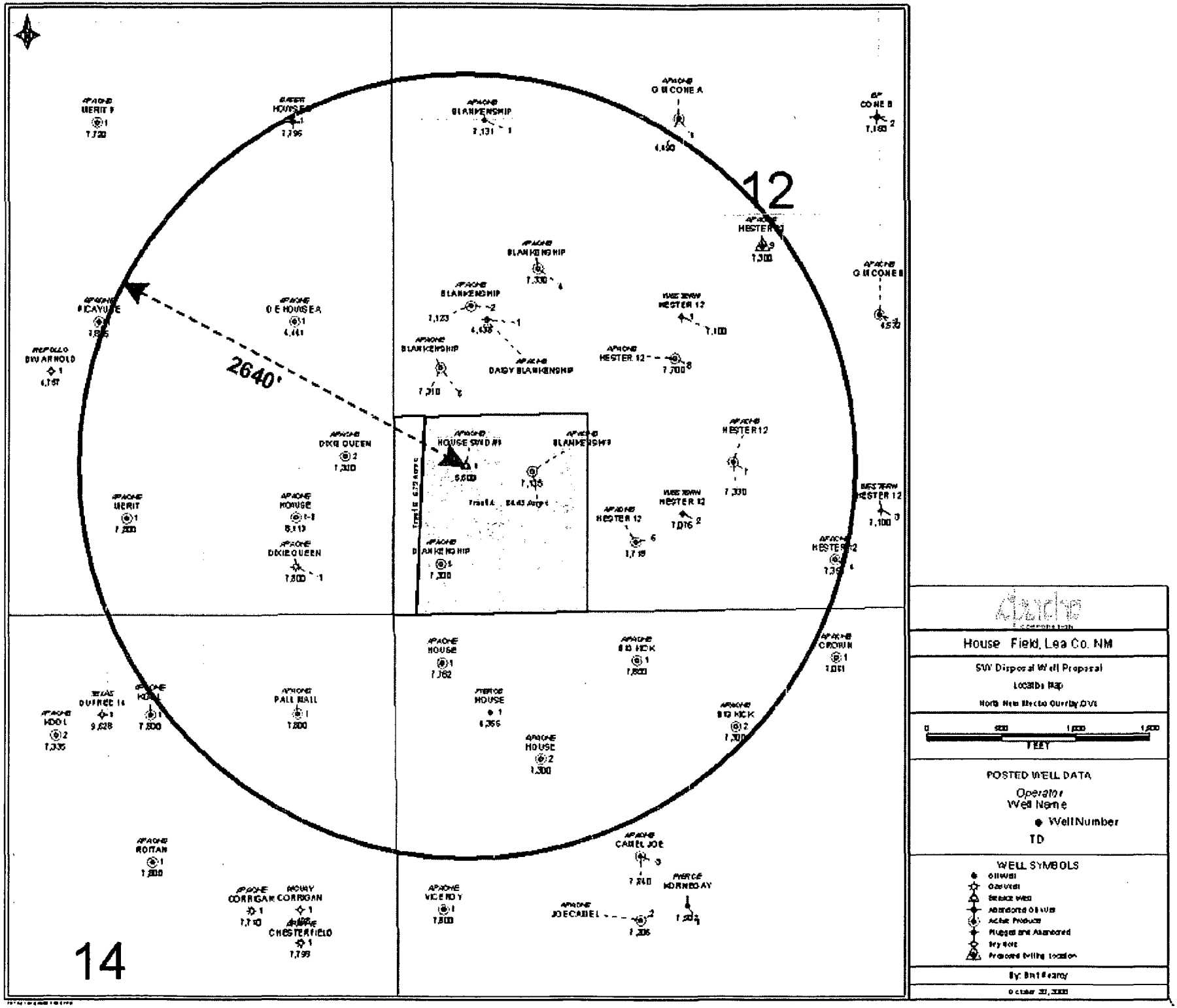
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2640'
House Field, Lea Co. NM
SW Disposal Well Proposal
Locator Map
North New Mexico Quarry (DVI)
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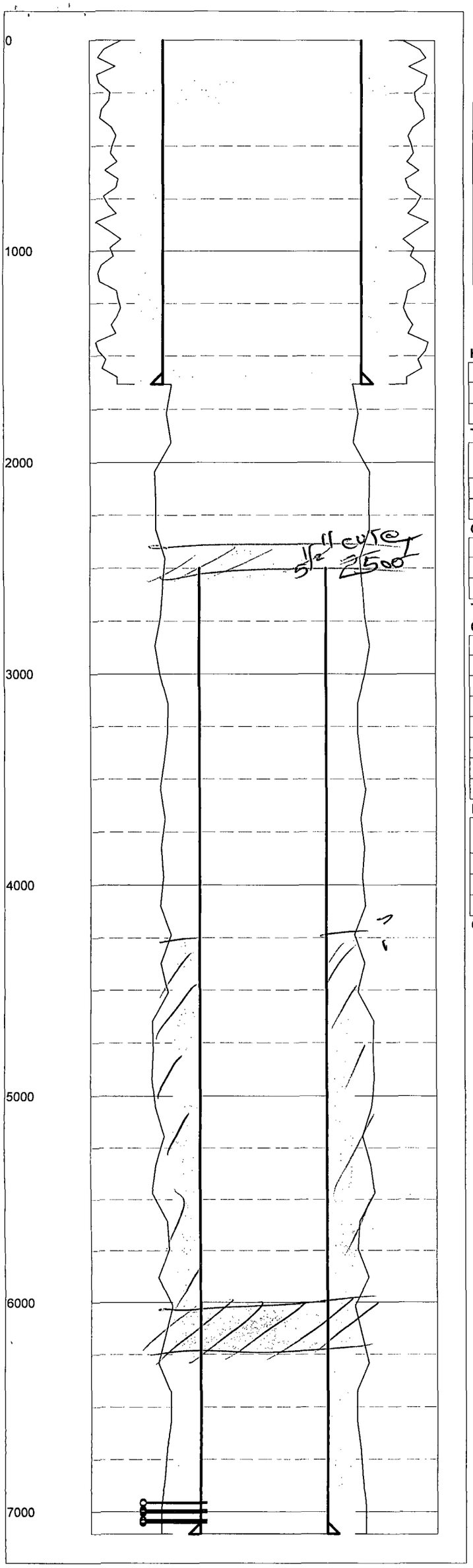
FEET
POSTED WELL DATA
Operator
Well Name
WellNumber
TD
WELL SYMBOLS
Oil Well
Gas Well
Service Well
Abandoned Oil Well
Active Producer
Plugged and Abandoned
Dry Hole
Proposed Drilling Location
By: Bill Feary
October 30, 2008

				Surface Casing				Intermediate Casing				Production Casing				
Operator Name	Lease Name	Well Num	TD	Csg Size	Csg Depth	Cmt Sx	TOC Est	Csg Size	Csg Depth	Cmt Sx	TOC Est	Csg Size	Csg Depth	Cmt Sx	TOC Est	Completion Intervals
APACHE CORP	BIG KICK	1	7800	8.625	1640	775	Surface			0		5.5	7800	1550	Surface	6969-7036; 6036-6802
APACHE CORP	BIG KICK	2	7320	8.625	1604	750	Surface			0		5.5	7320	1370	Surface	6053-7076
APACHE CORP	BLANKENSHIP	4	7330	8.625	1575	800	Surface			0		5.5	7330	1350	Surface	6034-6797; 6960-7048
APACHE CORP	BLANKENSHIP	5	7300	8.625	1570	800	Surface			0		5.5	7300	1600	Surface	6034-6734; 6024-6734; 6956-7025
APACHE CORP	BLANKENSHIP	6	7310	8.625	1600	950	Surface			0		5.5	7310	1500	Surface	6046-6404
APACHE CORP	~~CAMEL JOE~~	3	7840	8.625	1622	850	Surface			0		5.5	7840	1610	Surface	6028-6826
APACHE CORP	CONE A	1	7078	~~13 3/8~~	~~318~~	~~400~~		~~7 5/8~~	~~4484~~	~~800~~		5.5	7032	200	5872	7032-7078; 6638-6817
APACHE CORP	DAISY BLANKENSHIP	1	7125	12.75	319	320	Surface	8.625	4275	0		5.5	7125	693	~~3107~~	6990-7034; 7016-7034; 7012-7016; 4281-4325
APACHE CORP	DAISY BLANKENSHIP	2	7125	8.75	1539	1100	Surface			0		5.5	7125	~~625~~ 693	~~3160~~	6968-7009; 5946-6055
APACHE CORP	DAISY BLANKENSHIP	3	7105	13.375	320	325	Surface	8.625	3204	1200	291	5.5	7090	1100	712	7023-7029; 6674-6747; 5942-608
APACHE CORP	DIXIE QUEEN	1	7800	13.375	80	50	10	8.625	1591	740	Surface	5.5	7800	1730	Surface	6688-6736
APACHE CORP	DIXIE QUEEN	2	7320	8.625	1596	750	Surface			0		5.5	7320	1200	363	6044-6748
WESTERN EQUIPMENT CO	HESTER '12'	2	7100	8.625	1633	550	~~298~~ 0			0		5.5	7100	400	~~4781~~	6988-7056
WESTERN EQUIPMENT CO	HESTER 12	1	7100	8.625	1685	550	350			0		5.5	7099	550	3910	7022-7050; 6910-6954; 4274-4416
APACHE CORP	HESTER 12	4	7350	8.625	1593	800	Surface			0		5.5	7384	1600	Surface	6052-6810
APACHE CORP	HESTER 12	6	7718	8.625	1596	800	Surface			0		5.5	7718	1925	Surface	6018-6377; 6018-6786; 6018-7008
APACHE CORP	HESTER 12	7	7330	8.625	1585	800	Surface			0		5.5	7330	1350	Surface	6036-6815; 6036-7030
APACHE CORP	HESTER 12	8	7700	8.625	1578	800	Surface			0		5.5	7700	1900	Surface	6033-6710
APACHE CORP	HESTER 12	9	7347	8.625	1605	750	Surface			0		5.5	7347	1190	448	6064-6332; 6979-7084
APACHE CORP	HOUSE	1	7750	8.625	1700	900	Surface			0		4.5	7750	800	4079	6927-7019; 6008-6011
APACHE CORP	HOUSE	2	7300	8.625	1595	750	Surface			0		5.5	7300	1400	Surface	6022-6274
APACHE CORP	HOUSE B	1	8112	13.375	305	300	Surface	9.625	4530	950	1643	5.5	7650	300	5911	6930-7000; 7020-7060; 4264-4303
APACHE CORP	HOUSE C	1	7810	9.625	1547	800	Surface	7	4476	500	1351	4.5	7810	700	4598	7214-7782; 6964-7033; 7300-7649
APACHE CORP	KOOL	1	7760	8.625	1617	867	Surface			0		5.5	7760	1225	658	5970-6100
APACHE CORP	MERIT	1	7800	8.625	1591	740	Surface			0		5.5	7800	1615	Surface	6699-6739
APACHE CORP	PALL MALL	1	7800	8.625	1630	1125	Surface			0		5.5	7797	1300	260	6960-7051
APACHE CORP	PICAYUNE	1	7805	8.625	1630	595	186			0		5.5	7805	1425	Surface	6987-7090; 5962-7355
APACHE CORP	VICEROY	1	7800	8.625	1587	1000	Surface			0		5.5	7800	1220	727	5944-6104

interval applied changed to 11/24/09

4600-4700 O.H.



CURRENT COMPLETION

Last Updated: 2/26/2009 2:30:17 PM

Field Name	Lease Name	Well No.
House	Hester 12	2

County	State	API	GL (ft)	KB (ft)
Lea	New Mexico	30-025-07773	0	3566

Sec.	Twp/Blk	Rng/Svy	Footage
12	20S	38E	660' FSL & 1980' FWL from Section

Spud Date	Comp. Date	Prepared By	Last Updated
8/30/1956	10/2/1956	JLF	2/26/2009

Current Status

Plugged and abandoned.

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	12.2500	0	1,633	
	7.8750	1,633	7,106	

Tubular Summary

Date	Description	OD (in)	Wt (lb/ft)	Grade	Top (KB ft)	Bottom (KB ft)
	Surface Casing	8.6250	32.00	J55	0	1,633
	Production Casing	5.5000			2,500	7,106

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
	650	11.0000	8.6250	0	1,633
	550	7.8750	5.5000	4,250	7,106

Tools/Problems Summary

Cement Plug Summary

Date	No. Sx	OD (in)	Top (KB ft)	Bottom (KB ft)
	10	8.6250	0	25
	35	8.6250	178	300
	40	8.6250	1,544	1,684
	50	8.6250	1,683	1,684
	50	8.6250	1,683	1,683
	40	5.5000	2,390	2,550
	25	5.5000	6,002	6,223

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing
	Open	Drinkard	6,952	6,963			0
	Open	Drinkard	6,988	7,008	4	84	0
	Open	Drinkard	7,036	7,056	4	84	0

Completion History Summary

Current | Removed | Proposed - Remove | Proposed - Add

Last Updated: 2/26/2009 2:30:17 PM **C U R R E N T C O M P L E T I O N**

Field Name	Lease Name	Well No.	County	State	API	GL (ft)	KB (ft)
House	Hester 12	2	Lea	New Mexico	30-025-07773	0	3566

Sec.	Twp/Blk	Rng/Svy	Footage	Spud Date	Comp. Date	Prepared By	Last Updated
12	20S	38E	660' FSL & 1980' FWL from Section	8/30/1956	10/2/1956	JLF	2/26/2009

Current Status

Plugged and abandoned.

Detailed Summaries

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	12.2500	0	1,633	
	7.8750	1,633	7,106	

Tubular Summary

Date	Description	OD (in)	Wt (lb/ft)	Grade	Coupling	Top (KB ft)	Bottom (KB ft)	Comments
	Surface Casing	8.6250	32.00	J55		0	1,633	
	Production Casing	5.5000				2,500	7,106	15.5 & 17#. Pulled 2500' of pipe when well was plugged.

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Cement Description	Comments
	650	11.0000	8.6250	0	1,633		Circulate cement
	550	7.8750	5.5000	4,250	7,106		

Tools/Problems Summary

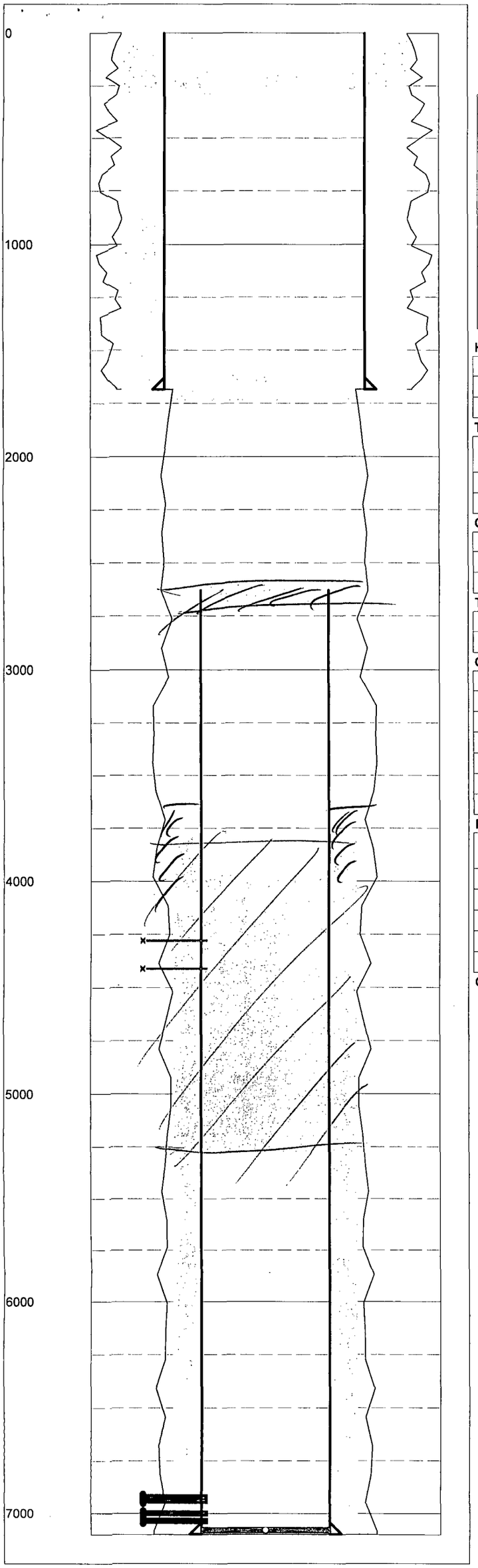
Cement Plug Summary

Date	No. Sx	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	10	8.6250	0	25	
	35	8.6250	178	300	
	40	8.6250	1,544	1,684	
	50	8.6250	1,683	1,684	
	50	8.6250	1,683	1,683	No fill tagged
	40	5.5000	2,390	2,550	
	25	5.5000	6,002	6,223	

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing	Perf Comments	Interval Comments
	Open	Drinkard	6,952	6,963			0		4 holes
	Open	Drinkard	6,988	7,008	4	84	0		
	Open	Drinkard	7,036	7,056	4	84	0		

Completion History Summary



CURRENT COMPLETION

Last Updated: 2/26/2009 2:26:46 PM

Field Name	Lease Name	Well No.
House	Hester 12	1

County	State	API	GL (ft)	KB (ft)
Lea	New Mexico	30-025-07773	3559	3566

Sec.	Twp/Blk	Rng/Svy	Footage
12	20S	38E	660' FSL & 1980' FWL from Section

Spud Date	Comp. Date	Prepared By	Last Updated
8/27/1956	10/4/1956	JLF	2/26/2009

Current Status

Plugged and abandoned.

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	12.2500	0	1,685	
	7.8750	1,685	7,100	

Tubular Summary

Date	Description	OD (in)	Wt (lb/ft)	Grade	Top (KB ft)	Bottom (KB ft)
	Surface Casing	8.6250	32.00	J55	0	1,685
	Production Casing	5.5000			2,630	7,099

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
	550	12.2500	8.6250	0	1,685
	550	7.8750	5.5000	3,780	7,099

Tools/Problems Summary

Date	Tool Type	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
	FC	5.5000	0.0000	7,065	

Cement Plug Summary

Date	No. Sx	OD (in)	Top (KB ft)	Bottom (KB ft)
	10	8.6250	0	25
	40	8.6250	160	300
	50	8.6250	1,605	1,735
	50	5.5000	2,555	2,681
	125	5.5000	3,940	5,272
	0	5.5000	7,065	7,099

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing
	Squeezed	San Andres	4,274	4,284			0
	Squeezed	San Andres	4,406	4,416			0
	Isolated	Drinkard	6,910	6,954			0
	Isolated	Drinkard	6,987	7,014			0
	Isolated	Drinkard	7,022	7,050			0

Completion History Summary

Current | Removed | Proposed - Remove | Proposed - Add

Last Updated: 2/26/2009 2:26:46 PM **C U R R E N T C O M P L E T I O N**

Field Name	Lease Name	Well No.	County	State	API	GL (ft)	KB (ft)
House	Hester 12	1	Lea	New Mexico	30-025-07773	3559	3566

Sec.	Twp/Blk	Rng/Svy	Footage	Spud Date	Comp. Date	Prepared By	Last Updated
12	20S	38E	660' FSL & 1980' FWL from Section	8/27/1956	10/4/1956	JLF	2/26/2009

Current Status

Plugged and abandoned.

Detailed Summaries

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	12.2500	0	1,685	
	7.8750	1,685	7,100	

Tubular Summary

Date	Description	OD (in)	Wt (lb/ft)	Grade	Coupling	Top (KB ft)	Bottom (KB ft)	Comments
	Surface Casing	8.6250	32.00	J55		0	1,685	
	Production Casing	5.5000				2,630	7,099	15.5 and 17#, 2630' pulled when plugged

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Cement Description	Comments
	550	12.2500	8.6250	0	1,685		Circulate cement
	550	7.8750	5.5000	3,780	7,099		

Tools/Problems Summary

Date	Tool Type	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Description	Comments
	FC	5.5000	0.0000	7,065			

Cement Plug Summary

Date	No. Sx	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	10	8.6250	0	25	
	40	8.6250	160	300	
	50	8.6250	1,605	1,735	
	50	5.5000	2,555	2,681	
	125	5.5000	3,940	5,272	
	0	5.5000	7,065	7,099	Cmt in shoe jt

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing	Perf Comments	Interval Comments
	Squeezed	San Andres	4,274	4,284			0		10 shots
	Squeezed	San Andres	4,406	4,416			0		4 shots
	Isolated	Drinkard	6,910	6,954			0		
	Isolated	Drinkard	6,987	7,014			0		
	Isolated	Drinkard	7,022	7,050			0		

Completion History Summary

ITEM VII OF NEW MEXICO OCD FORM C-108
DATA ON PROPOSED OPERATIONS
HOUSE SWD #1

1) Proposed average initial injection rate is 3000 bwpd.
   Maximum injection rate should not exceed 10,000 bwpd.

2) The injection system will be operated as a closed system.

3) Proposed average initial injection pressure is 850 psi.
   Proposed maximum pressure will not exceed the pressure limitations ordered by the Division. Apache Corp will perform step rate tests and anticipates securing a maximum injection pressure of 1200 psi.

4) Source water will come from the Blinebry, Tubb, and Drinkard formations.

5) Not Applicable.

ITEM VIII OF NEW MEXICO OCD FORM C-108
GEOLOGIC DATA ON THE INJECTION ZONE & UNDERGROUND DRINKING WATER
HOUSE SWD #1

The Formations being targeted for water injection are the San Andres and Glorieta ranging in depths from approximately 4250' to 5560' and 5560' to 5700' respectively, with the targeted injection interval ranging from 4600' to 5700'. These formations are Guadalupian in age and are a sequence of shallow marine carbonates, which have for the most part been dolomatized. The vertical extent of the injection zone is limited top and bottom by impermeable shales and carbonates. All injected fluids will remain in the reservoir.

Based on communications with the New Mexico States Engineer's Roswell office and a review of online files there are 8 fresh water wells (see attached) in the area of review. The deepest of these wells is 90' which is the assumed base of fresh water. All wellbores involved with the proposed injection program are constructed to not allow injection water into this fresh water source.

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 20S Range: 38E Sections: 12

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name (First): (Last): Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | WATERS Menu | Help

POD / SURFACE DATA REPORT 10/20/2008

(acre ft per annum) (quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest X Y are in Feet

DB File Nbr	Use	Diversion	Owner	POD Number	Source	Tws	Rng	Sec	q	q	q	Zone	X	Y
L 02735	STK	3	EARL KORNEGAY	L 02735	Shallow	20S	38E	12	4	4	4			
				L 02735 APPRO	Shallow	20S	38E	12	4	4	4			
				L 02735 CPPU		20S	38E	12	4	4	4			
L 06693 (E)	PRO	0	KINGS RESOURCES	L 06693 (E) EXP		20S	38E	12	2	4	2			
L 07933	DOM	0	ALVIN HOUSE	L 07933 EXP		20S	38E	12	1	4				
L 10049	DOM	3	AYLMER NUTTALL	L 10049	Shallow	20S	38E	12	4					
L 10050	STK	0	AYLMER NUTTALL	L 10050 EXP		20S	38E	12	4	2	2			
L 11004	DOM	3	ISAIAS PROVIZO	L 11004	Shallow	20S	38E	12	3	3	3			

Record Count: 8

(UTM are in Meters)			Start	Finish	Depth	Depth (in feet)
UTM_Zone	Easting	Northing	Date	Date	Well	Water
13	678836	3606463	12/26/1954	12/27/1954	90	65
13	678836	3606463	12/26/1954	12/27/1954	90	65
13	678836	3606463				
13	678821	3607469				
13	677916	3607357				
13	678535	3606758	12/20/1988	12/30/1988	90	50
13	678828	3607066				
13	677427	3606442	11/10/1999	11/10/1999	60	46

ITEMS IX THROUGH XII OF NEW MEXICO OCD FORM C-108
HOUSE SWD #1

IX This well will be acid stimulated in the recompleted intervals and as needed to eliminate near wellbore skin damage.

X See attached logs.

XI See attached water analysis for two fresh water wells.

XII After reviewing the geology in a one and one-half mile radius around the proposed waterflood area there appears no evidence of fractures or any hydrologic connection between the zone of injection and any overlying or underlying strata.

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:	APACHE CORPORATION	Sales RDT:	44217
Region:	PERMIAN BASIN	Account Manager:	FRANK GARDNER (575) 390-5194
Area:	MONUMENT, NM	Sample #:	372539
Lease/Platform:	OSCAR UNIT	Analysis ID #:	86970
Entity (or well #):	HOUSE	Analysis Cost:	$80.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	10/21/08
Analysis Date:	10/30/08
Analyst:	KIMBERLY POOLE
TDS (mg/l or g/m3):	1378.5
Density (g/cm3, tonne/m3):	1.002
Anion/Cation Ratio:	0.9999997
Carbon Dioxide:	0 PPM
Oxygen:	
Comments:	
RESISTIVITY 7.5 OHM-M @ 75°F	

Analysis of Sample 372539 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**415.0**	**11.71**	**Sodium:**	**331.2**	**14.41**
Bicarbonate:	**305.0**	**5.**	**Magnesium:**	**41.0**	**3.37**
Carbonate:	**0.0**	**0.**	**Calcium:**	**174.0**	**8.68**
Sulfate:	**491.0**	**10.22**	**Strontium:**	**2.0**	**0.05**
Phosphate:			**Barium:**	**0.1**	**0.**
Borate:			**Iron:**	**0.2**	**0.01**
Silicate:			Potassium:	16.0	0.41
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		7.03	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**7.03**	Manganese:	0.025	0.
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		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	0.10	2.10	-0.91	0.00	-0.98	0.00	-1.13	0.00	0.69	0.00	0.19
100	0	0.23	5.60	-0.91	0.00	-0.92	0.00	-1.12	0.00	0.54	0.00	0.24
120	0	0.37	9.45	-0.90	0.00	-0.83	0.00	-1.09	0.00	0.43	0.00	0.31
140	0	0.51	14.00	-0.88	0.00	-0.71	0.00	-1.05	0.00	0.34	0.00	0.38

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

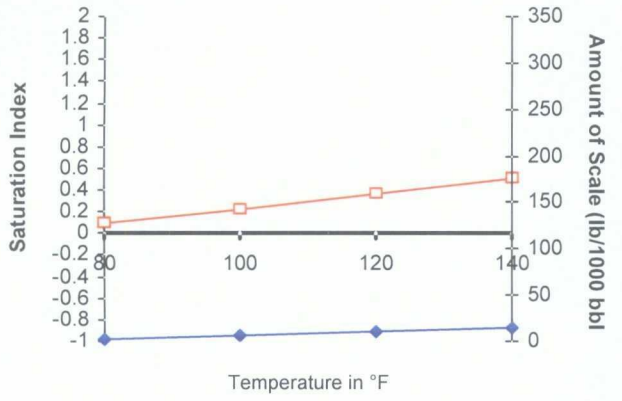
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

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

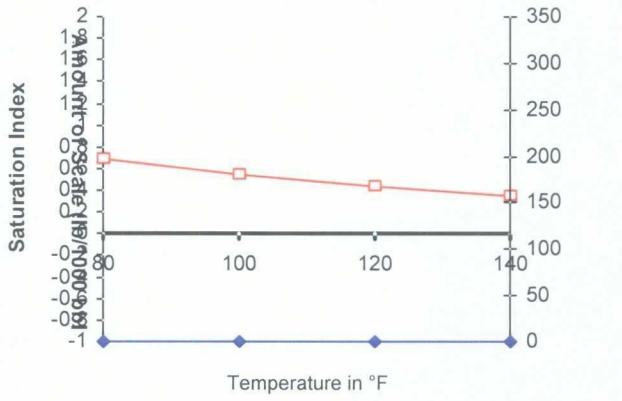
Scale Predictions from Baker Petrolite

Analysis of Sample 372539 @ 75 °F for APACHE CORPORATION, 10/30/08

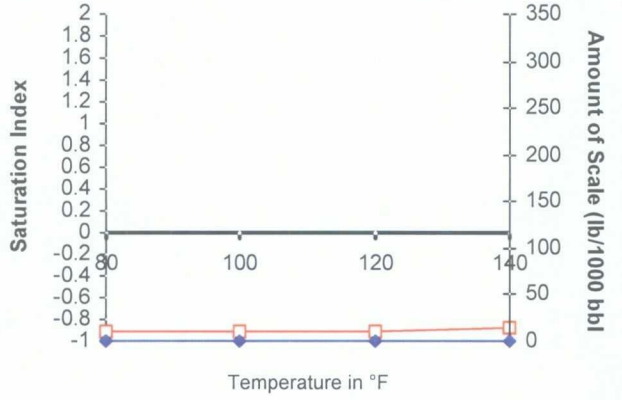
Calcite - CaCO3



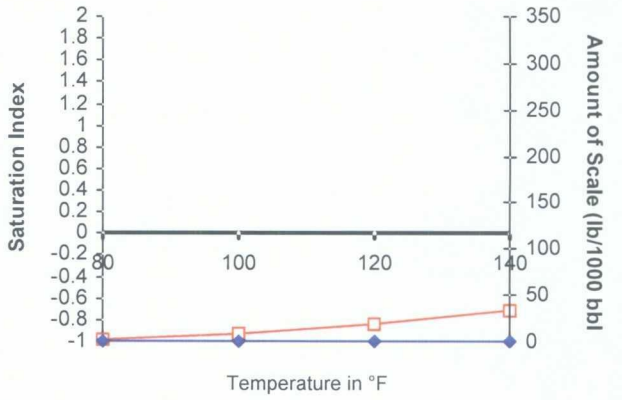
Barite - BaSO4



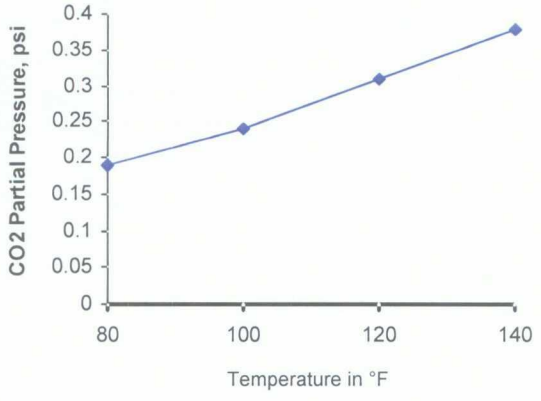
Gypsum - CaSO4*2H20



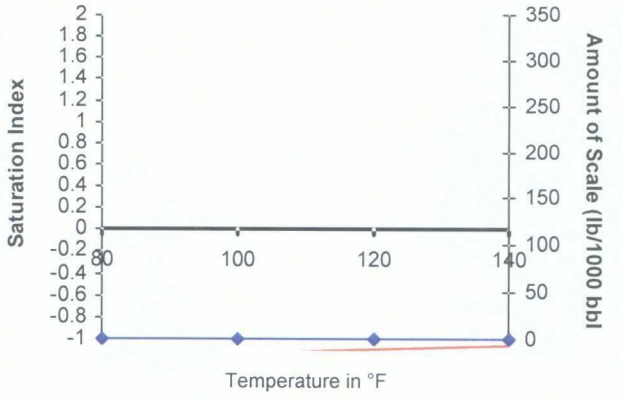
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



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Water Analysis Report by Baker Petrolite

Company:	APACHE CORPORATION	Sales RDT:	44217
Region:	PERMIAN BASIN	Account Manager:	FRANK GARDNER (575) 390-5194
Area:	MONUMENT, NM	Sample #:	372540
Lease/Platform:	GILBERT UNIT	Analysis ID #:	86969
Entity (or well #):	HORSE PEN	Analysis Cost:	$80.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	10/21/08
Analysis Date:	10/30/08
Analyst:	KIMBERLY POOLE
TDS (mg/l or g/m3):	1378.5
Density (g/cm3, tonne/m3):	1.001
Anion/Cation Ratio:	0.9999996
Carbon Dioxide:	0 PPM
Oxygen:	
Comments:	
RESISTIVITY 9 OHM-M @ 75°F	

Analysis of Sample 372540 @ 75 °F

Anions	mg/l	meq/l
Chloride:	**336.0**	**9.48**
Bicarbonate:	**220.0**	**3.61**
Carbonate:	**0.0**	**0.**
Sulfate:	**391.0**	**8.14**
Phosphate:		
Borate:		
Silicate:		
Hydrogen Sulfide:		0 PPM
pH at time of sampling:		7.21
pH at time of analysis:		
pH used in Calculation:		**7.21**

Cations	mg/l	meq/l
Sodium:	**216.0**	**9.4**
Magnesium:	**41.0**	**3.37**
Calcium:	**164.0**	**8.18**
Strontium:	**2.0**	**0.05**
Barium:	**0.1**	**0.**
Iron:	**0.9**	**0.03**
Potassium:	7.5	0.19
Aluminum:		
Chromium:		
Copper:		
Lead:		
Manganese:	0.025	0.
Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4{*}2H_2O$		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	0.10	2.10	-0.91	0.00	-0.98	0.00	-1.13	0.00	0.69	0.00	0.19
100	0	0.23	5.60	-0.91	0.00	-0.92	0.00	-1.12	0.00	0.54	0.00	0.24
120	0	0.37	9.45	-0.90	0.00	-0.83	0.00	-1.09	0.00	0.43	0.00	0.31
140	0	0.51	14.00	-0.88	0.00	-0.71	0.00	-1.05	0.00	0.34	0.00	0.38

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

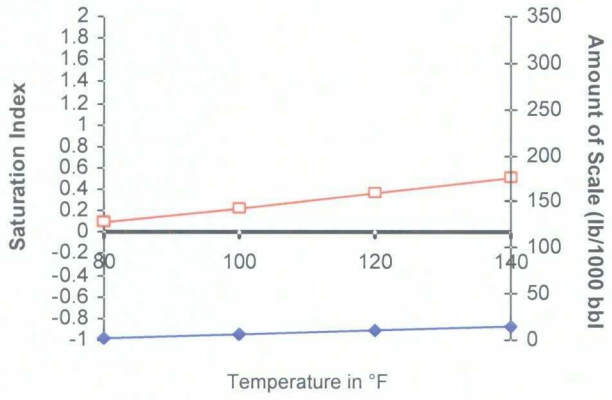
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

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

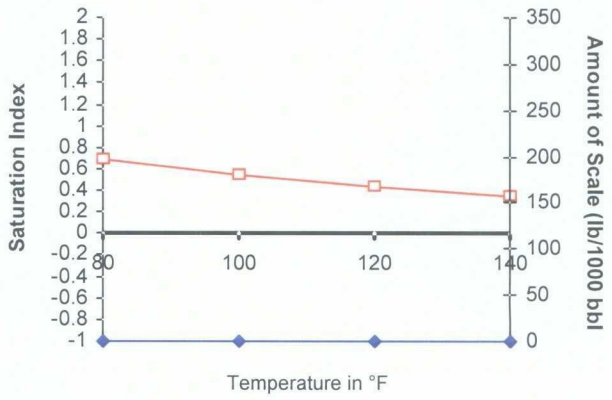
Scale Predictions from Baker Petrolite

Analysis of Sample 372540 @ 75 °F for APACHE CORPORATION, 10/30/08

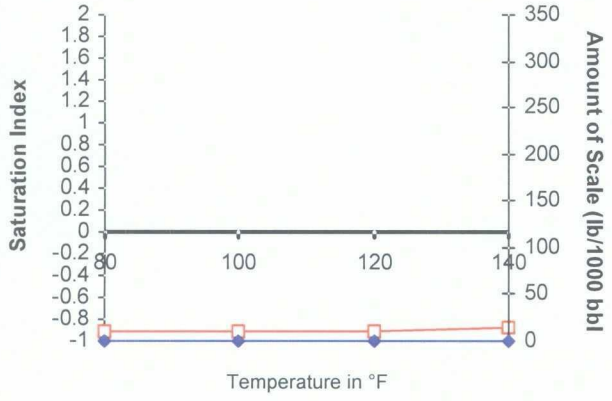
Calcite - CaCO3



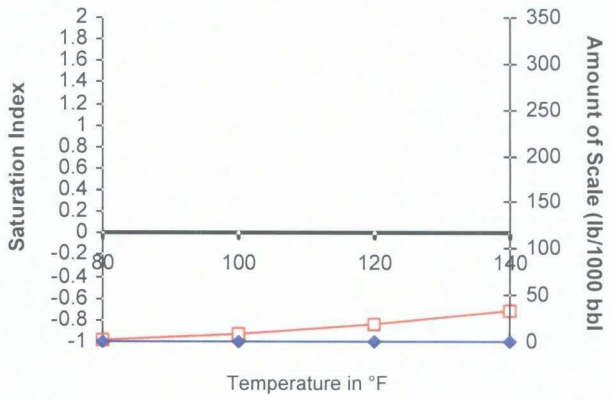
Barite - BaSO4



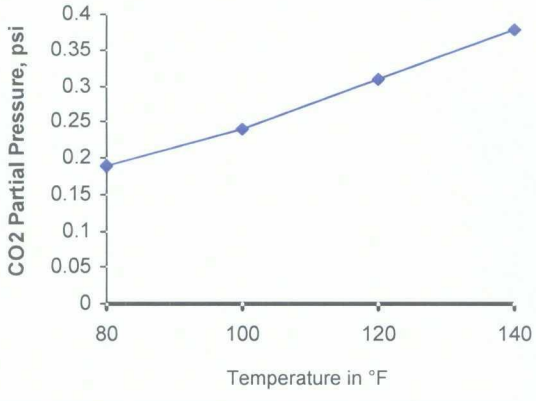
Gypsum - CaSO4*2H20



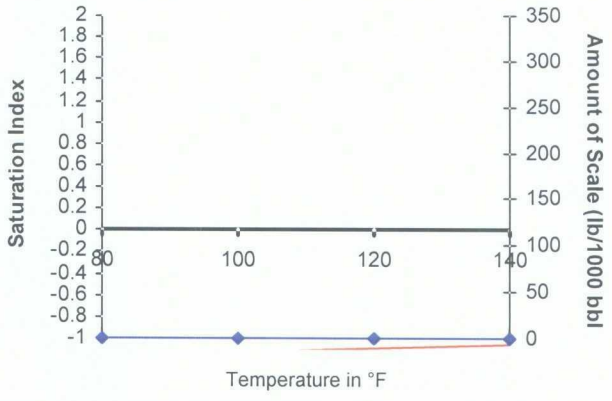
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



TWO WARREN PLACE / SUITE 1500 / 6120 S. YALE / TULSA, OKLAHOMA 74136-4224

Apache CORPORATION

WWW.APACHECORP.COM
Telephone: (918) 491-4900

October 26, 2009

New Mexico Oil Conservation Division
Attn: Mr. William Jones
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: C-108 Application for Disposal
House SWD #1
990' FSL & 500' FWL
Section 12, T20S, R38E
Lea County, New Mexico

Dear Mr. Jones,

Please accept this letter certifying Apache Corporation as the current surface owner where the House SWD #1 disposal well is located in the SW/4 SW/4 of Section 12, Township 20 South, Range 38 East, Lea County, New Mexico.

Yours truly,
APACHE CORPORATION

Michelle Hanson

Michelle Hanson
Landman
(918) 491-4838
(918) 491-4854 fax
michelle.hanson@apachecorp.com

APPLICATION FOR SALT WATER DISPOSAL
HOUSE SWD #1
OFFSET OPERATOR

Ray A Pierce
P.O. Box 1969
Eunice, NM 88231-1969

Sent via certified mail: 7007 2680 0001 1843 6902

A copy of the application was mailed to the offset operator listed above on October 26, 2009.

Sophie Mackay
Sophie Mackay, Engineering Technician

10/26/2009
Date

TWO WARREN PLACE / SUITE 1500 / 6120 S. YALE / TULSA, OKLAHOMA 74136-4224

Apache CORPORATION

WWW.APACHECORP.COM
Telephone: (918) 491-4900

October 26, 2009

Offset Operator

Ray A. Pierce
P.O. Box 1969
Eunice, NM 88231-1969

Re: House SWD #1
Unit M, Sec 12, T 20S, R 38E
SWD; San Andres-Glorieta
Lea County, New Mexico

Attached please find a copy of completed form C-108 with attachments, which Apache has filed with the New Mexico Oil Conservation Division, expanding the injection interval in the existing House SWD #1.

Sincerely,
Apache Corporation

Sophie Mackay

Sophie Mackay
Engineering Technician

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

Affidavit of Publication

State of New Mexico,
County of Lea.

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

of 1 issue(s).
Beginning with the issue dated
October 10, 2009
and ending with the issue dated
October 10, 2009

GENERAL MANAGER
Sworn and subscribed to before me
this 12th day of
October, 2009

Notary Public

My commission expires
June 16, 2013
(Seal)

OFFICIAL SEAL
Linda M Jones
NOTARY PUBLIC - STATE OF NEW MEXICO
My Commission Expires: _____

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

LEGAL

LEGAL NOTICE
OCOTOBER 10, 2009

Notice is hereby given of the application of Apache Corporation, 6120 South Yale, Suite 1500, Tulsa, Oklahoma 74136-4224 (918) 491-4864, to the Oil Conservation Division, New Mexico Energy, Minerals and Natural Resources Department, for approval to ammend existing SWD-1169.

Pool Name: SWD; San Andres-Glorieta
Well is located in Lea County, New Mexico

Lease/Unit Name: House SWD

Well No. 1 (30-025-39193)
Location: 990' FSL & 500' FWL, Section 12, T20S, R38E, Unit M

The injection formations are the San Andres and the Glorieta located between the interval of 4250' MD to 5700' MD below the surface of the ground. Expected maximum injection rate is 10,000 barrels per day and the expected maximum injection pressure is 1200 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.
#25298

4600

67103439 00040192
SOPHIE MACKAY
APACHE CORPORATION
6120 SOUTH YALE, SUITE 1500
TULSA, OK 74136

Jones, William V., EMNRD

From: Frederick, Jeff [Jeff.Frederick@apachecorp.com]
Sent: Tuesday, November 24, 2009 1:41 PM
To: Jones, William V., EMNRD
Cc: Cooke, Amber; Mackay, Sophie
Subject: RE: Disposal application from Apache Corp: House SWD #1 30-015-39193 (Amend SWD-1169 to add the upper San Andres Perforations)

Will:

Per our telephone conversation regarding your email correspondence below, I would like to omit the Upper San Andres perforation intervals from the amended injection permit but include the additional Glorieta open hole interval (5500-5700'). Therefore the requested amended injection interval will be from 4600-5700' overall and includes the Lower San Andres and the Glorieta intervals. From our telephone conversation I understood that this amended interval should be approved administratively with no problems. Please let me know if this is not the case or you require additional information.

Thanks,

Jeff

From: Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]
Sent: Tuesday, November 24, 2009 11:29 AM
To: Cooke, Amber
Cc: Ezeanyim, Richard, EMNRD; Kautz, Paul, EMNRD; Hill, Larry, EMNRD; Warnell, Terry G, EMNRD
Subject: Disposal application from Apache Corp: House SWD #1 30-015-39193 (Amend SWD-1169 to add the upper San Andres Perforations)

Hello Amber:
Sophie gave me your name for a contact concerning her pending applications while she is gone. Terry Warnell and I talked with the engineer on this project a couple weeks ago – before I had looked at this in detail. I assume you are in contact with the other people on this project.

This new well has a recent permit to dispose into the lower San Andres Open Hole from 4600 – 5700 feet called SWD-1169. Within the past month Terry processed an injection pressure increase (Order IPI-357) allowing a maximum surface injection pressure of 1720 psi.

After reviewing this application to add injection perforations in the upper San Andres:

There are numerous, nearby producing wells in this upper San Andres interval. Our current policy is to only process applications such as this at an examiner hearing where the waterflooding or correlative rights issues can be addressed – likely by a landman and reservoir engineer. In addition, there are possible cement top problems in the offsetting wells in the upper San Andres which could cause bradenhead issues and possible invasion of the Salado or other formations. The table of AOR wells submitted with the application did not have API numbers or locations of the wells listed and there were discrepancies with the data in the imaged well files – so this is another problem that would need to be addressed. If this upper San Andres interval were permitted for injection, the allowable injection pressure would be greatly reduced until adequate data could be gathered as to the fracture pressure.

It appears that the Lower San Andres and Upper Glorieta are OK in this area for disposal due to the lack of productivity and well cemented wellbores. The Upper San Andres seems to have problems.

This administrative application is being denied.
Apache does have the right to pursue this to an examiner hearing – please let me know if you do this.

Regards,

William V. Jones PE
New Mexico Oil Conservation Division
1220 South St. Francis
Santa Fe, NM 87505
505-476-3448

Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Tuesday, November 24, 2009 10:29 AM
To: 'amber.cooke@apachecorp.com'
Cc: Ezeanyim, Richard, EMNRD; Kautz, Paul, EMNRD; Hill, Larry, EMNRD; Warnell, Terry G, EMNRD
Subject: Disposal application from Apache Corp: House SWD #1 30-015-39193 (Amend SWD-1169 to add the upper San Andres Perforations)

Hello Amber:
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Regards,

William V. Jones PE
New Mexico Oil Conservation Division
1220 South St. Francis
Santa Fe, NM 87505
505-476-3448

DUPLICATE

Form C-103
(Revised 3-55)

NEW MEXICO OIL CONSERVATION COMMISSION
MISCELLANEOUS REPORTS ON WELLS
(Submit to appropriate District Office as per Commission Rule 1106)

HOBBS OFFICE OCC
1956 OCT 3 PM 3:00

COMPANY TEXAS CRUDE OIL COMPANY 111 CAPITOL BLDG. MIDLAND, TEXAS
(Address)

LEASE MEEKER WELL NO. 8-12 UNIT N S 12 T 20-S R 38-E

DATE WORK PERFORMED Oct. 1, 1956 POOL HOUSE

This is a Report of: (Check appropriate block)

- [ ] Beginning Drilling Operations
- [ ] Plugging
- [X] Results of Test of Casing Shut-off
- [ ] Remedial Work
- [ ] Other

Detailed account of work done, nature and quantity of materials used and results obtained.

DRILLED 7 7/8 HOLE TO 7106; SET 5½" CASING @ 7106 AND CEMENTED WITH 400 SKS OF 4% AND 150 SKS OF REG. TOP OF CEMENT 4850 WAITED 30 HOURS AND TESTED CASING WITH 1000# WATER PRESSURE. TEST O.K.

FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

Original Well Data:

DF Elev. _____ TD _____ PBD _____ Prod. Int. _____ Compl Date _____

Tbng. Dia _____ Tbng Depth _____ Oil String Dia _____ Oil String Depth _____

Perf Interval (s) _____

Open Hole Interval _____ Producing Formation (s) _____

RESULTS OF WORKOVER:	BEFORE	AFTER
Date of Test		
Oil Production, bbls. per day		
Gas Production, Mcf per day		
Water Production, bbls. per day		
Gas-Oil Ratio, cu. ft. per bbl.		
Gas Well Potential, Mcf per day		

Witnessed by _____ _____ (Company)

OIL CONSERVATION COMMISSION

Name C. M. Leedy

Title Engineer District II

Date OCT 10 1956

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

Name John G. Olive

Position ENGINEER

Company TEXAS CRUDE OIL COMPANY

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

WELL API NO. 30-025-07773

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: Hester "12"

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

2. Name of Operator: Western Equipment Co.

8. Well No. 2

3. Address of Operator: P.O. BOX 5457 Midland, Texas 79704 Phone 683-6296

9. Pool name or Wildcat: House - Drinkard

4. Well Location
Unit Letter N : 1980 Feet From The West Line and 660 Feet From The South Line

Section 12 Township 20-S Range 38-E NMPM Lea County

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

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 OPNS.	☐	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.

MIRU 3-29-90 Plug # 1- 25 SX 6223 - 6002' Top of Fish 6223'

Plug # 2-40 SX 2550 - 2390' Tag Stub at 5-1/2 @ 2500'

Plug # 3- 50 SX 1683 - no fill tag

Plug # 4- 50 SX 1683 - Tag 1684'

Plug # 5- 40 SX 1684-1544'

Plug # 6- 35 SX 300-178'

Plug # 7- 10 SX Surf 25' Plug to abandon 4-10-90 9.5 Mud between all plugs

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

SIGNATURE _____ TITLE President DATE 5-11-90

Eugene R. Monro WESTERN EQUIPMENT CO.
TYPE OR PRINT NAME P. O. BOX 5457
MIDLAND, TX 79704 TELEPHONE NO. 915-683-629

(This space for State Use) APPROVED BY ORIGINAL SIGNED BY GARY WINK FIELD REP. II DEC 0 1 1995

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Submit To Appropriate District Office
Two Copies
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

RECEIVED
OCT 14 2009
HOBBSOCD

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-105
July 17, 2008

1. WELL API NO. 30-025-39193
2 Type of Lease ☐ STATE ☒ FEE ☐ FED/INDIAN
3 State Oil & Gas Lease No. NA

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

4 Reason for filing

☒ **COMPLETION REPORT** (Fill in boxes #1 through #31 for State and Fee wells only)

☐ **C-144 CLOSURE ATTACHMENT** (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33, attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)

5 Lease Name or Unit Agreement Name: House SWD
6 Well Number: 001

7 Type of Completion
☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER

8 Name of Operator: Apache Corporation
9 OGRID: 873
10 Address of Operator: 6120 S Yale Ave, Suite 1500, Tulsa, OK 74136-4224
11 Pool name or Wildcat: SWD; San Andres

12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	M	12	20S	38E		990	South	500	West	Lea
BH:										

13. Date Spudded	14. Date T.D. Reached	15. Date Rig Released	16. Date Completed (Ready to Produce)	17. Elevations (DF and RKB, RT, GR, etc.)
06/29/2009	07/07/2009	07/07/2009	08/12/2009	3563' GR

18. Total Measured Depth of Well	19. Plug Back Measured Depth	20. Was Directional Survey Made?	21. Type Electric and Other Logs Run
5500'	5500'	No	CBL, CNL, TGR

22. Producing Interval(s), of this completion - Top, Bottom, Name
San Andres OH fr/ 4600' - 5500'

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"	40 #	1552'	12-1/4"	620 sx	
7"	26 #	4600'	8-3/4"	950 sx	

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-7/8"	4570'	4570'

26. Perforation record (interval, size, and number)
San Andres OH fr/ 4600' - 5500'

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
4600' - 5500'	19,992 gals 15% acid
4600' - 5500'	13,902 gals 15% acid
4600' - 5500'	50,526 gals gel & 100,000 # 20/40 sand

28. **PRODUCTION**

Date First Production	Production Method (*Flowing, gas lift, pumping - Size and type pump*)	Well Status (*Prod. or Shut-in*)

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl	Gas - MCF	Water - Bbl	Oil Gravity - API - (*Corr.*)

29 Disposition of Gas (*Sold, used for fuel, vented, etc.*)
30 Test Witnessed By

31 List Attachments
Inclination Report, C-102, C-103, MIT Chart, Logs

32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit

33. If an on-site burial was used at the well, report the exact location of the on-site burial.
Latitude Longitude ☐ NAD 1927 ☐ 1983

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Sophie MacKay Printed Name Sophie Mackay Title Engineering Technician Date 10/01/2009

E-mail Address sophie.mackay@apachecorp.com

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates 2864'	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. 7 Rivers 3090'	T. Devonian	T. Cliff House	T. Leadville
T. Queen 3653'	T. Silurian	T. Menefee	T. Madison
T. Grayburg 4007'	T. Montoya	T. Point Lookout	T. Elbert
T. San Andres 4261'	T. Simpson	T. Mancos	T. McCracken
T. Gloricta	T. McKee	T. Gallup	T. Ignacio Otzte
T. Paddock	T. Ellenburger	Base Greenhorn	T.Granite
T. Blinebry	T. Gr. Wash	T. Dakota	
T.Tubb	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T.Todilto	
T. Abo	T. Rustler 1528'	T. Entrada	
T. Wolfcamp	T.	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to..... No. 3, from.....to.....
No. 2, from.....to..... No. 4, from.....to.....

IMPORTANT WATER SANDS

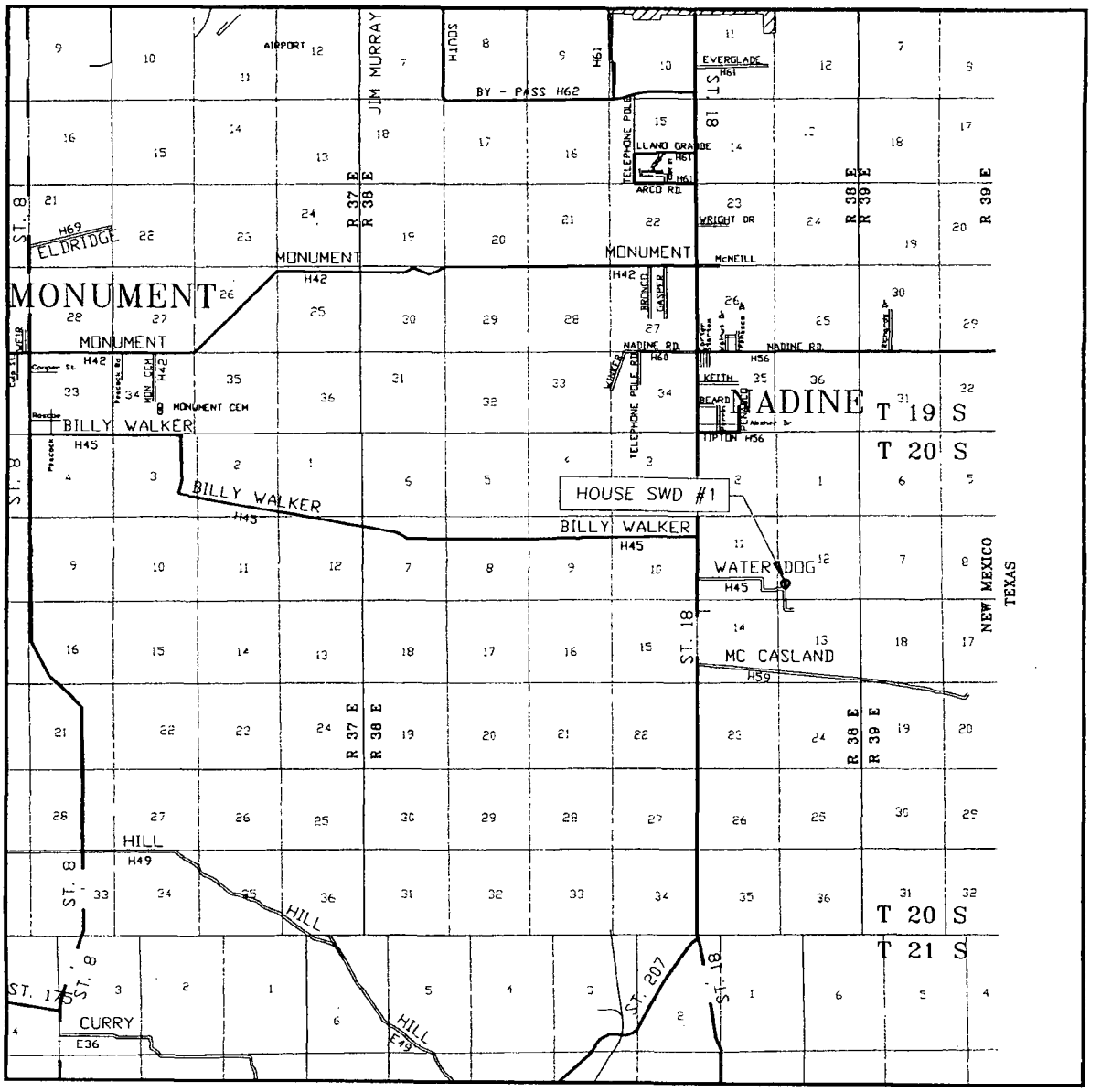
Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....
No. 2, from.....to.....feet.....
No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology		From	To	Thickness In Feet	Lithology

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 12 TWP. 20-S RGE. 38-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 990' FSL & 500' FWL

ELEVATION 3563'

OPERATOR APACHE CORPORATION

LEASE HOUSE SWD

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(505) 393-6161 Fax:(505) 393-0720
District II
1301 W. Grand Ave., 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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-103
Permit 84336

WELL API NUMBER
30-025-39193

5. Indicate Type of Lease
P

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 DIFFRENT RESERVIOR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
HOUSE SWD

1. Type of Well: S

8. Well Number
001

2. Name of Operator
APACHE CORP

9. OGRID Number
873

3. Address of Operator
6120 S. YALE , , SUITE 1500 TULSA , OK 74136

10. Pool name or Wildcat

4. Well Location
Unit Letter M : 990 feet from the S line and 500 feet from the W line
Section 12 Township 20S Range 38E NMPM Lea County

11. Elevation (Show whether DR, KB, BT, GR, etc.)
3563 GR

Pit or Below-grade Tank: Application ☐ or Closure ☐
Pit Type _____ Depth to Groundwater_____ Distance from nearest fresh water well_____ Distance from nearest surface water_____
Pit Liner Thickness:_____ mil Below-Grade Tank: Volume_____ bbls; Construction Material_____

12. 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 ☐	ALTER CASING ☐
TEMPORARILY ABANDON ☐	CHANGE OF PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDON ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
Other:		Other: **Drilling/Cement**	☒

13. 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.

06/29/2009 SPUD

07/01/2009 Drill 12 1/4" hole to 1,552'
Set 9 5/8", 40#/ft casing to 1,552' - cement to surface.

07/05/2009 Drill 8 3/4" hole to 4,600'
Set 7" 26#/ft casing to 4,600' - cement to surface.

07/07/2009 Drill 6 1/8" hole to 5,500' Set bridge plug.
07/07/2009 Release Rig @ 2:00 A.M.
Open hole completion with 3 1/2" tubing set with packer at approx. 4,600' in 7" casing. **6/29/2009** Spudded well.

Casing and Cement Program

Date	String	Fluid Type	Hole Size	Csg Size	Weight lb/ft	Grade	Est TOC	Dpth Set	Sacks	Yield	Class	1* Dpth	Pres Held	Pres Drop	Open Hole
	Surf		12.25	9.625	40		0	1552	620		C				
	Int1		8.75	7	26		0	4600	950						

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Electronically Signed TITLE Engineering Tech DATE 7/15/2009
Type or print name Lana Williams E-mail address lana.williams@apachecorp.com Telephone No. 918-491-4900

For State Use Only:
APPROVED BY: Paul Kautz TITLE Geologist DATE 7/15/2009 3:52:57 PM

Injection Permit Checklist (8/14/09)

Case _____ R-_____ SWD 1169-A WFX _____ PMX _____ IPI _____ Permit Date 11/24/09 UIC Qtr (O/N/D)

Wells 1 Well Name: HOUSE SWD #1

API Num: (30-) ~~025~~ 39193 Spud Date: 6/29/09 New/Old: N (UIC primacy March 7, 1982)

Footages 990 FSL/500 FWL Unit M Sec 12 Tsp 20S Rge 38E County Lea

Operator: APACHE CORP. Contact SOPHIE MacKay

OGRID: 873 RULE 5.9 Compliance (Wells) _____ (Finan Assur) _____

Operator Address: 6120 S. Yale Ave, Suite 1500, TULSA, OK 74136-4224

Current Status of Well: _____

Planned Work to Well: _____ Planned Tubing Size/Depth: 2 7/8 @ 4200'

	Sizes Hole.....Pipe	Setting Depths	Cement Sx or Cf	Cement Top and Determination Method
Existing ___ Surface	12 1/4 9 5/8	1552	620	CIRC
Existing ___ Intermediate	8 3/4 7"	4,600	1200	CIRC
Existing ___ Long String	6 1/8			

DV Tool _____ Liner _____ Open Hole _____ Total Depth 5,700

Well File Reviewed _____

Diagrams: Before Conversion ____ After Conversion ✓ Elogs in Imaging File: CBL / CNL

Intervals:	Depths	Formation	Producing (Yes/No)
Above (Name and Top)			
Above (Name and Top)	3890	GBG Top	
Injection..... Interval TOP:	~~4250~~ 4600	SA 4250	
Injection..... Interval BOTTOM:	~~4600~~ 5700	GLOR. (Open Hole) 5560	
Below (Name and Top)	6023	Blinebry	

See SWD-1169

Poor Bond above 4290'

See CBL ⇒ OK

1720 PSI Max. WHIP

_____ Open Hole (Y/N)

_____ Deviated Hole?

Sensitive Areas: Capitan Reef _____ Cliff House _____ Salt Depths _____

.... Potash Area (R-111-P) _____ Potash Lessee _____ Noticed? ____

Fresh Water: Depths: 0-90' Wells 8 Analysis? Yes Affirmative Statement ✓

Disposal Fluid Sources: Blinebry/Tubb/DRK. Analysis?

Disposal Interval Production Potential/Testing/Analysis Analysis: _____

_____

Notice: Newspaper(Y/N) ✓ Surface Owner APACHE Mineral Owner(s) _____

RULE 26.7(A) Affected Parties: ~~Western Equip Co.~~ / Ray Pierce

_____

Area of Review: Adequate Map (Y/N) ✓ and Well List (Y/N) ✓

Active Wells 24 Num Repairs 0 Producing in Injection Interval in AOR No

..P&A Wells 2 Num Repairs ~~0~~ 2 All Wellbore Diagrams Included? ✓

~~26~~

Questions to be Answered:

Run inj Survey if additional pressure allowed

_____

_____

Required Work on This Well: _____ Request Sent _____ Reply: _____

AOR Repairs Needed: _____ Request Sent _____ Reply: _____

_____ Request Sent _____ Reply: _____

David ADR Mohler