

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: 303 Veterans Airpark Lane Ste. 3000, Midland, TX
CONTACT PARTY: Gary Timmerman 432-818-1026 or Michelle Hansen PHONE: 432-818-1000
- 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. Just adding Paddock perts 5946-6055'
Current interval 6046-7028'
- IV. Is this an expansion of an existing project? ☒ Yes ☐ No
If yes, give the Division order number authorizing the project: R13176 Case 14360
- 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: Beverly Hatfield TITLE: Sr. Staff Regulatory Tech

SIGNATURE: Beverly Hatfield DATE: 2-9-12

E-MAIL ADDRESS: beverly.hatfield

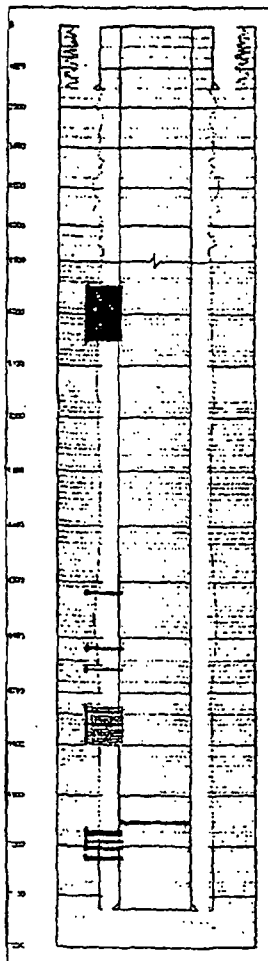
☒ * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.
Please show the 7-10-2009 initial injection application

Oil Conservation Division
DISTRIBUTION: On Case No. 8
Exhibit No. 8

appropriate District Office

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Apache Corporation (873)WELL NAME & NUMBER: Blankenship #2WELL LOCATION: 2075' FSL & 555' FWL
FOOTAGE LOCATIONUNIT LETTER
LSECTION
12TOWNSHIP
20SRANGE
38EWELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 12-1/4" Casing Size: 8-5/8" @ 1527'Cemented with: 698 sx. or ft³Top of Cement: surface Method Determined: circulateIntermediate CasingHole Size: Casing Size: Cemented with: sx. or ft³Top of Cement: Method Determined: Production CasingHole Size: 7-7/8" Casing Size: 5-1/2" @ 7125'Cemented with: 625 sx. or ft³Top of Cement: 3160' Method Determined: Temp SurveyTotal Depth: 7125'Injection Interval5900' feet to 7100' (perforated)

(Perforated or Open Hole; indicate which)

↓
Proposed
Paddock 5946-6055

INJECTION WELL DATA SHEET

Tubing Size: 2-7/8" Lining Material: none

Type of Packer: 5-1/2" Baker Lok-Seal

Packer Setting Depth: 5900'

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? Producer

2. Name of the Injection Formation: Blinberry / Tubb / Drinkard / Paddock

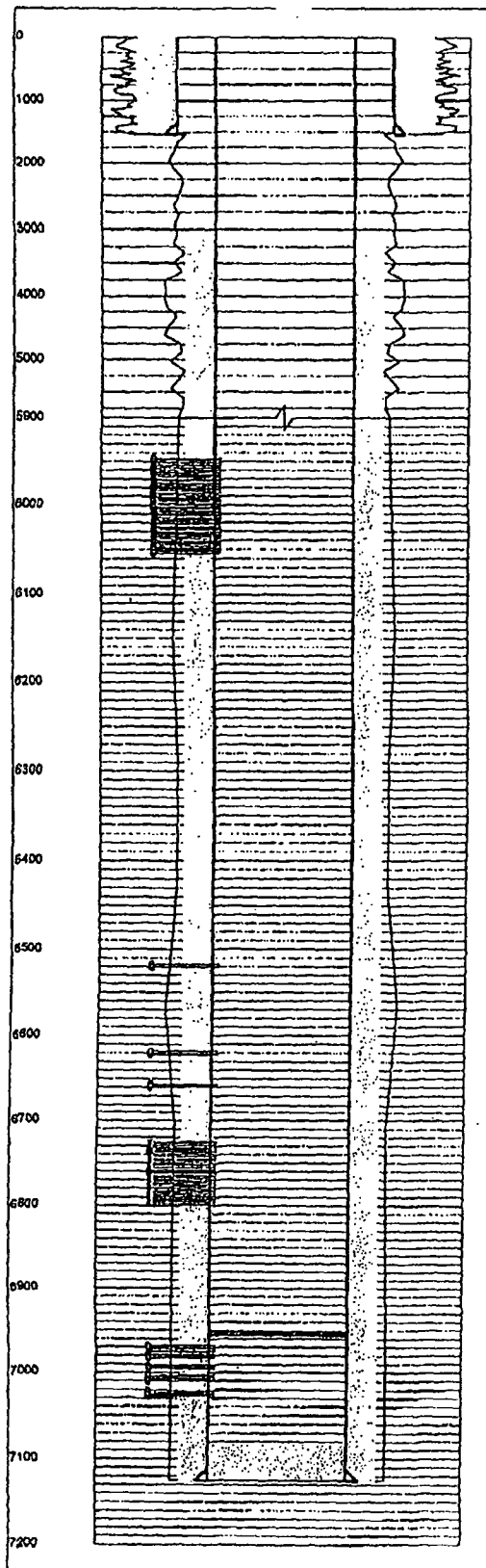
3. Name of Field or Pool (if applicable): House; Blinberry, South / House; Tubb / House; Drinkard / House Paddock

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: _____

The next higher zone is the San Andres @ +/- 4264'

The next lower zone is the Abo @ +/- 7120'



CURRENT COMPLETION

Last Updated:

5/6/2009 5:08:28 PM

Field Name	House	Lease Name	Blankenship	Well No.	2
County	New Mexico	API	30-028-07767	GL (ft)	3537
Lea	New Mexico	30-028-07767		KB (ft)	3580
Sac.	Twp/Blk	Rng/By	Footage		
L-12	20S	38E	2075' FSL & 555' FWL from Section		
Spud Date	9/1/1957	Comp. Date	10/18/1957	Prepared By	JLF
				Last Updated	6/6/2009
Current Status					
Currently producing from Binebry and Tubb perforations.					

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
9/1/1957	12.0000	0	1,527	
9/1/1957	7.8750	1,527	7,125	

Tubular Summary

Date	Description	OD (in)	WT (lb/ft)	Grade	Top (KB ft)	Bottom (KB ft)
9/1/1957	Surface Casing	8.6250	32.00		0	1,527
9/1/1957	Production Casing	6.5000			0	7,125

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
9/1/1957	695	12.0000	8.6250	0	1,527
9/1/1957	625	7.8750	6.5000	3,160	7,125

Tools/Problems Summary

Date	Tool Type	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
4/18/2007	CIBP	6.5000	0.0000	6,950	

Cement Plug Summary

Date	No. Sx	OD (in)	Top (KB ft)	Bottom (KB ft)
9/1/1957	0	6.5000	7,084	7,125

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing
10/18/1957	Open	Drinkard	6,968	6,982			0
10/18/1957	Open	Drinkard	6,991	6,995			0
10/18/1957	Open	Drinkard	7,003	7,009			0
6/23/1962	Open	Drinkard	7,021	7,025			0
6/23/1962	Open	Drinkard	7,026	7,028			0
9/5/1979	Squeezed	Tubb	6,725	6,800			0
3/10/2005	Open	Binebry	6,848	6,855	4	440	0
4/18/2007	Open	Tubb	6,517	6,521	2	10	120
4/18/2007	Open	Tubb	6,618	6,622	2	10	120
4/18/2007	Open	Tubb	6,666	6,660	2	10	120
4/18/2007	Open	Tubb	6,733	6,737	2	10	120
4/18/2007	Open	Tubb	6,758	6,762	2	10	120

Completion History Summary

Date	Comments
9/1/1957	Spud well
10/18/1957	Complete well in Drinkard (D1) perforations.
6/23/1962	Complete well in Drinkard (D2) perforations. Produced these perforations under a packer, isolating the D1 perforations.
9/5/1979	Set CIBP at 5870' and perforate Tubb (T1) from 6725-6800' with 10 holes.
1/6/1981	Drift out CIBP at 6870' and clean out to 7040'
3/15/2005	Set RBP at 6835' and cap w/ 2 sx sand. Perforate Binebry (B1) perforations and produce from B1 perforations.
4/18/2007	Pull RBP at 6835' and run CNL and CIL from 5500-6950'. Set CIBP at 6850' and cap w/ 2 sx cement. Perforate Tubb (T2) perfs from 6517-6762' with 45 holes.

Last Updated:

5/6/2009 5:06:28 PM CURRENT COMPLETION

Field Name	Lease Name	Well No.	County	State	API	GL (ft)	KB (ft)
Houma	Blankenship	2	La	New Mexico	30-025-07787	3557	3589
Sec.	Trp/Blk	Rng/Svy	Footage	Spud Date	Comp. Date	Prepared By	Last Updated
L-12	208	38E	2079 FSL & 655 FWL from Section	9/1/1957	10/18/1957	JLF	5/8/2009
Current Status							
Currently producing from Blinbry and Tubb perforations.							

Detailed Summaries

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
9/1/1957	12.0000	0	1,527	
9/1/1957	7.8750	1,627	7,125	

Tubular Summary

Date	Description	OD (in)	WT (lb/ft)	Grade	Coupling	Top (KB ft)	Bottom (KB ft)	Comments
9/1/1957	Surface Casing	8.6250	32.00			0	1,527	
9/1/1957	Production Casing	6.6000				0	7,125	15.5117#

Casing Cement Summary

Date	No. Sk	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Cement Description	Comments
9/1/1957	698	12.0000	8.6250	0	1,527	Circ to surface	
9/1/1957	625	7.8750	6.6000	3,160	7,125	TOC by TS	

Tool/Problems Summary

Date	Tool Type	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Description	Comments
4/18/2007	CIBP	6.6000	0.0000	8,850			

Cement Plug Summary

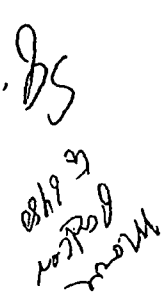
Date	No. Sk	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
9/1/1957	0	6.6000	7,084	7,125	Cmt in shoe fl

Perf Summary

Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing	Perf Comments	Interval Comments
10/18/1957	Open	Drinkard	6,888	6,882			0 D1		
10/18/1957	Open	Drinkard	6,891	6,895			0 D1		
10/18/1957	Open	Drinkard	7,003	7,009			0 D1		
6/23/1962	Open	Drinkard	7,021	7,025			0 D2		
8/23/1982	Open	Drinkard	7,028	7,028			0 D2		
8/5/1978	Squeezed	Tubb	6,725	6,800			0 T1		10 holes
3/10/2005	Open	Blinbry	6,948	8,055	4	440	0 B1		188 holes
4/18/2007	Open	Tubb	6,517	6,521	2	10	120 T2		
4/18/2007	Open	Tubb	6,818	6,822	2	10	120 T2		
4/18/2007	Open	Tubb	6,858	6,860	2	10	120 T2		
4/18/2007	Open	Tubb	6,733	6,737	2	10	120 T2		
4/18/2007	Open	Tubb	6,768	6,762	2	10	120 T2		

Completion History Summary

Date	Comments
9/1/1957	Spud well
10/18/1957	Complete well in Drinkard (D1) perforations.
6/23/1962	Complete well in Drinkard (D2) perforations. Produced these perforations under a packer, isolating the D1 perforations.
8/5/1978	Set CIBP at 6870' and perforate Tubb (T1) from 6728-6800' with 10 holes.
1/6/1981	Drill out CIBP at 6870' and clean out to 7040'
3/15/2005	Set RBP at 6635' and cap w/ 2 ex sand. Perforate Blinbry (B1) perforations and produce from B1 perforations.
4/18/2007	Put RBP at 6635' and run CNL and CIL from 6500-6950'. Set CIBP at 6950' and cap w/ 2 ex cement. Perforate Tubb (T2) parts from 6517-6762' with 45 holes.

[illegible]

Last Updated:

5/6/2009 5:06:28 PMPROPOSED COMPLETION

Field Name	Lease Name	Well No.	County	State	API	GL (ft)	KB (ft)
House	Blankenship	2	Las	New Mexico	30-025-07787	3557	2568
Sec.	Twp/Blk	Rng/Swy	Footage	Spud Date	Comp. Date	Prepared By	Last Updated
L-12	20S	38E	2079 FSL & 555' PVL from Section	8/1/1957	10/18/1957	JLF	8/6/2009
Current Status							
Currently producing from Blinbery and Tubb perforations.							

Detailed Summaries

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
8/1/1957	12.0000	0	1,527	
9/1/1957	7.8750	1,527	7,125	

Tubular Summary

Date	Description	OD (in)	WT (lb/ft)	Grade	Coupling	Top (KB ft)	Bottom (KB ft)	Comments
	Tubing	2.8750	8.50	J55	EUE	0	5,900	
9/1/1957	Surface Casing	8.6250	32.00			0	1,527	
8/1/1957	Production Casing	5.5000				0	7,125	18.5/17#

Casing Cement Summary

Date	No. Sk	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Cement Description	Comments
8/1/1957	888	12.0000	8.6250	0	1,527	Cm to surface	
8/1/1957	625	7.8750	5.5000	3,160	7,125	TOC by TS	

Tools/Problems Summary

Date	Tool Type	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Description	Comments
	PR	5.5000	2.8750	5,900			
4/18/2007	CIBP	5.5000	0.0000		6,950		

Cement Plug Summary

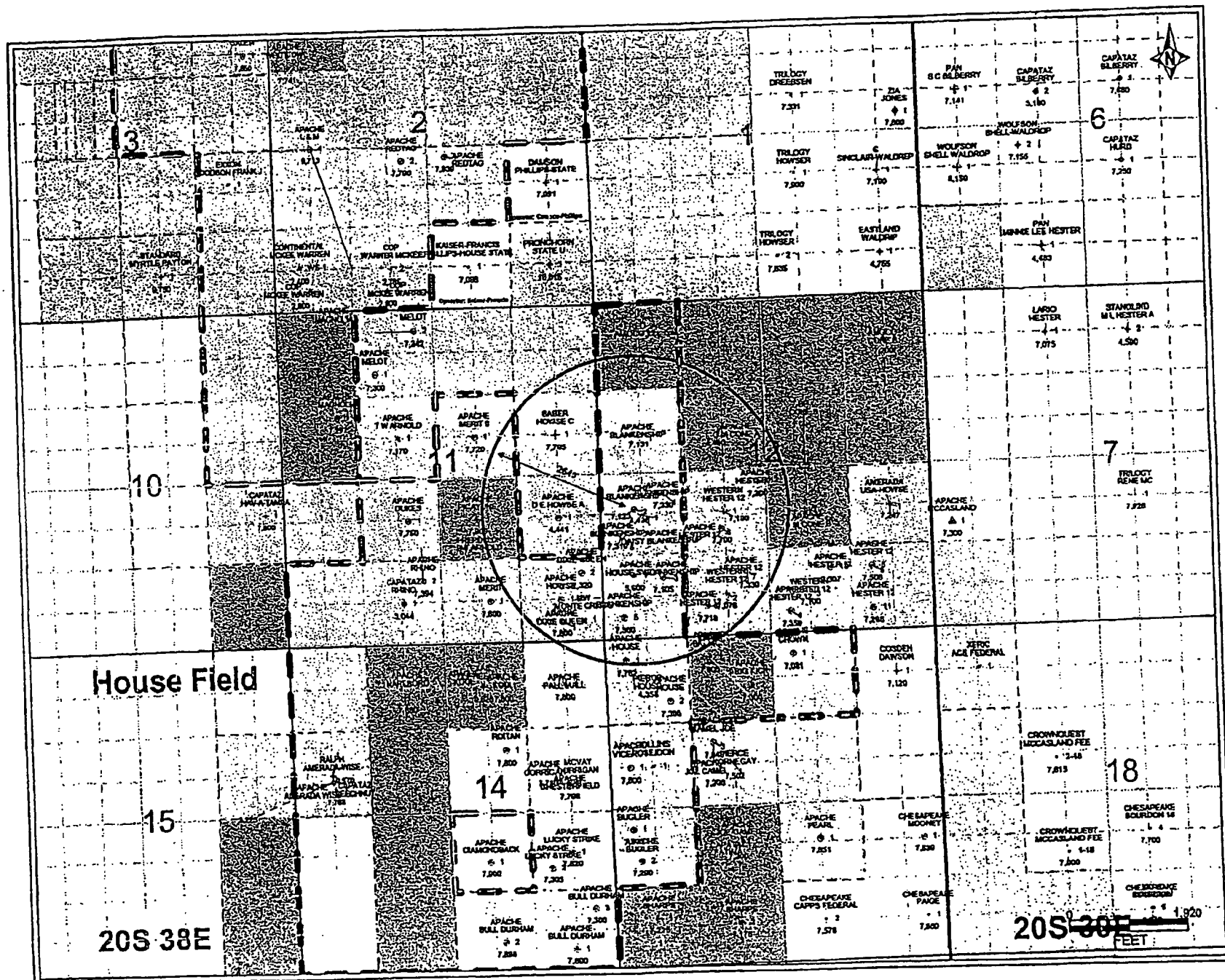
Date	No. Sk	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
9/1/1957	0	5.5000	7,084	7,125	Cm in shoe ft

Perf Summary

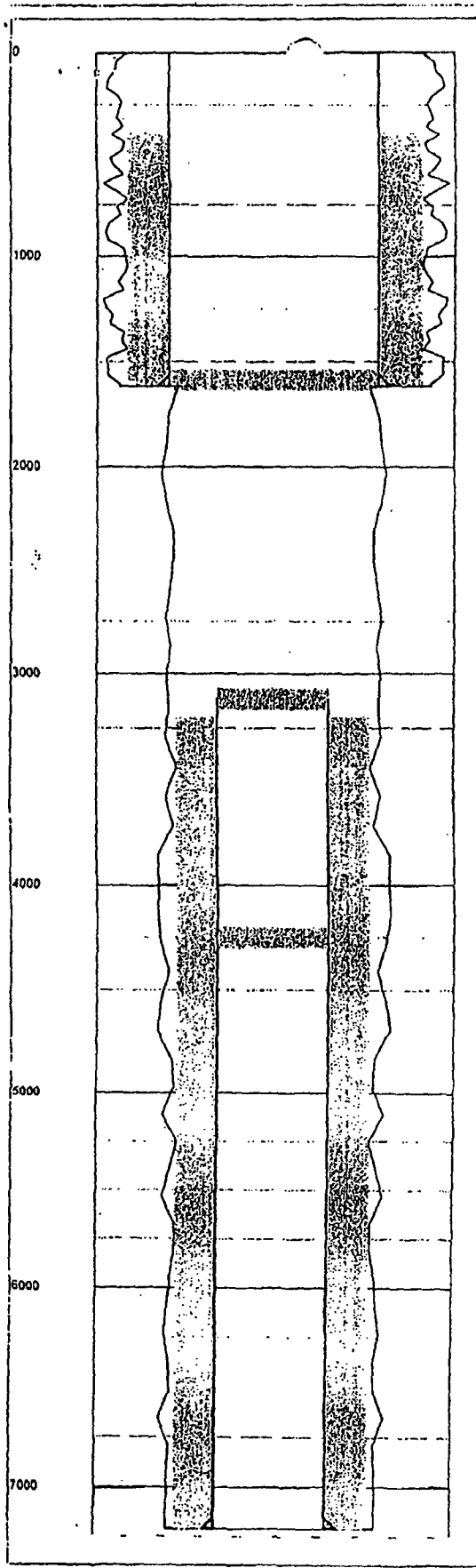
Date	Perf Status	Formation	Top (KB ft)	Bottom (KB ft)	SPF	Shots	Phasing	Perf Comments	Interval Comments
10/18/1957	Open	Drinkard	6,968	6,982			0D1		
10/18/1957	Open	Drinkard	6,991	6,995			0D1		
10/18/1957	Open	Drinkard	7,003	7,009			0D1		
8/23/1962	Open	Drinkard	7,021	7,025			0D2		
8/23/1962	Open	Drinkard	7,028	7,028			0D2		
9/5/1979	Squeezed	Tubb	6,725	6,800			0T1		10 holes
3/10/2005	Open	Blinbery	5,946	6,055	4	440	0B1		198 holes
4/18/2007	Open	Tubb	6,517	6,521	2	10	120T2		
4/18/2007	Open	Tubb	6,619	6,622	2	10	120T2		
4/18/2007	Open	Tubb	6,658	6,660	2	10	120T2		
4/18/2007	Open	Tubb	6,733	6,737	2	10	120T2		
4/18/2007	Open	Tubb	6,758	6,762	2	10	120T2		

Completion History Summary

Date	Comments
8/1/1957	Spud well
10/18/1957	Complete well in Drinkard (D1) perforations.
8/23/1962	Complete well in Drinkard (D2) perforations. Produced these perforations under a packer, isolating the D1 perforations.
9/5/1979	Set CIBP at 6870' and perforate Tubb (T1) from 6725-6800' with 10 holes.
1/9/1981	Drill out CIBP at 6870' and clean out to 7040'
3/15/2005	Set R&P at 6635' and cap w/ 2' sand. Perforate Blinbery (B1) perforations and produce from B1 perforations.
4/18/2007	Pull R&P at 6635' and run CNL and CIL from 5500-6950'. Set CIBP at 6950' and cap w/ 2' sand cement. Perforate Tubb (T2) perforations from 6517-6762' with 45 holes.



REPLY: 4/15/2010 4:00PM ET



CURRENT COMPLETION

Last Updated: 5/27/2009 2:25:17 PM

Field Name		Lease Name		Well No.	
House		Amoco 12		1	
County	State	API	GL (ft)	KB (ft)	
Lea	New Mexico	30-025-29101	0	0	
Sec.	Twp/Blk	Rng/Svy	Footage		
D-12	20S	38E	680' FNL & 680' FWL from Section		
Spud Date	Comp. Date	Prepared By	Last Updated		
		JLF	5/27/2009		
Current Status					
Well is P&A'd					

Hole Summary				
Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	12.2500	0	1,612	
	7.8750	1,612	7,210	

Tubular Summary						
Date	Description	OD (in)	WT (lb/ft)	Grade	Top (KB ft)	Bottom (KB ft)
	Surface Casing	8.6250			0	1,612
	Production Casing	4.5000			3,115	7,210

Casing Cement Summary					
Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
	500	12.2500	8.6250	398	1,612
	1500	7.8750	4.5000	3,200	7,210

Tools/Problems Summary				
Cement Plug Summary				
Date	No. Sx	OD (in)	Top (KB ft)	Bottom (KB ft)
	35	8.6250	1,534	1,634
	25	4.5000	3,065	3,165
	25	4.5000	4,200	4,300

Perf Summary	
Completion History Summary	
Date	Comments
8/30/1985	Well P&A'd

Last Updated:

5/27/2009 2:25:17 PM CURRENT COMPLETION

Field Name	Lease Name	Well No.	County	State	API	GL (ft)	KB (ft)
House	Amoco 12	1	Lea	New Mexico	30-025-29101	0	0
Sec.	Twp/Bik	Rng/Svy	Footage	Spud Date	Comp. Date	Prepared By	Last Updated
O-12	20S	38E	660' FNL & 660' FWL from Section			JLF	5/27/2009
Current Status							
Well is P&A'd							

Detailed Summaries

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	12.2500	0	1,612	
	7.8750	1,612	7,210	

Tubular Summary

Date	Description	OD (in)	WT (lb/ft)	Grade	Coupling	Top (KB ft)	Bottom (KB ft)	Comments
	Surface Casing	8.6250				0	1,612	
	Production Casing	4.5000				3,115	7,210	

Casing Cement Summary

Date	No. Sk	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Cement Description	Comments
	500	12.2500	8.6250	398	1,612		TOC calculated
	1500	7.8750	4.5000	3,200	7,210		TOC calculated

Tools/Problems Summary

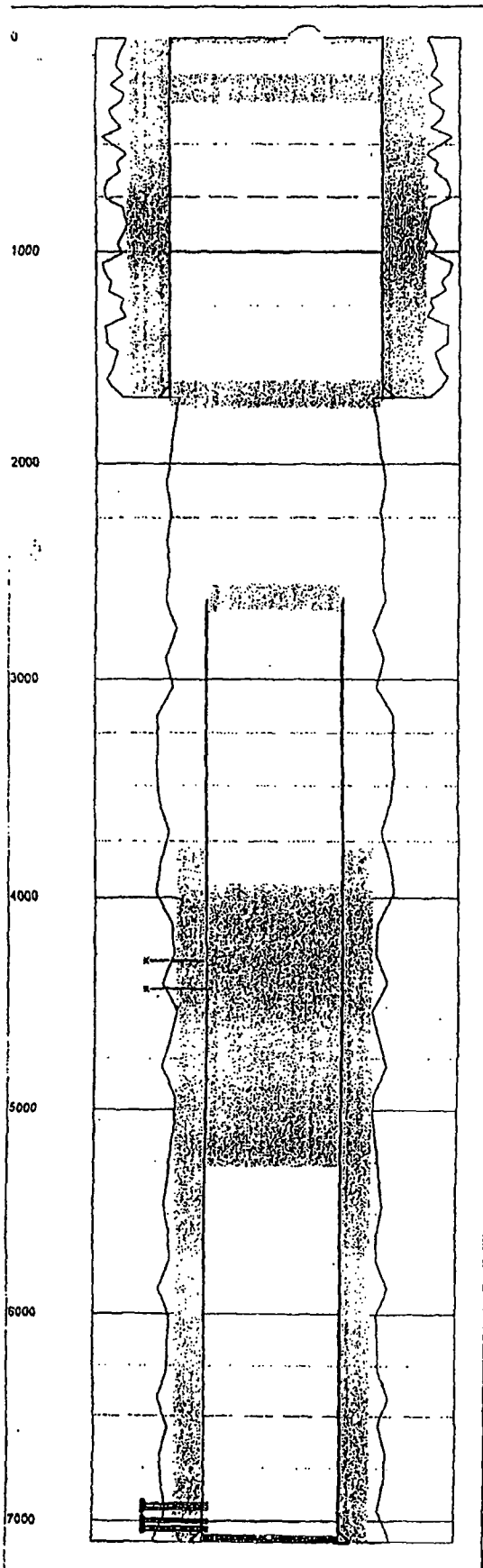
Cement Plug Summary

Date	No. Sk	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	35	8.6250	1,534	1,634	
	25	4.5000	3,065	3,165	
	75	4.5000	4,200	4,300	

Perf Summary

Completion History Summary

Date	Comments
6/30/1985	Well P&A'd



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		3558		3566	
Sec.		Twp/Blk		Rng/Svy		Footage			
12		20S		36E		680' FSL & 1980' FWL from Section			
Spud Date			Comp. Date			Prepared By		Last Updated	
8/27/1958			10/4/1958			JLF		2/28/2009	
Current Status									
Plugged and abandoned.									

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
12.2500		0	1,885	
7.8750		1,885	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	1,885
	Production Casing	5.5000			2,930	7,099

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
	550	12.2500	8.6250	0	1,885
	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	6.5000	0.0000		7,085

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	6.5000	7,085	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	4,408	4,418			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

Last Updated:

2/26/2009 2:26:46 PM CURRENT COMPLETION

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	560' 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. Sk	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)	Cement Description	Comments
	550	12.2500	8.6250	0	1,685		Circulate cement
	650	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			

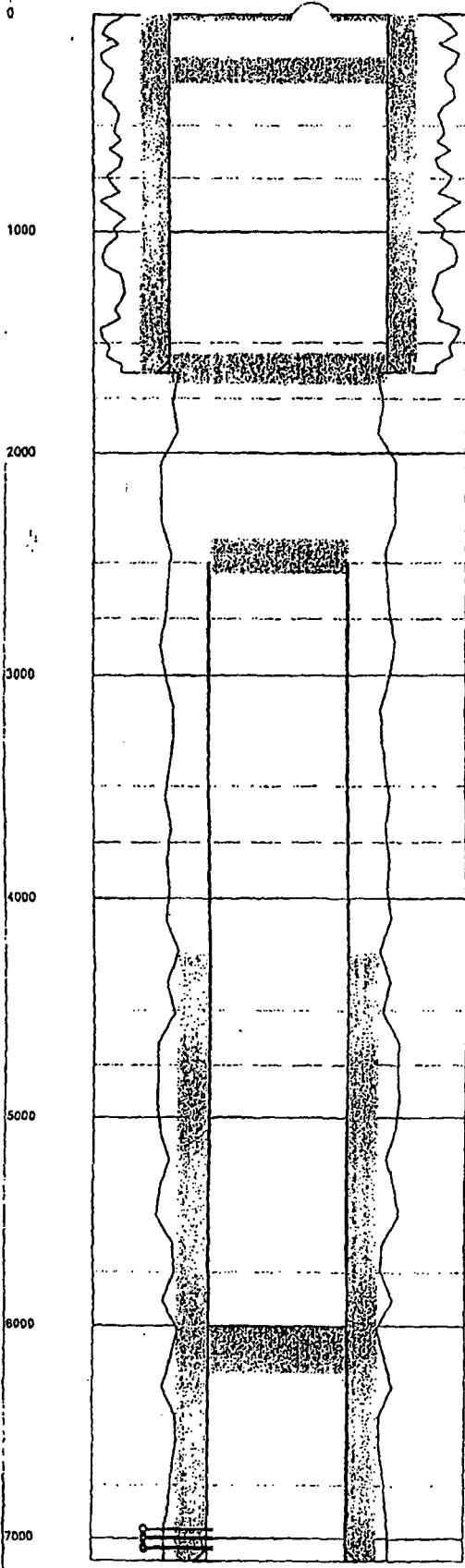
Cement Plug Summary

Date	No. Sk	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
	10	8.6250	0	25	
	40	8.6250	180	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	7,085	7,099	Cmt in shoe ft

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



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)	
Lee	New Mexico	30-025-07773	0	3568	
Sec.	Twp/Blk	Rng/Svy	Footage		
12	20S	38E	860' FSL & 1980' FWL from Section		
Spud Date	Comp. Date	Prepared By	Last Updated		
6/30/1958	10/2/1958	JLF	2/26/2009		
Current Status					
Plugged and abandoned.					

Hole Summary

Date	OD (in)	Top (KB ft)	Bottom (KB ft)	Comments
12.2500		0	1,833	
7.8750		1,833	7,108	

Tubular Summary

Date	Description	OD (in)	WT (lb/m)	Grade	Top (KB ft)	Bottom (KB ft)
	Surface Casing	8.6250	32.00	J55	0	1,833
	Production Casing	6.5000			2,500	7,108

Casing Cement Summary

Date	No. Sx	OD (in)	ID (in)	Top (KB ft)	Bottom (KB ft)
	850	11.0000	8.6250	0	1,833
	550	7.8750	5.5000	4,250	7,108

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
	60	8.6250	1,883	1,684
	50	8.6250	1,683	1,683
	40	5.5000	2,390	2,930
	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	6,983			0
	Open	Drinkard	6,888	7,008	4	84	0
	Open	Drinkard	7,036	7,058	4	84	0

Completion History Summary

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	3588
Sec.	Twp/Blk	Rng/Svy	Footage	Spud Date	Comp. Date	Prepared By	Last Updated
12	20S	38E	860' 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	7,108	

Tubular Summary

Date	Description	OD (in)	WT (lb/ft)	Grade	Coupling	Top (KB ft)	Bottom (KB ft)	Comments
	Surface Casing	8.6250	32.00	J65		0	1,633	
	Production Casing	6.5000				2,500	7,108	15.5 & 17#. Pulled 2600' 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
	850	11.0000	8.6250	0	1,633		Circulate cement
	550	7.8750	5.5000	4,260	7,108		

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	1,884	
	50	8.6250	1,883	1,884	
	60	8.6250	1,883	1,883	No fill tagged
	40	5.5000	2,380	2,550	
	25	5.5000	8,002	8,223	

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	7,058	4	84	0		

Completion History Summary

ITEM VII OF NEW MEXICO OCD FORM C-108
DATA ON PROPOSED OPERATIONS
BLANKENSHIP #2

- 1) Proposed average initial injection rate is 500 bwpd.
Maximum injection rate should not exceed 5,000 bwpd.
- 2) The injection system will be operated as a closed system.
- 3) Proposed maximum pressure is 1189 psi (5946' * 0.2 psi/ft) but will not exceed the pressure limitations ordered by the Division.
- 4) Source water will come from the Blinebry, Tubb, Drinkard.
- 5) Not Applicable.

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

The formations being targeted for water injection are the Blinberry, ^{Paddock} Tubb and Drinkard at depths ranging from approximately 5900' to 7100'. These formations are Leonardian in age and are a sequence of marine carbonates which have undergone diagenesis, predominantly in the form of dolomitization. A five percent porosity cutoff is used to determine "pay" since porosities less than this are considered non-productive at the existing and proposed reservoir pressures and fluid regimes. Net pay isopach maps show the areal extent of the targeted reservoirs. The vertical extent of the reservoir is limited both top and bottom by impermeable shales and carbonates. All injected fluids should remain in the reservoir with the exception of cycling to the surface through well bores.

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.

**Office of the Chief Engineer
2024 Report and Download**

205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
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FOR SURFACE DATA SHEET: 10/20/2024

Name of the vessel		Date		Time		Location		Remarks	
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

File No.	Case No.	Case Name	Birth Date	Death Date	Age at Death	Sex	Marital Status	Occupation	Education	Religion	Place of Birth	Place of Death	Cause of Death	Disposition of Body	Disposition of Soul
100	100	John Doe	1/1/1900	12/31/1980	80	M	Married	Teacher	High School	Protestant	New York	New York	Heart Disease	Buried	Heaven
101	101	Jane Smith	2/15/1905	11/20/1985	80	F	Married	Homemaker	High School	Catholic	Illinois	Illinois	Cancer	Buried	Heaven
102	102	Robert Johnson	3/10/1910	11/27/1986	76	M	Married	Engineer	College	Methodist	California	California	Stroke	Buried	Heaven
103	103	Mary White	4/20/1915	11/30/1988	73	F	Married	Nurse	College	Baptist	Ohio	Ohio	Alzheimer's	Buried	Heaven
104	104	William Brown	5/1/1920	12/10/1990	70	M	Married	Farmer	High School	Presbyterian	Wisconsin	Wisconsin	Heart Failure	Buried	Heaven
105	105	Elizabeth Green	6/1/1925	12/15/1992	67	F	Married	Librarian	College	Jewish	New Jersey	New Jersey	Cancer	Buried	Heaven
106	106	Charles Black	7/1/1930	12/20/1995	65	M	Married	Doctor	College	Anglican	Massachusetts	Massachusetts	Heart Disease	Buried	Heaven
107	107	Sarah Davis	8/1/1935	12/25/1998	63	F	Married	Teacher	College	Protestant	Michigan	Michigan	Stroke	Buried	Heaven
108	108	Thomas Miller	9/1/1940	12/30/2000	60	M	Married	Engineer	College	Catholic	Florida	Florida	Cancer	Buried	Heaven
109	109	Patricia Wilson	10/1/1945	12/31/2002	57	F	Married	Nurse	College	Methodist	Georgia	Georgia	Heart Disease	Buried	Heaven
110	110	James Taylor	11/1/1950	12/31/2005	55	M	Married	Teacher	College	Baptist	Alabama	Alabama	Stroke	Buried	Heaven
111	111	Karen Anderson	12/1/1955	12/31/2008	53	F	Married	Homemaker	High School	Protestant	South Carolina	South Carolina	Cancer	Buried	Heaven
112	112	Michael King	1/1/1960	12/31/2010	50	M	Married	Engineer	College	Catholic	Arizona	Arizona	Heart Failure	Buried	Heaven
113	113	Linda Scott	2/1/1965	12/31/2012	47	F	Married	Nurse	College	Methodist	Idaho	Idaho	Stroke	Buried	Heaven
114	114	Christopher Lee	3/1/1970	12/31/2015	45	M	Married	Teacher	College	Baptist	Montana	Montana	Cancer	Buried	Heaven
115	115	Amanda Hall	4/1/1975	12/31/2018	43	F	Married	Homemaker	High School	Protestant	Wyoming	Wyoming	Heart Disease	Buried	Heaven
116	116	David Young	5/1/1980	12/31/2020	40	M	Married	Engineer	College	Catholic	Utah	Utah	Stroke	Buried	Heaven
117	117	Michelle Adams	6/1/1985	12/31/2022	37	F	Married	Nurse	College	Methodist	Nebraska	Nebraska	Cancer	Buried	Heaven
118	118	Kevin Baker	7/1/1990	12/31/2023	33	M	Married	Teacher	College	Baptist	Delaware	Delaware	Heart Failure	Buried	Heaven
119	119	Stephanie Clark	8/1/1995	12/31/2024	29	F	Married	Homemaker	High School	Protestant	North Dakota	North Dakota	Stroke	Buried	Heaven
120	120	Brandon Lewis	9/1/2000	12/31/2025	25	M	Married	Engineer	College	Catholic	South Dakota	South Dakota	Cancer	Buried	Heaven

ITEMS IX THROUGH XII OF NEW MEXICO OCD FORM C-108
BLANKENSHIP #2

IX This well will be acid stimulated as needed to eliminate near wellbore skin damage.

X Original logs and test data were filed with the NMOCD upon original completion of the well.

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 78372-0740
(808) 228-8121
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 #:	372540
Lease/Platform:	GILBERT UNIT	Analysis ID #:	86969
Entity (or well #):	HORSE PEN	Analysis Cost:	\$80.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary		Analysis of Sample 372540 @ 75 °F					
Sampling Date:	10/21/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	10/30/08	Chloride:	336.0	9.48	Sodium:	216.0	9.4
Analyst:	KIMBERLY POOLE	Bicarbonate:	220.0	2.61	Magnesium:	41.0	3.37
		Carbonate:	0.0	0.	Calcium:	164.0	8.18
TDS (mg/l or g/m3):	1378.6	Sulfate:	391.0	8.14	Strontium:	2.0	0.05
Density (g/cm3, tonne/m3):	1.001	Phosphate:			Barium:	0.1	0.
Anion/Cation Ratio:	0.9999998	Borate:			Iron:	0.8	0.03
		Silicate:			Potassium:	7.5	0.18
Carbon Dioxide:	0 PPM	Hydrogen Sulfide:		0 PPM	Aluminum:		
Oxygen:		pH at time of sampling:		7.21	Chromium:		
Comments:		pH at time of analysis:			Copper:		
RESISTIVITY 9 OHM-M @ 75°F		pH used in Calculation:		7.21	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 ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.10	2.10	-0.81	0.00	-0.98	0.00	-1.13	0.00	0.69	0.00	0.19
100	0	0.23	5.80	-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

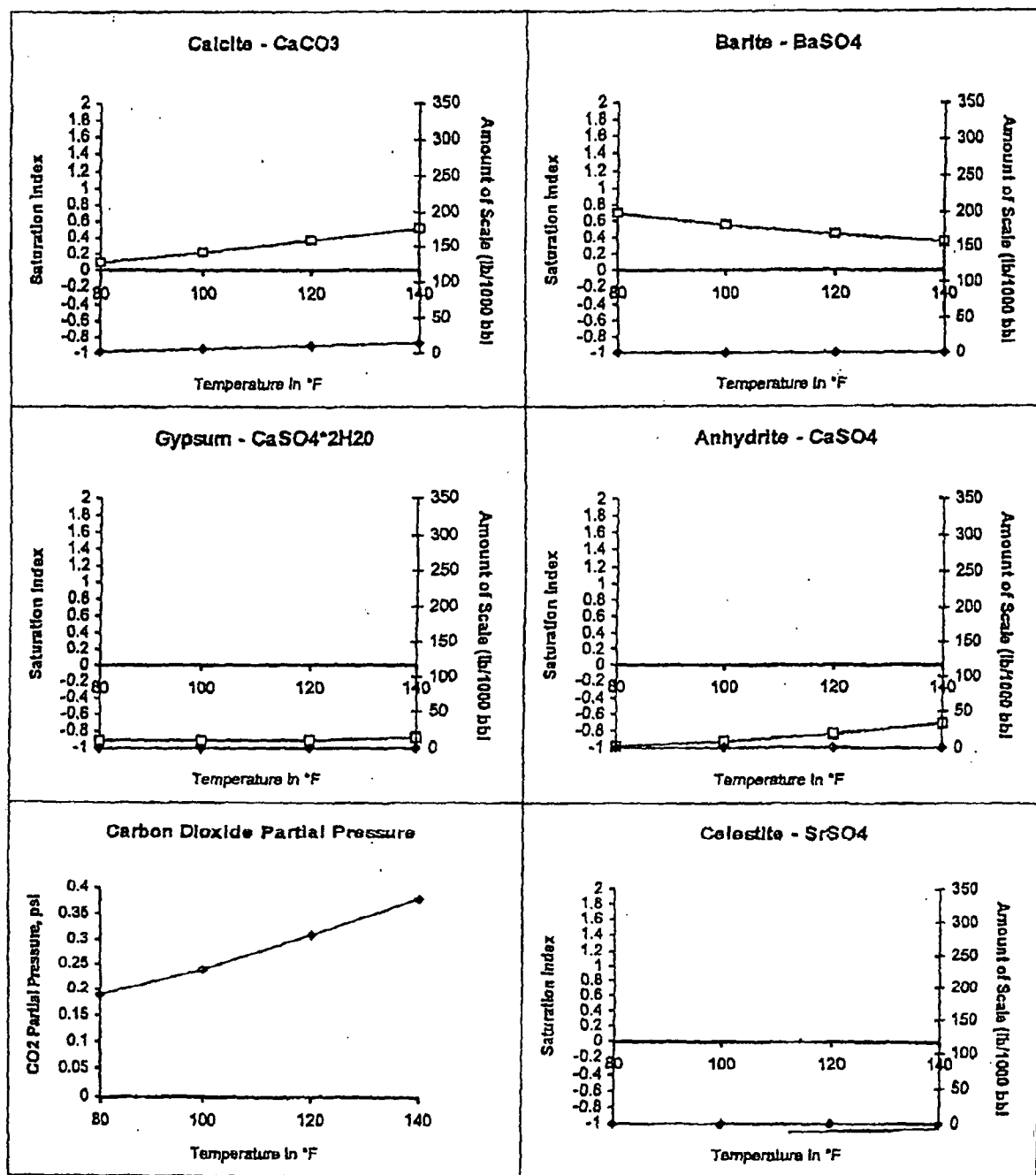
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

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



North Permian Basin Region
P.O. Box 740
Sundown, TX 78372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 485-7240

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		Analysis of Sample 372539 @ 75 °F					
Sampling Date:	10/21/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	10/30/08	Chloride:	415.0	11.71	Sodium:	331.2	14.41
Analyst:	KIMBERLY POOLE	Bicarbonate:	305.0	5.	Magnesium:	41.0	3.37
TDS (mg/l or g/m3):	1378.5	Carbonate:	0.0	0.	Calcium:	174.0	8.68
Density (g/cm3, tonne/m3):	1.002	Sulfate:	491.0	10.22	Strontium:	2.0	0.05
Anion/Cation Ratio:	0.9999997	Phosphate:			Barium:	0.1	0.
		Borate:			Iron:	0.2	0.01
		Silicate:			Potassium:	16.0	0.41
Carbon Dioxide:	0 PPM	Hydrogen Sulfide:		0 PPM	Aluminum:		
Oxygen:		pH at time of sampling:		7.03	Chromium:		
Comments:		pH at time of analysis:			Copper:		
RESISTIVITY 7.5 OHM-M @ 75°F		pH used in Calculation:		7.03	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 ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.10	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	0.64	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 372538 @ 75 °F for APACHE CORPORATION, 10/30/08

