STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [ ] yes [ ] no

II. Operator: Sun Exploration and Production Company

Address: P.O. Box 1861, Midland, Texas 79702

Contact party: Dee Ann Kemp Phone: 915-688-0374

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? [X] yes [ ] no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological 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 source 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 source 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: Dee Ann Kemp Title Sr. Acct. Asst.

Signature: Dee Ann Kemp Date: 8-16-83

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division 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 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, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

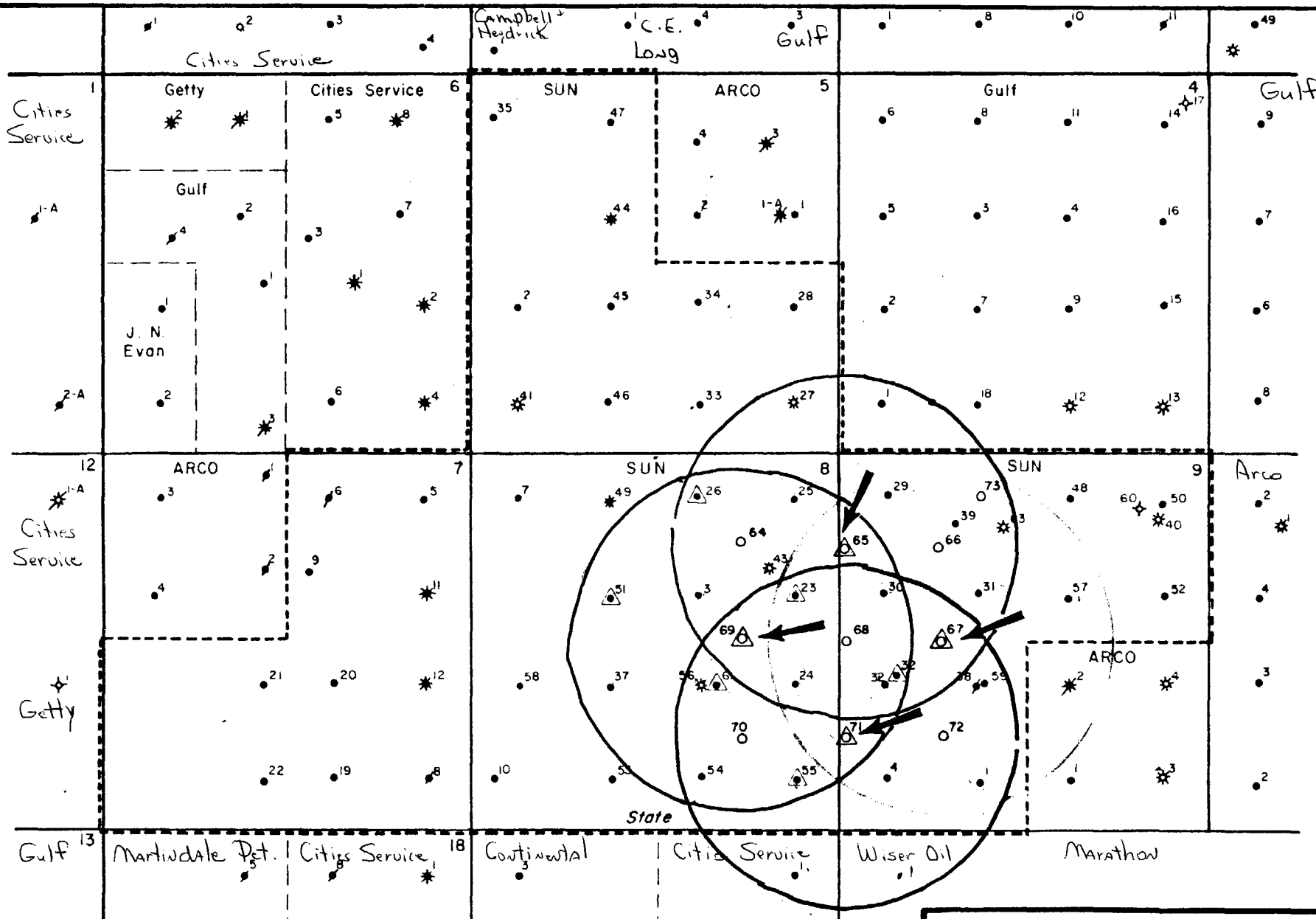
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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.

8/30/83

Based on a conversation with Dee Ann Kemp, Sun plans only to inject into the Queen formation. Approval will be given only for the Queen formation even though they are applying for the whole pool. Reason; Pressure limit assignment for the Queen zone will not apply to the Seven Rivers zone. JAQ.

V



• Oil + Water – GOR

△ BWPD | Cum. wtr. inj. THDS
PSI

SUN PRODUCTION CO.

STATE "A" ACCT. NO. 2
T-22-S R-36-E
Lea County, New Mexico

1" = 2000 ft.

VI.

WELL NAME: Arco (Sinclair) State 157A #2
FIELD: South Eunice
LOCATION: 1980' FSL and 1980' FEL, Section 9, Unit Letter J, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 3-17-55 COMPLETION DATE: 4-19-55
TD: 3850' PBTD:

CASING AND CEMENTING DATA:
SURFACE CASING: 10-3/4", C. S. @ 316', cmt circ. to surface with 275 sx.

INTER. CASING:

PROD. CASING: 7", C. S. 3849, cmt with 300 sx, 9-5/8" open hole, top of cement 2380' calculated.

COMPLETION RECORD:
INITIAL COMP: Dual to 7 Rivers and Yates gas pay

INITIAL POTENTIAL: 3472 MCF

PRESENT COMP: Plugged 12-4-75.

PRESENT WELL CLASS: Plugged 12-4-75.

WELL COMPLETION SKETCHES SUN–5036-4-A

WELL	FIELD	DATE
ARCO State 157A #2	Langlie Mattix	8-11-83

☒ PRESENT COMPLETION ☐ SUGGESTED COMPLETION Plugging Record

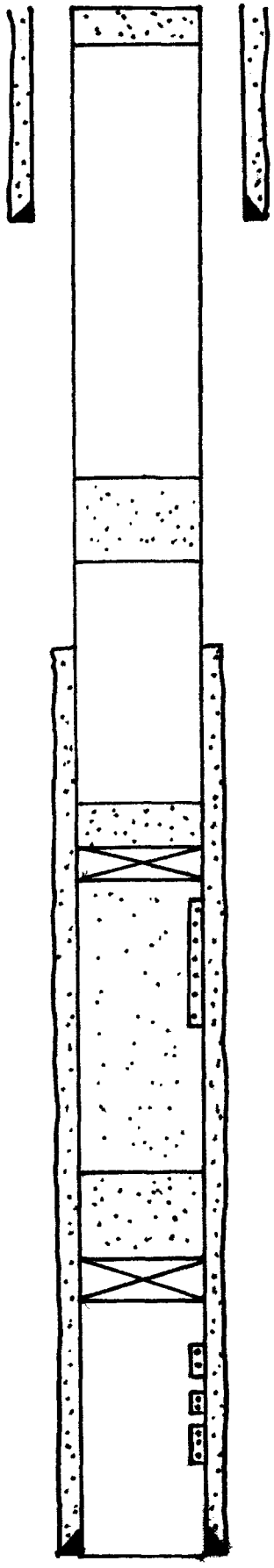
PERMANENT WELL BORE DATA

Location: 1980' FSL and 1980' FEL, Section 9, Unit Letter J, T22S, R 36E, Lea Co., New Mexico
Elev. 3551' GR.
Spud 3-17-55
Comp. 4-4-55

Surf. Csg. 10¾", 32.75#, C.S. @ 314', cmt. to surf with 275 sx.

Top of cmt. @ 1655' calc.

Prod. Csg: 7", 20#, C.S. @ 3849', cmt. with 300 sx., 8¾" hole
T.D. 3850'



DATA ON THIS COMPLETION

10 sack cmt. plug @ surface

P+A 12-2-75

20 sack (100') plug @ 1525' top salt

7 sack (35') cmt plug above ret. cmt. ret. @ 3115'

Jalmat Perfs 3142-3338' squeezed with 50 sx. cmt below ret.

60' (20 sack) cmt plug above pkr.

Pkr. and DR Plug @ 3672'

Queen Perfs: 3712-44, 3749-55, 3759-74

WELL NAME: Cities Service State "H" #1
FIELD: South Eunice
LOCATION: 660' FNL and 660' FEL of section 17, Unit Letter A, T22S, R36E, Lea County, New Mexico

SPUD DATE: 8-14-37
TD: 3914'
COMPLETION DATE: 9-28-37
PBTD: 3914

CASING AND CEMENTING DATA:
SURFACE CASING: 13", C-S @ 245', cmt to surface with 250 sx.

INTER. CASING: 9-5/8", C-S @ 1471', cmt to surface with 450 sx.

PROD. CASING: 7", C-S @ 3680', set in 8-3/4" hole, cmt. 200 sx, top of cement 2220' calc.

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3680-3914.

INITIAL POTENTIAL: F 60 BOPD, 12000 MCFD, 90 BWPD.

PRESENT COMP: Open hole Queen 3680 - 3914

PRESENT WELL CLASS: Oil well

WELL NAME: Gulf Janda State "F" #1
FIELD: South Eunice
LOCATION: 660' FSL and 660' FWL, section 4, Unit letter M, T22S, R36E, Lea County, New Mexico

SPUD DATE: 5-26-43 COMPLETION DATE: 6-30-43
TD: 3870 PBTD: 3870

CASING AND CEMENTING DATA:
SURFACE CASING: 9", C.S. @ 295', cmt to surface with 250 sx. cmt.

INTER. CASING:

PROD. CASING: 5½", C. S. @ 3725', set in 7-7/8" hole, cmt with 450 sx, top of cement @ 1035' calc.

COMPLETION RECORD:
INITIAL COMP: Open hole 3725 - 3870 Queen.

INITIAL POTENTIAL: F 129 BOPD

PRESENT COMP: Open hole 3725 - 3870 Queen

PRESENT WELL CLASS: Oil well

WELL NAME: Wiser Oil Company (Oil well drilling "A") State A #1
FIELD: South Eunice
LOCATION: 660' FNL and 660' FWL, Section 16, Unit Letter D, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 2-25-37 COMPLETION DATE: 5-16-37
TD: 3804 PBTD: 3804

CASING AND CEMENTING DATA:
SURFACE CASING: 12½', C. S. @ 243', cmt with 100 sx.

INTER. CASING: 9-5/8", C. S. @ 1467', cmt to surface with 450 sx.

PROD. CASING: 7", C.S. @ 3675', set in 8-3/4" hole, cmt. with 250 sx, top of cement 1850' calculated.

COMPLETION RECORD:
INITIAL COMP: Open hole 3675' - 3804' Queen

INITIAL POTENTIAL: F 108 BOPD and 2240 MCFD

PRESENT COMP: Open hole Queen 3675' - 3804'

PRESENT WELL CLASS: Oil well

WELL NAME: Sun State A Account 2 #1
FIELD: South Eunice
LOCATION: 660' FSL and 1974' FWL, Section 9, Unit Letter N, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 7-1-35 COMPLETION DATE: 8-29-35
TD: 3835 PBTD: 3775

CASING AND CEMENTING DATA:
SURFACE CASING: 12½", C.S. @ 249', cmt. to surface with 200 sx.

INTER. CASING: 9-5/8", C.S. @ 1498' cmt. to surf with 600 sx.

PROD. CASING: 7", 24#, CS @ 3689', set in 8-¾" hole, cmt with 800 sx to surf. circ.

COMPLETION RECORD:
INITIAL COMP: Open hole 3689' - 3835' Queen.

INITIAL POTENTIAL: F 264 BOPD

PRESENT COMP: Open hole Queen 3689 - 3775

PRESENT WELL CLASS: Oil Well

WORKOVERS:
#1 8-8-56 PD to 3775 with pea gravel, acidize with 500 gal, Sand oil treat with 20,000 gel oil and 2000' # sand.
Before WO. 616 BWPD, Ø BO - After WO 47 BOPD, OBW.

WELL NAME: Sun State A Account 2 #23
FIELD: South Eunice
LOCATION: 1980' FNL and 660' FEL, Section 8, Unit Letter H, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 11-4-42 COMPLETION DATE: 11-27-42
TD: 3870' PBTD: 3826'

CASING AND CEMENTING DATA:
SURFACE CASING: 10", 40#, C.S. @ 313', cmt to surf. with 200 sx.

INTER. CASING:

PROD. CASING: 7", 24#, C.S. @ 3706', cmt. with 500 sx, 8-3/4" hole, top of cement 52' calc. Liner: 4½", 9.5# liner from 3619-3826, cmt with 50 sx.

COMPLETION RECORD:
INITIAL COMP: Open hole 3706-3870 Queen.

INITIAL POTENTIAL: 192 BOPD, 1651 MCFD

PRESENT COMP: Converted to injection 3780-3813 Queen Perfs PKR @ 3762

PRESENT WELL CLASS: TA'd injection well.

WORKOVERS:
#1 2-6-59 PD to 3822 with lead wool & pea gravel sand oil treat 3706-3822 with 30,000 gal oil and 50,000# sand.
#2 Ran 4½" liner from 3619 to 3826 1 cmt with 50sx, perf. 3780-3813.

WELL NAME: Sun State A Account 2 #24
FIELD: South Eunice
LOCATION: 1980' FNL and 660' FEL, Section 8, Unit Letter I, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 12-15-42 COMPLETION DATE: 1-13-43
TD: 3889 PBTD: 3863

CASING AND CEMENTING DATA:
SURFACE CASING: 10", 40#, C.S. @ 418' cmt to surf. with 200 sx.

INTER. CASING:

PROD. CASING: 7", 24#, C.S. @ 3727', set in 8-3/4" hole, cmt with 250 sx, top of cement @ 1900' calc.
Liner: 4½" liner from 3612 -3886, cmt. 50 sx.

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3727 - 3889.

INITIAL POTENTIAL: 72 BOPD, 214 MCFD, 4 BWPD.

PRESENT COMP: Same as W. O. #1

PRESENT WELL CLASS: Oil well.

WORKOVERS:
#1 1-24-65 ran 4½" liner from 3612-3886. Perf: 3666-3741 Seven Rivers-Queen. Sandoil treat with 35,000 gal oil and 35,000# sand.

WELL NAME: Sun State A Account 2 #25
FIELD: South Eunice
LOCATION: 660' FNL and 660' FEL, Section 8, Unit Letter A, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 1-23-43 COMPLETION DATE: 2-11-43
TD: 3855 PBTD: 3855

CASING AND CEMENTING DATA:
SURFACE CASING: 10", 40#, C. S. @ 456', cmt with 200 sx to surf.

INTER. CASING:

PROD. CASING: 5½", 17# C.S. @ 3701', set in 7-7/8" hole, cmt with 300 sx, top of cement @ 1910' calc.

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3701-3855.

INITIAL POTENTIAL: 264 BOPD, 237 MCFD.

PRESENT COMP: Same as initial

PRESENT WELL CLASS: Oil well

WORKOVERS:

#1 9-9-55 Sand oil treat 3701-3855 with 20,000 gal oil and 20,000 sand. Before W. O. 15 BOPD, 123 MCFD After W.O. 48 BOPD, 170 MCFD.

WELL NAME: Sun State A Account 2 #26
FIELD: South Eunice
LOCATION: 660 FNL and 1980' FEL, Section 8, Unit Letter B, T22S, R36E, Lea County, New Mexico

SPUD DATE: 2-19-43 COMPLETION DATE: 3-13-43
TD: 3890 PBTD: 3849'

CASING AND CEMENTING DATA:
SURFACE CASING: 10", 40#, C.S. @ 524', Cmt to surf with 200 sx.

INTER. CASING:

PROD. CASING: 7", 24#, C.S. @ 3702', set in 8-3/4" hole, cmt with 250 sx, top of cement @ 1873' calc.

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3702-3890

INITIAL POTENTIAL: 186 BOPD, 204 MCFD.

PRESENT COMP: Same as W.O. #2, Injection 3702-3849'.

PRESENT WELL CLASS: TA'd Injection Well

WORKOVERS:
#1 5- -57 PB to 3849 and sand oil treated with 20,000 gal oil and 20,000# sand. Converted to water injection, Pkr. @ 3659'.

WELL NAME: Sun State A Account 2 #27
FIELD: South Eunice
LOCATION: 660' FSL and 660' FEL, Section 5, Unit Letter P, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 3-23-43 COMPLETION DATE: 4-24-43
TD: 3872 PBTD: 3865

CASING AND CEMENTING DATA:
SURFACE CASING: 10", 40#, C.S. @ 416', cmt to surf. with 200 sx.

INTER. CASING:

PROD. CASING: 7", 24#, C. S. @ 3089', set in 8-3/4" hole, cmt with 400sx. top of cement calc. 163'. Liner #1 5½", 14&17#, from 3063'-3725', cmt. 60 sx. Liner #2 4" F.J. from 3675-3865', slotted from 3772-3803.

COMPLETION RECORD:
INITIAL COMP: Open hole 3725-3872 Queen

INITIAL POTENTIAL: 624 BOPD, 1167 MCFD.

PRESENT COMP: Same as W. O. #2 Dual Jalmat - South Eunice

PRESENT WELL CLASS: Dual Jalmat gas, South Eunice oil.

WORKOVERS:

#1 7-6-62 Ran 4" F.J. liner from 3675-3865 sand oil treated with 20,000 gal oil and 40,000# sand.
#2 12-23-64 Dualed as Jalmat gas and South Eunice oil. Perfed Jalmat 3055-3355, pkr @ 3495'

WELL NAME: Sun State A Account 2 #29
FIELD: South Eunice
LOCATION: 660' FNL and 660' FWL, Section 9, Unit Letter D, T22S, R36E, Lea County, New Mexico

SPUD DATE: 6-5-43 COMPLETION DATE: 7-3-43
TD: 3860 PBTD: 3802

CASING AND CEMENTING DATA:
SURFACE CASING: 10" - 40 #, C.S. @ 466' cmt to surf. with 200 sx.

INTER. CASING:

PROD. CASING: 5½", 17#, C.S. @ 3717, set in 7-7/8" hole, cmt with 250 sx, top of cement @ 2225' calc.

COMPLETION RECORD:
INITIAL COMP: Open hole 3717-3850 Queen

INITIAL POTENTIAL: 192 BOPD, 976 MCFD

WORKOVERS:
#1 3-23-61 PB to 3802 - Sand oil treat with 20,000 gal oil, 40,000# sand.

PRESENT COMP: Same as W.O. #1 - open hole 3717 - 3802

PRESENT WELL CLASS: Oil well

WELL NAME: Sun State A Account 2 #30
FIELD: South Eunice
LOCATION: 1980' FNL and 660' FWL, Section 9, Unit Letter E, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 9-19-45 COMPLETION DATE: 10-27-45
TD: 3840 PBTD: 3829

CASING AND CEMENTING DATA:
SURFACE CASING: 10", 40#,C.S. @ 307', cmt to surf. with 225 sx.

INTER. CASING: 7-5/8", 26.4#, C. S. @ 1548', cmt. with 200 sx, top of cement @288' calc.

PROD. CASING: 5½", 14 & 15.5#, C.S. @ 3700', set in 6-3/4" hole, cmt with 200 sx., top of cmt. @ 1065' calc.

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3700-3840

INITIAL POTENTIAL: F 114 BOPD, 935 MCFD

PRESENT COMP: Same as W. O. #2 open hole 3700-3829.

PRESENT WELL CLASS: Oil well

WORKOVERS:
#1 4-24-56 Sand oil treat 3700-3840 with 20,000 gal oil and 20,000# sand. Before W.O.-50 BOPD, 0 BWPD - After W.O. - 50 BOPD, 375 MCF, 4 BWPD
#2 10-15-56-PD to 3829' with pea gravel

WELL NAME: Sun State A Account 2 #31
FIELD: South Eunice
LOCATION: 1980' FNL and 1980' FWL, Section 9, Unit Letter F, T22S, R36E, Lea County, New Mexico

SPUD DATE: 11-3-45 COMPLETION DATE: 11-26-45
TD: 3845 PBTD: 3782

CASING AND CEMENTING DATA:
SURFACE CASING: 10", 40#, C.S. 309', cmt. to surf with 175 sx.

INTER. CASING: 7-5/8", 26.4#, C.S. @ 1532', cmt with 200 sx, top of cement @ 282' calc.

PROD. CASING: 5½", 15.5#, C.S. @ 3714', cmt with 200 sx, 6-3/4" hole, top of cmt. @ 1080' calc.
Liner: 4½", 12.6#, from 3576-3802, cmt 50 sx.

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3714-3845'.

INITIAL POTENTIAL: 120 BOPD, 660 MCFD, ØBWPD.

PRESENT COMP: Same as W. O. #2 Perfs 3644-3768.

PRESENT WELL CLASS: Oil well

WORKOVERS:
#1 4-24-56 PD to 3834' and sand oil treat with 20,000 gal oil and 20,000# sand.
Before W.O. 3 BOPD, 33 BWPD - After W.O. 47 BOPD, 469 MCFD, ØBWPD.
#2 Ran 4½" liner from 3576-3802, cmt with 50 sx. Perf 3644-3768'.

WELL NAME: Sun State A Account 2 #32
FIELD: South Eunice
LOCATION: 1980' FSL and 660' FWL, Section 9, Unit Letter L, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 12-8-45 COMPLETION DATE: 12-21-45
TD: 3843 PBTD: Surface P&A

CASING AND CEMENTING DATA:
SURFACE CASING: 12½", 50#, C.S. @ 208', cmt. to surf with 150 sx

INTER. CASING: 8-5/8", 32# C. S. @ 1540', cmt with 150 sx, top of cement @ 800' calc.

PROD. CASING: 5½", 14#, C.S. @ 3704', cmt with 150 sx, top of cement @ 2700' calc.

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3704-3843.

INITIAL POTENTIAL: 40 BOPD, 220 MCFD, 0 BWPD.

PRESENT COMP:

PRESENT WELL CLASS: P&A 8-19-70

WORKOVERS: #1 9-16-63 Vibro fraced and sand oil treated wit 20,000 gal oil & 40,000# sand, PB to 3743.

PLUGGING RECORD: Set cmt. retainer @ 3675' pumped 75 bbls injectrol L + 7 bbls fresh water, then pumped 100 sx cmt. Set 10 sack cement plug at surface.

WELL NAME: Sun State A Account 2 #32Y
FIELD: South Eunice
LOCATION: 2050' FSL and 760' FWL, Section 9, Unit Letter L, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 7-9-70 COMPLETION DATE: 7-28-70
TD: 3900' PBTD: 3870'

CASING AND CEMENTING DATA:
SURFACE CASING: 7-7/8", 26#, C.S. @ 357', cmt. to surf. with 175 sx.

INTER. CASING:

PROD. CASING: 4½", 9.4#, C.S. @ 3900', cmt. with 300 sx, top of cement @ 2655 temp survey.

COMPLETION RECORD:
INITIAL COMP: Perf. Queen 3702 - 82

INITIAL POTENTIAL: P 18 BOPD, 126 BWPD

PRESENT COMP:

PRESENT WELL CLASS: TA'd injection well

WORKOVERS:

9-14-70 Converted to water injection pkr @ 3655, Injection into Queen perfs 3702 - 82.

COUNTY Lea, New Mexico

FIELD or POOL South Eunice

SEC. 9 T-22-S R-36-E

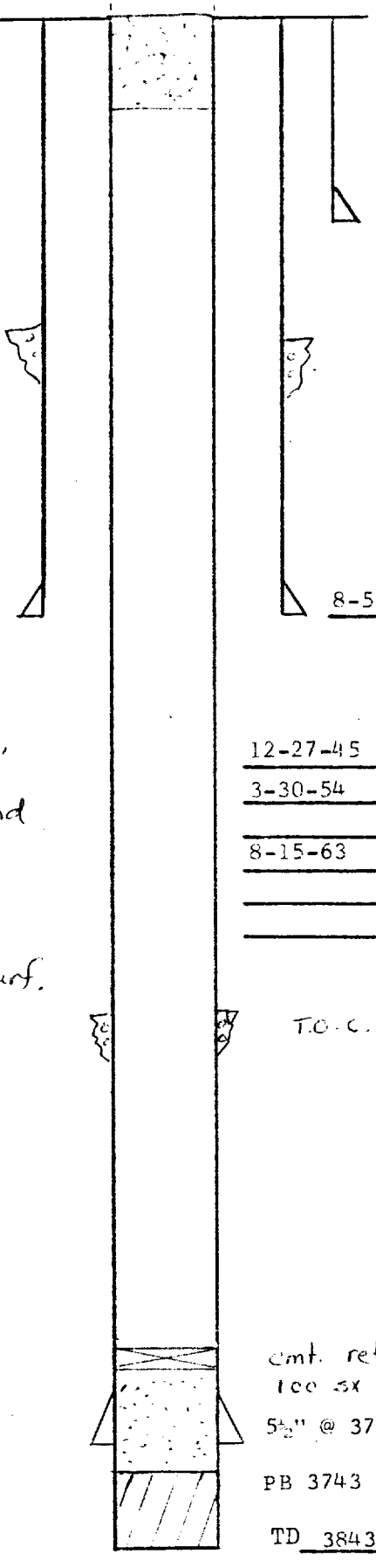
660 FWL & 1980 FSL

EL. ____ DF 3566 GL

COMPL. 12-21-45

IP: 40 OIL 0 WTR 5500 GOR

RE-COMPL ____



10 sx cmt. @ surf

12-1/2" Csg. set @ 208 '
w/ 150 sxs. cmt.
cmt. to surf.

T.O.C. Behind 8 5/8" @ 800' Calc.

8-5/8" Csg. set @ 1540 '
w/ 150 sxs. cmt.

T.O.C. behind 5½" @ 2700' Calc.

cmt. retainer @ 3675'
100 sx cmt. below

5½" @ 3704 w/150 sxs. cmt.

PB 3743

TD 3843

Plugging Record:

Set cement retainer @ 3675'
Pumped 75 bbls injectral and
7 bbls fresh water. Then
pumped 100 sx cmt.

Set 10 sx cmt plug at surf.

TREATMENTS

12-27-45	A/1000 gals OH 3704-3843
3-30-54	Acid frac w/4000 gals + 6000# sd.
	CO to 3843'
8-15-63	Vibrofraced w/3 no. 3 shots @ 3773-81
	SOT w/20000 gals + 40000# sd. PB 3743

Date Revised 8-9-83
By ____

WELL NAME: Sun State A Account 2 #37
FIELD: South Eunice
LOCATION: 1980' FSL and 1980' FWL, Section 8,
Unit Letter K, T22S, R36E, Lea County, New Mexico

SPUD DATE: 11-12-46 COMPLETION DATE: 12-21-46
TD: 3912 PBTD: 3850

CASING AND CEMENTING DATA:
SURFACE CASING: 15½", 70#, C.S. @ 205', cmt to surf. with 350 sx.

INTER. CASING: 10-3/4", 40.5#, C.S. @ 1492', cmt to surf. with 800 sx.

PROD. CASING: 5½" 14#, C. S. @ 3812', Cmt with 200 sx, top of cmt. @ 2615 calc.
Liner: 4½", 12.24# FJ, from 3116-3874, cmt. 35sx.

COMPLETION RECORD:
INITIAL COMP: Perfs 3200-3799 & open hole from 3812 - 3901

INITIAL POTENTIAL: 5690 MCFD

PRESENT COMP:

PRESENT WELL CLASS: Oil Well

WORKOVERS: #1 - 12-1-54 Dual complete to separate oil and gas zones.
#2 - 2-22-55 Perf & sand oil treat 3230 - 3400 with 6,000 gal oil and 12,000# sand.
#3 - 5-6-57 Sand oil treat 3230-3400 with 20,000 gal oil & 20,000# sand.
#4 - 11-14-62 All perfs squeezed 4½" liner run from 3116-3874. Perf 3841-44 and sand oil treat with 20,000 gal oil & 40,000# sand.

WELL NAME: Sun State A Account 2 #38
FIELD: South Eunice
LOCATION: 1980' FSL and 1980' FWL, Section 9,
Unit Letter K, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 11-28-46 COMPLETION DATE: 3-13-47
TD: 3845 PBTD: 3823

CASING AND CEMENTING DATA:
SURFACE CASING: 12½", 50#, C.S. @ 242', cmt to surf. with 200 sx.

INTER. CASING: 8-5/8", 24#, C.S. @ 1494', cmt to surf. with 800 sx.

PROD. CASING: 5½", 14#, C. S. @ 3794', cmt with 200 sx., top of cmt. @ 2598' calc.

COMPLETION RECORD:
INITIAL COMP: Perfs 3160 - 3780
open hole 3794-3823

INITIAL POTENTIAL: 3870 MCFD

PRESENT COMP: Same as W.O. #1 Perfs 3105 - 3200

PRESENT WELL CLASS: Gas Well

WORKOVERS: #1 5-10-53 Perf 3105-3200, 3510-40, 3650-3715
#2 6-16-55 Set pkr @ 3400'. Sand oil treat with 10,000 gal oil and 20,000# sand.

WELL NAME: Sun State A Account 2 #39
FIELD: South Eunice
LOCATION: 990' FNL and 1650' FWL, Section 9, Unit Letter C,
T22S, R36E, Lea County, New Mexico.

SPUD DATE: 2-14-48
TD: 11045

COMPLETION DATE: 8-19-48
PBTD: 3842

CASING AND CEMENTING DATA:
SURFACE CASING: 13-3/8", 48#, C. S. @ 233', cmt to surf with 250 sx.

INTER. CASING: 9-5/8", 36#, C. S. 3020', cmt to surf. with 2,000 sx.

PROD. CASING: 7", 20#, C.S. @ 3929', cmt with 200 sx, top of cement @ 2650' temp survey. Old prod. Csg: 5½" cut @ 3954 goes to 11,020', cmt 400 sx.

COMPLETION RECORD:
INITIAL COMP: Perfs 10,891 - 10,880

INITIAL POTENTIAL: 8 BOPD

PRESENT COMP: Same as W. O. #1

PRESENT WELL CLASS: T. A. Oil well

WORKOVERS: #1 6-17-49 set cmt plug from 10,398 - 10,818
cut 5½" csg. @ 3954' and pulled.
Ran 7" csg string to 3929 and cmt. with 200 sx
Perf 3680 - 3842.

WELL NAME: Sun State A Account 2 #43
FIELD: South Eunice (Jalmat Pool)
LOCATION: 1650' FNL and 990' FEL, Section 8, Unit Letter H, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 10-14-57 COMPLETION DATE: 10-30-57
TD: 3640' PBTD: 3323

CASING AND CEMENTING DATA:
SURFACE CASING: 8-5/8", 28#, C.S. @ 328', cmt with 300 sx to surf.

INTER. CASING:

PROD. CASING: 5½", 14#, C. S. @ 3327' cmt with 250 sx, top of cmt @ 1833' calc.

COMPLETION RECORD:
INITIAL COMP: Perf Yates - Seven Rivers 3180-3320.

INITIAL POTENTIAL: AOF 4250 MCFD

PRESENT COMP: Same as initial

PRESENT WELL CLASS: Gas well Jalmat

WELL NAME: Sun State A Account 2 #51
FIELD: South Eunice
LOCATION: 1980' FNL and 1980' FWL, Section 8, Unit Letter F, T22S, R36E, Lea County, New Mexico

SPUD DATE: 11-9-60 COMPLETION DATE: 11-16-60
TD: 3867 PBTD: 3867

CASING AND CEMENTING DATA:
SURFACE CASING: 9-5/8", 36#, C. S. @ 312', cmt to surf with 300 sx.

INTER. CASING:

PROD. CASING: 7", 20#, C.S. @ 3778', cmt. with 250 sx, top of cmt @ 2370' temp survey.

COMPLETION RECORD:
INITIAL COMP: O. H. 3778 - 3867 Queen-Seven Rivers

INITIAL POTENTIAL: 50 BOPD, 4 BWPD

PRESENT COMP: Same as W. O. #1

PRESENT WELL CLASS: TA'd dual gas and injection well.

WORKOVERS: #1 - Dual complete as Jalmat gas well and South Eunice injection well. Jalmat perfs 3192-3370, pkr @ 3753, open hole 3778-3867-South Eunice injection.

WELL NAME: Sun State A Account 1 #54
FIELD: South Eunice
LOCATION: 660' FSL and 1980' FEL, Section 8, Unit Letter O, T22S, R36E, Lea County, New Mexico

SPUD DATE: 2-12-61 COMPLETION DATE: 2-19-61
TD: 3863 PBTD: 3863

CASING AND CEMENTING DATA:
SURFACE CASING: 9-5/8", 32#, C.S. @ 309', cmt. to surf. with 300 sx.

INTER. CASING:

PROD. CASING: 7", 20#, C. S. 3791', cmt 250 sx, top of cement @ 2660' temp. survey.

COMPLETION RECORD:
INITIAL COMP: Open hole 3791 - 3863

INITIAL POTENTIAL: 338 BOPD, 716 MCFD, 112 BWPD

PRESENT COMP: Same as initial open hole 3791-3863

PRESENT WELL CLASS: Oil well

WELL NAME: Sun State A Account 2 #55
FIELD: South Eunice
LOCATION: 660' FSL and 660' FEL, Section 8, Unit Letter P, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 3-29-61 COMPLETION DATE: 4-5-61
TD: 3850' PBTD: 3845'

CASING AND CEMENTING DATA:
SURFACE CASING: 8-5/8", 24#, C.S. @ 330', cmt to surf. with 300 sx.

INTER. CASING:

PROD. CASING: 5½", 14#, C.S. @ 3850', cmt. with 250 sx., top of cmt. @ 2590' temp. survey.

COMPLETION RECORD:
INITIAL COMP: Perfs 3774 - 3835.

INITIAL POTENTIAL: 135 BOPD, 346 MCFD, Ø BWPD

PRESENT COMP: Same as W. O. #1

PRESENT WELL CLASS: TA'd Injection well.

WORKOVERS: #1 Converted to water injection well. Ran tubing and pkr to 3739'. Injection into Queen perfs 3774-3835'.

WELL NAME: Sun State A Account 2 #56
FIELD: South Eunice
LOCATION: 1980' FSL and 1980 FEL, Section 8, Unit Letter J, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 8-6-61 COMPLETION DATE: 8-12-61
TD: 3853 PBTD: 3646

CASING AND CEMENTING DATA:
SURFACE CASING: 8-5/8", 24#, C.S. @ 333', cmt. to surf. with 300 sx.

INTER. CASING:

PROD. CASING: 5½", 14#, C.S. @ 3853', cmt with 300 sx, top of cement @ 2535' temp survey.

COMPLETION RECORD:
INITIAL COMP: Perfs 3782-3838 non productive-perfed then sqzed 3182-3353 Jalmat.

INITIAL POTENTIAL: 1865 MCFD

PRESENT COMP: Same as initial Jalmat

PRESENT WELL CLASS: Gas Well

WELL NAME: Sun State A Account 2 #57
FIELD: South Eunice
LOCATION: 1980' FNL and 1980' FEL, Section 9, Unit Letter G, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 1-21-64 COMPLETION DATE: 1-29-64
TD: 3806 PBTD: 3785'

CASING AND CEMENTING DATA:
SURFACE CASING: 8-5/8", 24#, C.S. @ 335', cmt to surf. with 300 sx.

INTER. CASING:

PROD. CASING: 5½", 14-17#, C.S. @ 3806, cmt with 300 sx, top of cmt. @ 2009' calc.

COMPLETION RECORD:
INITIAL COMP: Perfs 3755-80 Queen

INITIAL POTENTIAL: 70 BOPD, 62 MCFD, 8 BWPD

PRESENT COMP: Same as initial

PRESENT WELL CLASS: Oil well

WELL NAME: Sun State A Account 2 #59
FIELD: South Eunice
LOCATION: 1980' FSL and 2080 FWL, Section 9, Unit Letter K, T22S, R36E, Lea County, New Mexico

SPUD DATE: 10-9-64 COMPLETION DATE: 10-22-64
TD: 3870' PBTD: 3760 CIBP

CASING AND CEMENTING DATA:
SURFACE CASING: 7-7/8", 26#, C.S. @ 328', cmt to surf. with 250 sx.

INTER. CASING:

PROD. CASING: 4½", 9.5#, C.S. @ 3870', cmt with 300 sx, top of cmt. @ 1480' calc.

COMPLETION RECORD:
INITIAL COMP: Perf 3670 - 3822 Queen.

INITIAL POTENTIAL: 24 BOPD, 65 BWPD

PRESENT COMP: Same as W. O. #1

PRESENT WELL CLASS: Oil Well

WORKOVERS: #1 10-27-64 Set CIBP @ 3760 with 1 sk cmt perfs 3670-3737, sand oil treated with 25,000 gal oil and 25,000# sand.

WELL NAME: Sun State A. Account 2 #61
FIELD: South Eunice
LOCATION: 1980' FSL and 1780' FEL, Section 8, Unit Letter J, T22S, R36E, Lea County, New Mexico

SPUD DATE: COMPLETION DATE: 7-25-70
TD: 3949' PBTD: 3897'

CASING AND CEMENTING DATA:
SURFACE CASING: 7-5/8", 24#, C.S. @ 340', cmt to surf. with 175 sx.

INTER. CASING:

PROD. CASING: 4½", 9.5#, C.S. @ 3949', cmt with 300 sx, top of cmt. @ 1559' calc.

COMPLETION RECORD:
INITIAL COMP: Perf Queen 3793 - 3876.

INITIAL POTENTIAL: 12 BOPD, 24 BWPD.

PRESENT COMP: Same as W. O. #1

PRESENT WELL CLASS: TA'd injection well

WORKOVERS:
#1 9-14-70 Converted to water injection- ran tubing and pkr. to 3754. Injection into Queen Perfs 3793-3876.

WELL NAME: Sun State A Account 2 #63
FIELD: South Eunice
LOCATION: 990' FNL and 2310' FWL, Section 9, Unit Letter C, T22S, R36E, Lea County, New Mexico

SPUD DATE: 5-29-77 COMPLETION DATE: 9-14-77
TD: 3700' PBTD: 3700'

CASING AND CEMENTING DATA: 8-5/8", 24#, C.S. @ 819', cmt with
SURFACE CASING: 500 sx to surf.

INTER. CASING:

PROD. CASING: 5½", 14#, C.S. @ 3700' cmt 1425 sx . D.V. tool @ 2727'. cmt. circ both stages.

COMPLETION RECORD:
INITIAL COMP: Perf - Yates - Seven Rivers
3183 - 3584

INITIAL POTENTIAL: AOF 836 MCFD

PRESENT COMP: Same as initial

PRESENT WELL CLASS: Gas Well

WELL NAME: Sun State A Account #3
FIELD: South Eunice
LOCATION: 1980' FNL & 1980' FEL, Section 8, Unit Letter G, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 12-17-36 COMPLETION DATE: 2-3-37
TD: 3885 PBTD: 3880

CASING AND CEMENTING DATA:
SURFACE CASING: 12½", 50#, C.S. @ 274', cmt to surf with 250 sx.

INTER. CASING: 9-5/8", 36#, C. S. @ 1509', cmt to surf. with 600 sx.

PROD. CASING: 7#, 24#, C.S. @ 3690', set in 8-3/4" hole, cmt. with 250 sx.
top of cmt. at 1860' calc.
Liner: 5 1/2", 14# slotted liner from 3655-3880.

COMPLETION RECORD:
INITIAL COMP: Open hole 3690 - 3880 Queen
Shot with 300 quarts nitro.

INITIAL POTENTIAL: No test made.

PRESENT COMP: Same as W. O. #1

PRESENT WELL CLASS: Oil well

WORKOVERS: #1 9-16-59 - Ran 5½" 14# slotted liner from 3655 - 3880.

WELL NAME: Sun, State A Account 2 #4
FIELD: South Eunice
LOCATION: 660' FSL and 660' FWL, Section 9, Unit Letter M, T22S, R36E, Lea County, New Mexico.

SPUD DATE: 5-31-37 COMPLETION DATE: 7-14-37
TD: 3879' PBTD: 3799'

CASING AND CEMENTING DATA:
SURFACE CASING: 12½", 50#, C.S. @ 251', cmt to surf with 200 sx.

INTER. CASING: 9-5/8", 36#, C.S. @ 1505', cmt to surf with 600 sx.

PROD. CASING: 7", 24#, C. S. @ 3642' set in 8 3/4" hole cmt 150 Sxs top of cmt. at 2544'
Liner 4 1/2" from 3497'-3799'

COMPLETION RECORD:
INITIAL COMP: Open hole Queen 3642-3799 shot 260 quarts nitro.

INITIAL POTENTIAL: 110 BOPD, 3000 MCFD

PRESENT COMPLETION: Same as W. O. #1. Perfs 3618-3778.

PRESENT WELL CLASS: Oil Well

WORKOVERS: #1 2-6-65 Ran 4½" liner from 3497-3799, Perf Seven Rivers Queen from 3618 to 3778. Sand oil treat with 40,000 gal oil and 40,000#sand.
Before W.O.: 11 BOPD, 50 MCFD, 106 BW - After W.O. 12 BOPD, 1048 MCFD, 1 BWPD.

VII.

1. Proposed average and maximum daily rate and volume of fluids to be injected at 300 barrels (average) and 600 barrels (Maximum).
2. System is closed
3. Proposed average and maximum injection pressure - 800# (average) and 1500# (maximum).
4. The only fluid that will be injected is San Andres and some produced water from the nearby wells.
5. The water will be injected into a zone that is productive of oil or gas.

VIII. The Basal Seven Rivers and Queen formation (zone of water injection) 3600-3870. The lithology is a finely crystalline to sucrosic dolomite (sometimes sandy) with interbedded sandstones fine - very fine grained sometimes dolomitic. The State "A" A/C 2 wells will have 550' for 8-5/8" casing set to preserve the fresh water aquifers found in the Ogalalla formation. There is no known fresh water aquifers below the proposed water injection zone in this area.

IX. Each well will be stimulated with 500 gallons of acid.

1942-A

HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W83-934

To Sun Production Company

Box 1255

Eunice, New Mexico

ATTN: Mr. Elmer Teel

Date 8-8-83

Submitted by _____ Date Rec. 8-8-83

Well No. Water Well #1 Depth _____ Formation _____

County _____ Field _____ Source _____

Resistivity	8.25 @ 74°F.			
Specific Gravity	1.004			
pH	7.6			
Calcium (Ca)	70			*MPL
Magnesium (Mg)	24			
Chlorides (Cl)	200			
Sulfates (SO_4)	650			
Bicarbonates (HCO_3)	230			
Soluble Iron (Fe)	Nil			

Remarks: Water Well located near State "A" A/C 2 #1. *Milligrams per liter

Respectfully submitted,

Analyst: Brewer

cc: Dee Ann Kemp - Sun Prod. Co.
Drawer 1861
Midland, Texas

HALLIBURTON COMPANY

By W. L. Brewer
CHEMIST

Subject

Water Compatibility: State A A/C 2 Lease
Eunice Field, Southwestern District

Interoffice Correspondence

SUN

Date February 10, 1983

Location Richardson

From Johnny Reinschmidt, Production Service Laboratory

To Cody Osborne
Midland, Texas

Enclosed water analyses were performed on water samples collected from five water stations (batteries) and the No. 60 WSW on the subject lease. Analyses were requested for compatibility for a proposed WPMS.

Water Analysis No. C-7730 represents San Andres supply water and is probably representative of the water produced from the No. 60 well. Field sheet indicates 140 BBLS of water was allowed to flow from the idle well before a sample was collected for analysis.

The supply water appears to be compatible with the commingled produced waters collected from Water Station Nos 1, 2 and 5. Mixing the supply water with commingled produced waters collected from Station Nos. 7 and 8 could increase the barium sulfate scaling tendencies the waters already have.

All the waters, produced and supply, appear to have calcium carbonate scaling tendencies.

If the San Andres supply water is used for injection in the whole unit, chemical treatments can be recommended to control both the calcium carbonate and barium sulfate scaling tendencies.

Should you wish to discuss these analyses and comments further, please contact the Lab.

Johnny M Reinschmidt

Johnny Reinschmidt
Chemical Engineering Section

JR/js

Attachments

cc: F. Brandes
T. Fox
E. Teel
R. McWright
Corrosion Engr. Sec.
File 23-230

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-7730

FILE 23-230

Operator SUN PRODUCTION 668954
Lease or Well STATE A A/C2 #60 (WSW)
Formation EUNICE SAN ANDRES
Perfs _____ To _____ ; T.D. OH
Method of Collecting Sample WELLHEAD

Treatment _____
Date of last acid job _____

Total Prod.	BOPD	BWPD	MCFPD

District SOUTHWESTERN
Field SOUTH EUNICE
County LEA
State NEW MEXICO
Collected by _____
Date 1-31-83 (Collected) 2-8-83 (Analyzed)
Sample No. 09972
Analyst _____ PPI _____

Description of Sample 1 PT. BLACK OILY WATER

CONSTITUENTS	ppm
Sodium	1880
Calcium	577
Magnesium	260
Barium	0
Strontium	
Potassium	
Iron	0
Chloride	3520
Sulfate	726
Carbonate	0
Bicarbonate	1070
TOTAL DISSOLVED SOLIDS	8033

OTHER PROPERTIES	
pH	7.0
Specific Gravity	1.0065
Resistivity ohm-mtr. @ 75° F	.950
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as $CaCO_3$, ppm	
Sulfide	PRESENT
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	78
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

Possible supply water for proposed WPMS State A A/C2.

Johnny M Reinschmidt

REPORTED BY:
Johnny Reinschmidt
CHEMICAL ENGINEERING SECTION
Copies to:

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-7731

FILE 23-230

Operator SUN PRODUCTION 668954
Lease or Well STATE A A/C2 BATTERY#1
Formation SEVEN RIVERS QUEEN
Perfs _____ To _____ ; T.D. _____
Method of Collecting Sample WATER LEG ON TREATER
Treatment _____
Date of last acid job _____

Total Prod.	BOPD	BWPD	MCFPD

District SOUTHWESTERN
Field EUNICE SRQ SOUTH
County LEA
State NEW MEXICO
Collected by _____
Date 1-31-83 (Collected) 2-8-83 (Analyzed)
Sample No. 09978
Analyst _____ PPI _____

Description of Sample 1 PT. GREY CLOUDY WATER

CONSTITUENTS	ppm
Sodium	3990
Calcium	337
Magnesium	181
Barium	1
Strontium	
Potassium	
Iron	0
Chloride	5900
Sulfate	333
Carbonate	0
Bicarbonate	1930
TOTAL DISSOLVED SOLIDS	12672

OTHER PROPERTIES	
pH	8.0
Specific Gravity	1.0095
Resistivity ohm-mtr. @ 75° F	.608
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as $CaCO_3$, ppm	
Sulfide	PRESENT
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	20
Nitrates, ppm	
Phosphate, ppm	

REMARKS:
Commingled produced water from
State A A/C2 Well Nos. 1, 24, 30 and 59.

Johnny M Reinschmidt

REPORTED BY:
Johnny Reinschmidt
CHEMICAL ENGINEERING SECTION
Copies to:

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-7732

FILE 23-230

Operator SUN PRODUCTION 668954
Lease or Well STATE A A/C2 BATTERY#2
Formation SEVEN RIVERS QUEEN
Perfs ____ To ____ ; T.D. ____
Method of Collecting Sample WATER LEG ON TREATER
Treatment ____
Date of last acid job ____

Total Prod.	BOPD	BWPD	MCFPD

District SOUTHWESTERN
Field EUNICE SRQ SOUTH
County LEA
State NEW MEXICO
Collected by ____
Date 1-31-83 (Collected) 2-8-83 (Analyzed)
Sample No. 09976
Analyst ____ PPI ____

Description of Sample 5/6 PT. GREY CLOUDY WATER WITH A FEW PARTICLES OF BLACK PRECIPITATE

CONSTITUENTS	ppm
Sodium	15400
Calcium	777
Magnesium	824
Barium	2
Strontium	
Potassium	
Iron	0
Chloride	25800
Sulfate	1220
Carbonate	0
Bicarbonate	1370
TOTAL DISSOLVED SOLIDS	45393

OTHER PROPERTIES	
pH	7.4
Specific Gravity	1.0320
Resistivity ohm-mtr. @ 75° F	.177
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as $CaCO_3$, ppm	
Sulfide	PRESENT
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	156
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

Commingled produced waters from State A A/C 2 Well Nos. 45, 46 and 47.

Johnny M Reinschmidt

REPORTED BY:
Johnny Reinschmidt
CHEMICAL ENGINEERING SECTION
Copies to:

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-7733
FILE 23-230

Operator SUN PRODUCTION 668954
Lease or Well STATE A A/C2 BATTERY#5
Formation SEVEN RIVERS QUEEN
Perfs ____ To ____ ; T.D. ____
Method of Collecting Sample WATER LEG ON TREATER
Treatment ____
Date of last acid job ____

Total Prod.	BOPD	BWPD	MCFPD

District SOUTHWESTERN
Field EUNICE SRQ SOUTH
County LEA
State NEW MEXICO
Collected by ____
Date 1-31-83 (Collected) 2-8-83 (Analyzed)
Sample No. 09985
Analyst ____ PPI ____

Description of Sample 1 PT. LIGHT TAN SLIGHTLY CLOUDY WATER WITH SETTLED DARK PRECIPITATE

CONSTITUENTS	ppm
Sodium	2490
Calcium	339
Magnesium	157
Barium	0
Strontium	
Potassium	
Iron	0
Chloride	3880
Sulfate	353
Carbonate	0
Bicarbonate	1290
TOTAL DISSOLVED SOLIDS	8509

OTHER PROPERTIES	
pH	7.6
Specific Gravity	1.0063
Resistivity ohm-mtr. @ 75° F	.943
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as $CaCO_3$, ppm	
Sulfide	PRESENT
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	2
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

Commingled produced waters from State A A/C 2 Well Nos. 25, 28, 29 33 and 34.

Johnny M Reinschmidt

REPORTED BY:
Johnny Reinschmidt
CHEMICAL ENGINEERING SECTION
Copies to:

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-7734

FILE 23-230

Operator SUN PRODUCTION 668954
Lease or Well STATE A A/C2 BATTERY#7
Formation SEVEN RIVERS QUEEN
Perfs _____ To _____ ; T.D. _____
Method of Collecting Sample WATER LEG ON TREATER
Treatment _____
Date of last acid job _____

Total Prod.	BOPD	BWPD	MCFPD

District SOUTHWESTERN
Field EUNICE SRQ SOUTH
County LEA
State NEW MEXICO
Collected by _____
Date 1-31-83 (Collected) 2-8-83 (Analyzed)
Sample No. 09981
Analyst _____ PPI _____

Description of Sample 1 PT. LIGHT BROWN CLOUDY WATER

CONSTITUENTS	ppm
Sodium	2140
Calcium	343
Magnesium	203
Barium	51
Strontium	
Potassium	
Iron	0
Chloride	3520
Sulfate	11
Carbonate	0
Bicarbonate	1700
TOTAL DISSOLVED SOLIDS	7968

OTHER PROPERTIES	
pH	7.4
Specific Gravity	1.0061
Resistivity ohm-mtr. @ 75° F	1.05
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as $CaCO_3$, ppm	
Sulfide	PRESENT
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	2
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

Commingled produced waters from State A A/C 2 Well Nos. 31, 48 50, 52 and 59.

Johnny M Reinschmidt

REPORTED BY:
Johnny Reinschmidt
CHEMICAL ENGINEERING SECTION
Copies to:

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-7735

FILE 23-230

Operator SUN PRODUCTION 668954
Lease or Well STATE A A/C2 BATTERY#8
Formation SEVEN RIVERS QUEEN
Perfs ____ To ____ ; T.D. ____
Method of Collecting Sample WATER LEG ON TREATER
Treatment ____
Date of last acid job ____

Total Prod.	BOPD	BWPD	MCFPD

District SOUTHWESTERN
Field EUNICE SRQ SOUTH
County LEA
State NEW MEXICO
Collected by ____
Date 1-31-83 (Collected) 2-8-83 (Analyzed)
Sample No. 09975
Analyst ____ PPI ____

Description of Sample 1 PT. CLEAR YELLOW WATERWITH SMALL AMOUNT OF BLACK PRECIPITATE

CONSTITUENTS	ppm
Sodium	2430
Calcium	311
Magnesium	162
Barium	26
Strontium	
Potassium	
Iron	0
Chloride	3570
Sulfate	41
Carbonate	0
Bicarbonate	2030
TOTAL DISSOLVED SOLIDS	8570

OTHER PROPERTIES	
pH	7.5
Specific Gravity	1.0064
Resistivity ohm-mtr. @ 75° F	1.00
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as $CaCO_3$, ppm	
Sulfide	PRESENT
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	3
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

Commingled produced waters from State A A/C 2 well Nos. 3, 10, 37 and 54.

Johnny M Reinschmidt

REPORTED BY:
Johnny Reinschmidt
CHEMICAL ENGINEERING SECTION
Copies to:

XII. Application to Inject - State "A" A/C 2 #65, 67, 69, & 71

I, Bob Walker, 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 source of drinking water.

Bob Walker

Bob Walker
Area Geologist
Sun Exploration & Production Co.

August 12, 1983
Date

III. Well Data - Attached Well Sketch

A. 1)Lease Name: State "A" A/C 2
Well Nos. & locations:

#65 - Unit letter E, Sec. 9, T-22-S, R-36-E
1345' FNL & 25' FWL

#67 - Unit letter K. Sec. 9, T-22-S, R-36-E
2615' FSL & 1345' FWL

#69 - Unit letter I, Sec. 8, T-22-S, R-36-E
2615' FSL & 1295' FEL

#71 - Unit letter M, Sec. 9, T-22-S, R-36-E
1295' FSL & 25' FWL

2)Casing Data
8-5/8", 24#, 550' cmt. w/375 sxs, top of cement-surface, hole size 12¼.
5½", 14#, 3900', cmt w/950 sxs, top of cement Surface , hole size 7-7/8.

3) Tubing Data
2-3/8", 4.7#, 3700' (cmt. lined)

4) Packer Data Baker AD-1 3700'±

B. 1)Injection formation - Seven Rivers, Queen.
2)Injection Interval 3300± to 4000±, perfs.
3)The wells are being drilled for injection.
4)There has not been any sealed off perfs since these are new wells.
5)Higher Depth - Yates at 3150'±
Lower Depth - Grayburg at 4000 ±

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL	FIELD	DATE
State "A" A/C 2 Wells 65, 67, 69 & 71	Eunice 7 Rivers Queen So.	

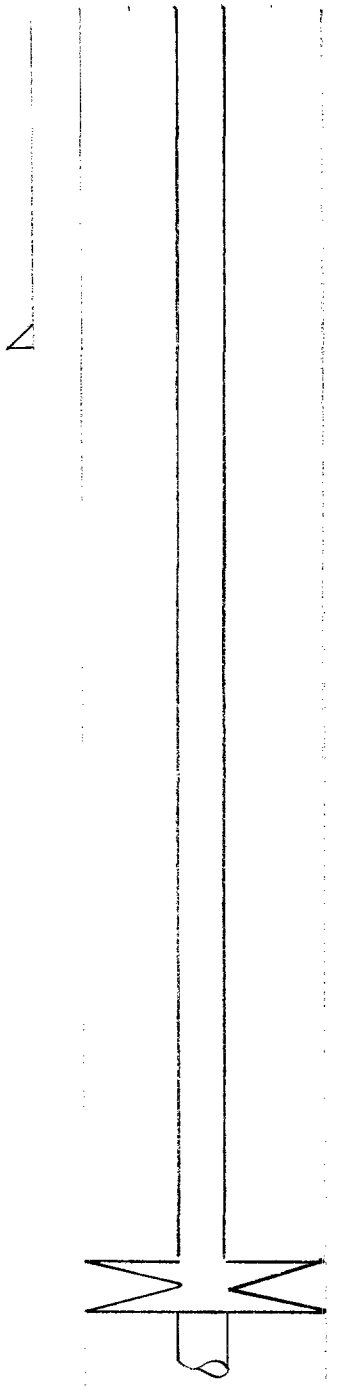
☐ PRESENT COMPLETION ☑ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

$8\frac{5}{8}$ 24# 550'
w/ 375 Sxs
cmt. circ. to Surf.

$5\frac{1}{2}$", 14# 3900'
w/ 950 Sxs
cmt. circ. to Surf.

Via telephone Conversation
@ 3750' - 3960 (Queen)
injection interval
for water



DATA ON THIS COMPLETION

Tubing (cmt. lined)
$2\frac{3}{8}$" 4.7#
3700'

Baker Packer set at
3700' ±

Proposed Perforated Interval
3300 ± to 4000 ±

TD 4000

AFFIDAVIT OF PUBLICATION

State of New Mexico,

County of Lea.

1, ____________________

ROBERR L. SUMMERS

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

of ____________________

ONE ~~weeks.~~ day

Beginning with the issue dated

AUGUST 12, 19 83

and ending with the issue dated

AUGUST 12, 19 83

Robert L Summers

Publisher.

Sworn and subscribed to before

me this 12 day of

August, 19 83

[illegible]

Notary Public.

My Commission expires

2-17, 19 85

(Seal)

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

LEGAL NOTICE

August 12, 1983

Sun Exploration and Production Company, P.O. Box 1861, Midland, [illegible] 79702 [illegible] Schroeder, 915-[illegible]) has applied to the [illegible] Oil Conservation Division for approval to inject [illegible] into a formation which is productive of oil or gas. The proposed injecting [illegible] are the State "A" A/C 2 lease, wells #65, 67, [illegible] located in Sections [illegible] & [illegible], R-36E, [illegible] New Mexico. [illegible] be injected into [illegible] Queen zone in [illegible] surface depth interval from 3300± to [illegible] with [illegible] expected maximum [illegible] rate of 600 [illegible] at the maximum [illegible].

Interested [illegible] must file [illegible] for hearing [illegible] Oil Conservation [illegible] P.O. Box 2088, [illegible] New Mexico 87501.

Sun Production Division
Southwestern District

August 16, 1983

Sun Exploration and Production Company
901 W Wall
Post Office Box 1861
Midland Texas 79702
915 685 0300

Offset Operators
(List Attached)

RE: Application to inject water
State "A" A/C 2
Wells # 65, 67, 69 & 71
Sec. 8 & 9, T-22-S, R-36-E
Lea County, New Mexico

Gentlemen:

Sun Exploration & Production Company is requesting for administrative approval to inject water into the referenced wells. The New Mexico Oil Conservation request that the offset operators be notified of the application. Attached for your records is a copy of the applications. If you need additional information, please contact Mel Schroeder, (915) 688-0435.

Very truly yours,

Dee Ann Kemp
Senior Accounting Assistant

DAK:sm

Attachments

Copy of application mailed to offset operators by certified mail 8-17-83.
Dee Ann Kemp

Offset Operators
State "A" A/C 2

Arco Oil and Gas Company
P.O. Box 1610
Midland, Texas 79702

Cities Service Company
Midland Nat'l Bank Tower
Box 1919
Midland, Texas 79702

Continental Emsco Company
P.O. Box 519
Hobbs, New Mexico 88240

Campbell and Hendrick
Box 401
Midland, Texas 79701

Getty Oil Company
Box 730
Midland, Texas 79701

Gulf Oil Exploration and Production Co.
P.O. Box 1150
Gulf Bldg.
Midland, Texas 79702

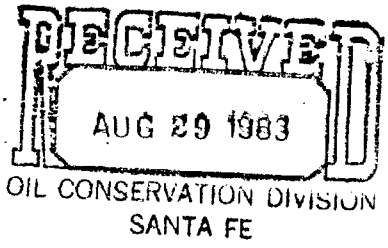
C.E. Long
Box 1943
Midland, Texas 79702

Marathon Oil Company
125 W. Missouri Street
Midland, Texas 79702

Martindale Petroleum Corp.
Box 2403
Hobbs, New Mexico 88241-2403

Wiser Oil Company
Box 192
Sisterville, West Virginia 26175

OIL CONSERVATION DIVISION
DISTRICT I



OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

DATE August 24, 1983

RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed NSP _____
Proposed SWD _____
Proposed WFX X
Proposed PMX _____

Gentlemen:

I have examined the application for the:

Sun Exploration & Prod. Co. State "A" A/C 2 #65, #67, #69, & #71 8 & 9-22-36
Operator Lease and Well No. Unit, S - T - R

and my recommendations are as follows:

O.K.-----J.S.

Yours very truly,

/mc

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

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

December 8, 1983

APPLICATION OF SUN EXPLORATION AND PRODUCTION COMPANY TO EXPAND ITS WATERFLOOD PROJECT IN THE SOUTH EUNICE SEVEN RIVERS-QUEEN POOL IN LEA COUNTY, NEW MEXICO

Amended
ORDER No. WFX-518

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-3200, Sun Exploration and Production Company has made application to the Division on August 19, 1983, for permission to expand its Sun State "A" Account 2 Waterflood Project in the South Eunice Seven Rivers-Queen Pool in Lea County, New Mexico.

NOW, on this 5th day of December, 1983, 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 this is an amendment to include the Seven Rivers formation as well as the Queen formation.

7. That the application should be approved.

IT IS THEREFORE ORDERED:

That the applicant, Sun Exploration and Production Company, be and the same is hereby authorized to inject water into the Seven Rivers and Queen formations through plastic-lined tubing set in a packer at approximately 3200 feet in the following described well for purposes of secondary recovery to wit:

State "A" Account 2 Well No. 65, Unit E,
Sec. 9, T-22-S, R-36-E, Lea County, NM

State "A" Account 2 Well No. 67, Unit K,
Sec. 9, T-22-S, R-36-E, Lea County, NM

State "A" Account 2 Well No. 69, Unit I,
Sec. 8, T-22-S, R-36-E, Lea County, NM

State "A" Account 2 Well No. 71, Unit M,
Sec. 9, T-22-S, R-36-E, Lea County, NM

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection intervals 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 wells or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 660 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 Seven Rivers and Queen formations. 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 wells.

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

That the subject wells shall be governed by all provisions of Division Order No. R-3200 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 ~~DIV~~ISION

JOE D. RAMEY,
Division Director

S E A L

JDR/GQ/dp