

BEFORE AN EXAMINER OF THE OIL CONSERVATION DIVISION

EXHIBIT NO. 10
CASE NO. : 12785
Submitted by: Apache Corporation
Hearing Date: January 10, 2002

AREA OF REVIEW / WELL DATA

WELL NAME	API NO.	S / T / R	LOCATION	WELL TYPE	COMP DATE	TD	SURFACE CASING HOLE CSG	SET CMT	INTERMEDIATE CASING HOLE CSG	SET CMT	PRODUCTION CASING HOLE CSG	SET CMT	TOC	HOLE LINER	LINER DEPTH	CMT	TOC
Grizzell # 1	30-025-10111	8/22S/37E	1980 FSL-1980 FEL	O	02/03/38	3718 11	8-5/8	1128	500								
Grizzell # 2	30-025-10107	8/22S/37E	1980 FSL- 660 FEL	O	03/03/38	3712 12-1/4	10-3/4	1149	500								
Grizzell # 3	30-025-10109	8/22S/37E	660 FSL- 660 FEL	O	11/09/38	3709 11	8-5/8	1182	500								
Grizzell # 4	30-025-10112	8/22S/37E	660 FSL-1980 FEL	O	12/12/38	3712 11	8-5/8	1160	500								
Grizzell # 5	30-025-10113	8/22S/37E	2080 FSL- 550 FEL	O	12/09/47	5244 11	8-5/8	1163	600								
Grizzell # 6	30-025-10114	8/22S/37E	2200 FSL- 420 FEL	O	08/01/52	6541 17-1/4	13-3/8	255	300 11	8-5/8	2798	1300					
Grizzell # 7	30-025-10115	8/22S/37E	2310 FSL-1650 FEL	G	09/04/52	6537 17-1/4	13-3/8	214	350 11	8-5/8	2790	1500					
Grizzell # 8	30-025-10116	8/22S/37E	990 FSL- 330 FEL	O	07/27/63	6575 12-1/4	8-5/8	275	250								
Grizzell # 9	30-025-20562	8/22S/37E	810 FSL-1980 FEL	O	04/28/80	7508 14-3/4	11-3/4	1200	800 11	8-5/8	3910	1600					
Grizzell # 10	30-025-26723	8/22S/37E	1940 FSL- 860 FEL	O	06/29/01	4300 12-1/4	8-5/8	1160	460								
Grizzell # 12	30-025-35269	8/22S/37E	660 FSL- 860 FEL	G	11/09/37	6580 13	10-3/4	293	200								
Grizzell B # 1	30-025-10110	8/22S/37E	1980 FNL-1980 FEL	O	11/20/79	7500 17-1/2	13-3/8	1182	700 12-1/4	9-5/8	3900	1485	8-3/4	7	7500	1250	1840 (B)
Grizzell B # 2	30-025-10101	8/22S/37E	1980 FNL- 660 FEL	P&A	12/16/37	5260 13	10-3/4	281	200								
Grizzell B # 3	30-025-26457	8/22S/37E	1830 FNL- 510 FEL	O	06/20/80	7500 17-1/2	13-3/8	1163	700 12-1/4	9-5/8	3910	2200					
Grizzell B # 4	30-025-26713	8/22S/37E	1838 FNL-1750 FEL	O	03/29/38	6550 12-1/4	10-3/4	341	300								
CP Falby B # 1	30-025-10103	8/22S/37E	1980 FSL-1980 FNL	O	06/19/39	3720 12-1/4	10-3/4	339	200								
South Penrose Skelly Unit # 181	30-025-10119	8/22S/37E	660 FSL-1980 FNL	P&A	07/08/70	7424 11	8-5/8	1193	365								
Shell G # 1	30-025-23287	8/22S/37E	330 FSL- 330 FEL	D&A	03/17/38	3725 12-1/4	10-3/4	297	225 9-1/4	7-5/8	1195	425	6-3/4	5-1/2	3417	425	0 (C)
Elliott B-9 # 1	30-025-10121	9/22S/37E	1980 FNL- 660 FNL	O	03/15/46	5245 17-1/2	13-3/8	153	150 12-1/4	9-5/8	2775	1400	8-3/4	7	5202	400	2392 (C)
Penrose # 2	30-025-10146	9/22S/37E	2086 FNL- 766 FNL	O	01/20/47	8120 17-1/2	13-3/8	153	165 12-1/4	9-5/8	2785	1400	8-3/4	7	8089	800	2469 (C)
Penrose # 3	30-025-10147	9/22S/37E	1874 FNL- 766 FNL	O	07/02/53	6510 12-1/4	10-3/4	165	180 9-1/4	7-5/8	2780	800	6-3/4	5-1/2	6465	300	2672 (C)
Penrose # 4	30-025-10148	9/22S/37E	2310 FNL- 330 FNL	O	10/26/94	6200 12-1/4	8-5/8	1179	640								
Penrose # 5	30-025-32510	9/22S/37E	2175 FNL- 660 FNL	O	03/26/71	7335 11-1/4	8-5/8	1162	325								
Greenwood # 1	30-025-23691	9/22S/37E	330 FSL- 500 FNL	D&A	03/31/38	3714 12-1/4	9-5/8	339	125								
Greenwood # 2	30-025-10123	9/22S/37E	1980 FSL- 660 FNL	O	11/02/38	3705 13-3/8	9-5/8	440	125								
Greenwood # 3	30-025-10124	9/22S/37E	660 FSL- 660 FNL	P&A	11/20/47	8172 12-1/4	10-3/4	319	225 9-1/4	7-5/8	2805	1275	6-3/4	5-1/2	8133	150	6236 (C)
JL Greenwood # 13	30-025-10134	9/22S/37E	1980 FSL- 990 FNL	O	12/19/47	5200 17-1/2	13-3/8	329	300 9-1/4	7-5/8	2799	850	6-3/4	5-1/2	5199	350	774 (C)
JL Greenwood # 14	30-025-10135	9/22S/37E	1905 FSL- 990 FNL	O	01/17/53	6500 12-1/4	10-3/4	329	300 9-1/4	7-5/8	3178	1800	6-3/4	5-1/2	6499	200	3970 (C)
JL Greenwood # 15	30-025-10136	9/22S/37E	760 FSL- 660 FNL	O	06/23/38	3694 9-7/8	7-5/8	289	150								
Cole State # 2	30-025-10322	16/22S/37E	660 FNL- 600 FNL	P&A	11/23/74	6650 11	8-5/8	1150	600								
Elliott B-17 # 2	30-025-24864	17/22S/37E	330 FNL- 330 FEL	O	12/18/62	6577 12-1/4	10-3/4	330	300 9-1/4	7-5/8	3623	2328	6-3/4	5-1/2	3530	425	0 (C)
Elliott B-17 # 3	30-025-10330	17/22S/37E	330 FNL-2310 FNL	O	08/05/38	3700 12-1/4	10-3/4	282	225 9-1/4	7-5/8	1162	300	6-3/4	5-1/2	3490	150	2576 (C)
Elliott B # 6	30-025-10333	17/22S/37E	660 FNL- 660 FEL	O	11/07/38	3710 11	8-5/8	1139	500								
Fisico State B # 1	30-025-10341	17/22S/37E	660 FNL-1980 FEL	O	03/11/76	6660 11	8-5/8	1175	450								
State PA # 3	30-025-25209	17/22S/37E	660 FNL-2100 FEL	O													

Top of Cement Legend:

B = Cement Bond Log

C = Calculated

Surface = Circulated

T = Temperature Survey

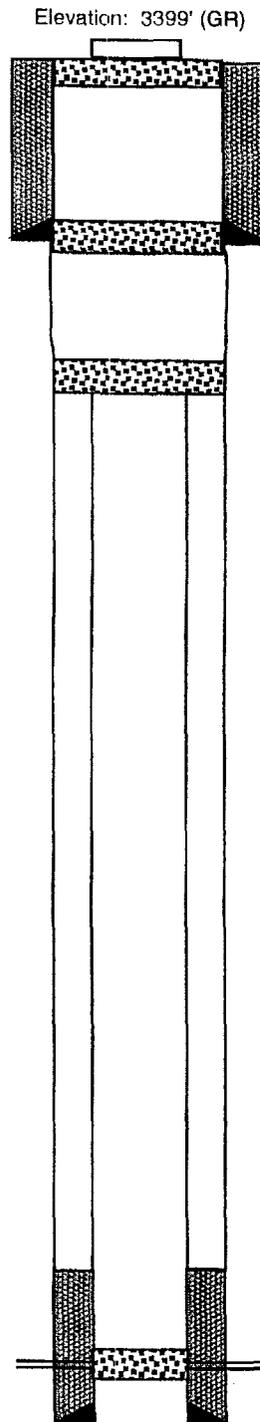
Well: Shell G # 1
Field: Undesignated
Location: 330' FSL & 330' FEL
Unit P, Sec. 8, T22S, R37E
Lea County, New Mexico
API #: 30-025-23287

Current Status: D&A (7/70)

Elevation: 3399' (GR)
Install P&A marker
Surface Plug - 10 sx

Cmt Plug @ 1200' w/ 25 sx

Pulled 2260' - 4-1/2" Casing
Cmt Plug - Casing Stub @ 2260'
w/ 25 sx



11" Hole
8-5/8" 32# J-55 CSA 1193'
Cement w / 385 sx
Circulated to Surface

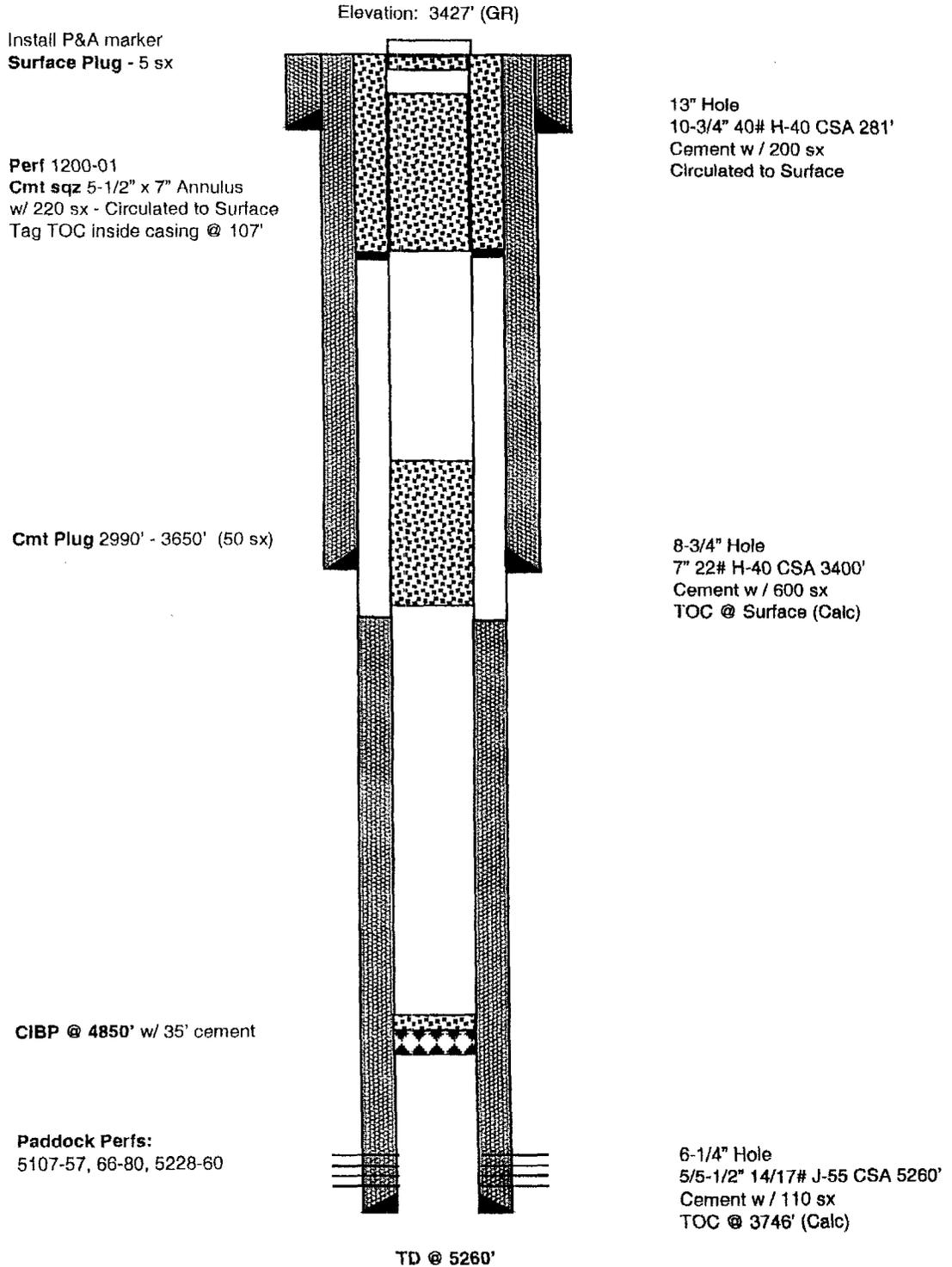
Perforations:
7319-27
Cement Plug - Across Perfs
w/ 25 sx

7-7/8" Hole
4-1/2" 9.5/11.6# J-55 CSA 7420'
Cement w / 240 sx
TOC @ 6307' (Calc)

TD @ 7420'

Well: Grizzell B # 2
 Field: Paddock
 Location: 1980' FNL & 660' FEL
 Unit H, Sec. 8, T22S, R37E
 Lea County, New Mexico
 API #: 30-025-10101

Current Status: P&A (2/89)



Well: So. Penrose Skelly Unit # 181

Field: Penrose Skelly; Grayburg

Current Status: P&A (11/84)

Location: 660' FSL & 1980' FWL
Unit N, Sec. 8, T22S, R37E
Lea County, New Mexico

API #: 30-025-10119

Install P&A marker
Surface Plug - 0' - 50'

Perf 1298 - 1301
Cement Retainer @ 1226'
Cmt sqz behind 5-1/2" w/ 300 sx
TOC @ 60' (Temp Survey)

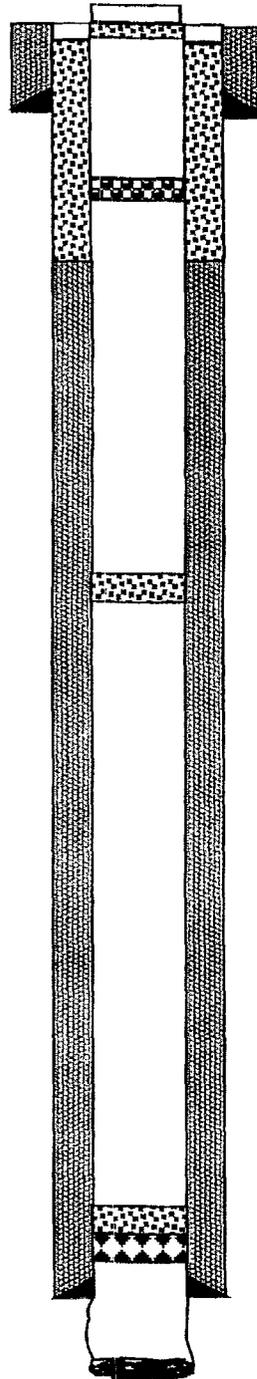
Cmt Plug 2318' - 2418' (12 sx)

CIBP @ 3475' w/ 12 sx cement

Grayburg Open Hole:
3512' - 3681'

Dump 10 sx cement on bottom
PBSD @ 3681'

Elevation: 3418' (GR)



12-1/4" Hole
10-3/4" 32# H-40 CSA 339'
Cement w / 200 sx
Circulated to Surface

7-7/8" Hole
5-1/2" 17# J-55 CSA 3512'
Cement w / 500 sx
TOC @ 1607' (Calc)

TD @ 3720'

Well: Greenwood # 1
 Field: Undesignated
 Location: 330' FSL & 500' FWL
 Unit M, Sec. 9, T22S, R37E
 Lea County, New Mexico
 API #: 30-025-23691

Current Status: D&A (3/71)

Install P&A marker
Surface Plug - 10 sx

Cmt Plug @ 1162' w/ 25 sx

Cmt Plug @ 2400' w/ 25 sx

Cmt Plug @ 5035' w/ 25 sx

Cmt Plug @ 5485' w/ 25 sx

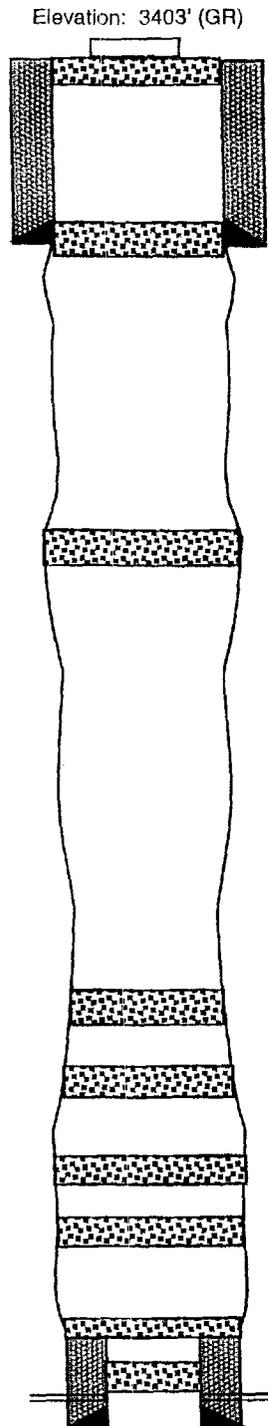
Cmt Plug @ 6030' w/ 25 sx

Cmt Plug @ 6160' w/ 25 sx

Pulled 6875' - 4-1/2" casing
Cmt Plug - Casing Stub @ 6875'
 w/ 25 sx

Cmt Plug @ 7278' w/ 25 sx

Perforations:
 7281-7301



11-1/4" Hole
 8-5/8" 24# J-55 CSA 1162'
 Cement w / 325 sx
 Circulated to Surface

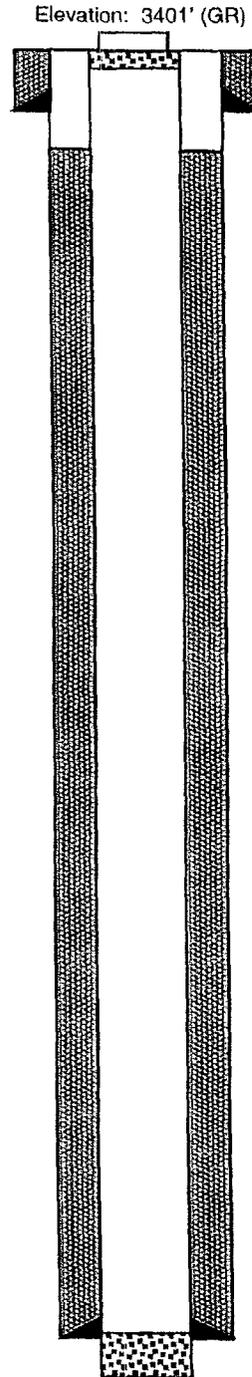
7-7/8" Hole
 4-1/2" 10.5# J-55 CSA 7335'
 Cement w / 75 sx
 TOC @ 6876' (Calc)

TD @ 7335'

Well: Greenwood # 3
Field: Penrose Skelly; Grayburg
Location: 660' FSL & 660' FWL
Unit M, Sec. 9, T22S, R37E
Lea County, New Mexico
API #: 30-025-10124

Current Status: P&A (10/70)

Install P&A Marker
Surface Plug - 0' - 35'
w/ 10 sx



13-3/8" Hole
9-5/8" 36# H-40 CSA 440'
Cement w / 125 sx
Circulated to Surface

Cmt Plug - 3600-3702
w/ 50 sx

Grayburg Open Hole:
3600 - 3705

8-3/4" Hole
7" 24# J-55 CSA 3600'
Cement w / 400 sx
TOC @ 790' (Calculated)

TD @ 3705'

Well: Cole State # 2
Field: Penrose Skelly; Grayburg
Location: 660' FNL & 660' FWL
Unit D, Sec. 16, T22S, R37E
Lea County, New Mexico
API #: 30-025-10322

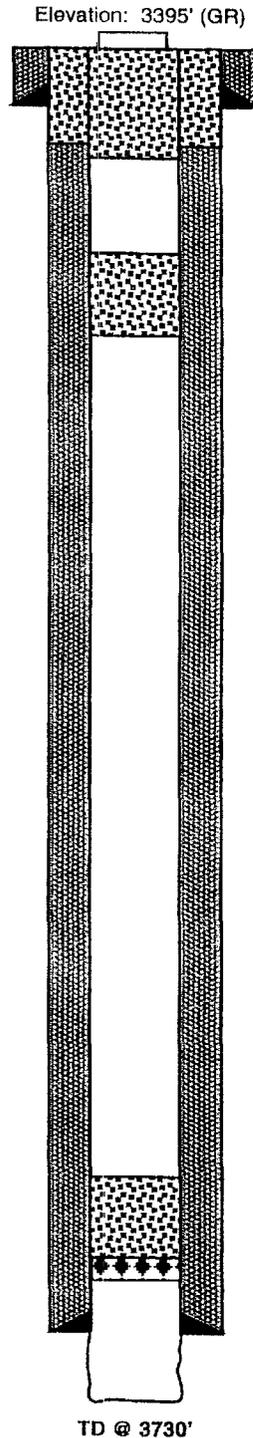
Current Status: P&A (8/98)

Install P&A Marker
Surface Plug - 0' - 411'
w/ 40 sx

Cmt Plug - 994 - 1240
w/ 25 sx

Cmt Plug - 3244-3490
w/ 25 sx
CIBP @ 3490'

Grayburg Open Hole:
3548 - 3730



9-7/8" Hole
7-5/8" 26# H-40 CSA 289'
Cement w / 150 sx
Circulated to Surface

Cmt Squeeze @ 322'
w/ 100 sx

6-3/4" Hole
5-1/2" 15# J-55 CSA 3548'
Cement w / 250 sx
TOC @ 387' (Calculated)

TD @ 3730'

South Permian Basin Region
 10520 West I-20 East
 Odessa, TX 79765
 (915) 498-9191
 Lab Team Leader - Sheila Hernandez
 (915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	APACHE CORPORATION	Sales RDT:	33102
Region:	PERMIAN BASIN	Account Manager:	MIKE EDWARDS (505) 910-9517
Area:	EUNICE, NM	ID #:	22639
Lease/Platform:	GRIZZELL UNIT	Analysis Cost:	\$40.00
Entity (or well #):	12		
Formation:	SAN ANDRES		
Sample Point:	WELLHEAD		

Summary		Analysis of Sample 209886 @ 75 °F					
Sampling Date:	11/15/01	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	11/20/01	Chloride:	4050.0	114.24	Sodium:	2894.3	125.9
Analyst:	JAMES AHRLETT	Bicarbonate:	2405.0	39.42	Magnesium:	112.0	9.21
TDS (mg/l or g/m3):	9975.3	Carbonate:	0.0	0.	Calcium:	262.0	13.07
Density (g/cm3, tonne/m3):	1.008	Sulfate:	20.0	0.42	Strontium:	9.0	0.21
Anion/Cation Ratio:	1.0000001	Phosphate:			Barium:	6.0	0.09
Carbon Dioxide:		Borate:			Iron:	4.0	0.14
Oxygen:		Silicate:			Potassium:	213.0	5.45
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		7.47	Copper:		
		pH used in Calculation:		7.47	Lead:		
					Manganese:		
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO3		Gypsum CaSO4*2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4		CO2 Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
°F	psi											psi
80	0	1.32	171.78	-2.42	0.00	-2.49	0.00	-2.11	0.00	0.82	2.78	0.94
100	0	1.41	181.85	-2.44	0.00	-2.44	0.00	-2.09	0.00	0.67	2.78	1.28
120	0	1.51	191.57	-2.45	0.00	-2.37	0.00	-2.07	0.00	0.55	2.43	1.7
140	0	1.60	199.89	-2.46	0.00	-2.29	0.00	-2.04	0.00	0.45	2.08	2.2

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.

DRINKARD



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONY ANAYA
GOVERNOR

June 21, 1985

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

APPLICATION OF SHELL WESTERN E & P INC.
TO EXPAND ITS WATERFLOOD PROJECT IN THE
PENROSE-SKELLY POOL IN LEA COUNTY,
NEW MEXICO.

ORDER No. WFX-547

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-2794, Shell Western E & P Inc. has made application to the Division on April 30, 1985, for permission to expand its South Penrose Skelly Unit Waterflood Project in the Penrose-Skelly Pool in Lea County, New Mexico.

NOW, on this 13th day of June, 1985, the Division Director finds:

1. That application has been filed in due form.
2. That satisfactory information has been provided that all offset operators have been duly notified of the application.
3. That no objection has been received within the waiting period as prescribed by Rule 701B.
4. That the proposed injection well is eligible for conversion to water injection under the terms of Rule 701.
5. That the proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.
6. That the application should be approved.

IT IS THEREFORE ORDERED:

That the applicant, Shell Western E & P Inc., be and the same is hereby authorized to inject water into the Grayburg formation through plastic-lined tubing set in a packer at approximately 3600 feet in the following described well for purposes of waterflooding to wit:

Shell Western Grizzell No. 11, 1300' FSL and 1139' FEL
Unit P, Sec. 8, T-22-S, R-37-E, Lea County

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus (in each well) shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

That the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 732 psi.

That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Grayburg formation. That such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

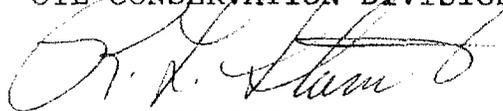
That the operator shall notify the supervisor of the Division's Hobbs District Office before injection is commenced through said perforations.

That the operator shall immediately notify the Supervisor of the Division's Hobbs District Office of the failure of the tubing, casing, or packer in said or the leakage of water from or around said wellbore and shall take such steps as may be timely or necessary to correct such failure or leakage.

That the subject injection well shall be governed by all provisions of Division Order No. R-2794 and Rules 702, 703, 704, 705, and 706 not inconsistent herewith.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



R. L. STAMETS,
Director

S E A L

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



June 5, 1985

P.O. Box 991
Houston, TX 77001

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
ATTN Mr. G. Quintana
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

AUTHORIZATION TO INJECT
SHELL WESTERN - GRIZZELL NO. 11
PENROSE SKELLY GRAYBURG POOL
UNIT LETTER P, 1300' FSL & 1139' FEL
SECTION 8, T22S-R37E, NMPM
LEA COUNTY, NEW MEXICO

Further to our application of April 26, 1985, and confirming our discussion on May 24, 1985, the following information is submitted in support of our request for administrative approval to convert the subject well to water injection service.

NMOCD Order #R-2794 dated October 30, 1964, granted Gulf Oil Exploration and Production Company permission to conduct waterflood operations in the subject pool. Subsequent to the formation of the Gulf operated South Penrose Skelly Unit on July 1, 1965, a water injection pilot project was initiated in June of 1967. Active injection was discontinued in April of 1972.

The subject well was one of two 20-acre infill wells drilled and tested by Gulf in June, 1975, for the purpose of evaluating the pilot performance and determining the future of the unit. In May, 1976, Gulf advised unit participants that neither well was capable of being completed as a producer.

The South Penrose Skelly Unit was officially terminated on April 1, 1984, after receiving approvals from the New Mexico State Land Office, State Energy and Minerals Department, United States Bureau of Land Management, and the required 80 percent of the unit's working interest ownership.

On abandonment of the unit and under the terms of the South Penrose Skelly Unit Agreement, Shell Western assumed operations of all wells on its Grizzell lease, including No. 11, formerly SPSU No. 262. We propose to waterflood the Penrose Skelly Grayburg Pool under our Grizzell lease by converting well No. 11 to injection service. We estimate that successful waterflooding will result in the recovery of an additional 85,000 barrels of oil.

BNA8515402

In accordance with the provisions set forth in Rule 701-F, we request an exception to the hearing requirements of Rule 701-A for conversion to injection of additional wells for an authorized project.

If additional information is required, please advise.

Yours very truly,

Original Signed By
A. J. FORE

JMW:CMM

A. J. Fore
Supervisor Regulatory & Permitting
Mid-Continent Division

cc: State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

bc: B. G. Ratterree
D. J. Pfau
C. Saucedo