

Florence)

PLEASE SET FOR
HEARING. AMEND

ORIGINAL ORDER

R-7313-A (Disposal
well) to include
another zone
simultaneously.

Thanks,
Gilbert
Z

NOTE:

① Well authorized to inject into Yates formation (SWD) via (R order)

② Applicant wants to extend disposal zone to Seven Rivers administratively.

Seven Rivers productive of oil & gas within 2 miles

DPG

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no *Case 8333*
- II. Operator: Sun Exploration and Production Co.
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? ☐ yes ☐ no R-7313-A
If yes, give the Division order number authorizing the project
This well has approval to dispose of water into the Yates formation.
- 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: Associate Acct.
Signature: Dee Ann Kemp Date: 7-17-84
- * 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.

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.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

Original
File Copy

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7964
Order No. R-7313-A

APPLICATION OF SUN EXPLORATION AND
PRODUCTION COMPANY FOR AMENDMENT TO
DIVISION ORDER NO. R-7313, LEA
COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on September 28, 1983, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 5th day of October, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sun Exploration and Production Company, seeks an amendment to Division Order No. R-7313, dated July 1, 1983, which authorized its Jennings "B" Federal Well No. 2 located in the SE/4 SW/4 (Unit N) of Section 15, Township 19 South, Range 32 East, NMPM, Northeast Lusk Field, Lea County, New Mexico, to be used as a salt water disposal well.

(3) That the applicant seeks to change the injection interval in said well from approximately 3012 feet to 3018 feet as previously authorized to approximately 2986 feet to 3004 feet and from approximately 3050 feet to 3060 feet.

(4) That authorization of the additional perforated interval for disposal purposes will allow the applicant to dispose of greater volumes of salt water into said well at lower pressures, will not impair correlative rights nor cause waste and should be approved.

(5) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(6) That the operator should 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.

(7) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That Order No. (1) on Pages 2 and 3 of Division Order No. R-7313, dated July 1, 1983, is hereby amended to read in its entirety as follows:

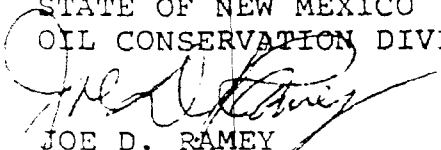
"(1) That the applicant, Sun Exploration and Production Company, is hereby authorized to utilize its Jennings "B" Federal Well No. 2, located in Unit N of Section 15, Township 19 South, Range 32 East, NMPM, Northeast Lusk Field, Lea County, New Mexico, to dispose of produced salt water into the Yates formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 2950 feet, with injection into the perforated interval from approximately 2986 feet to 3004 feet and from approximately 3050 feet to 3060 feet.

PROVIDED HOWEVER, that the tubing shall be plastic or cement-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer."

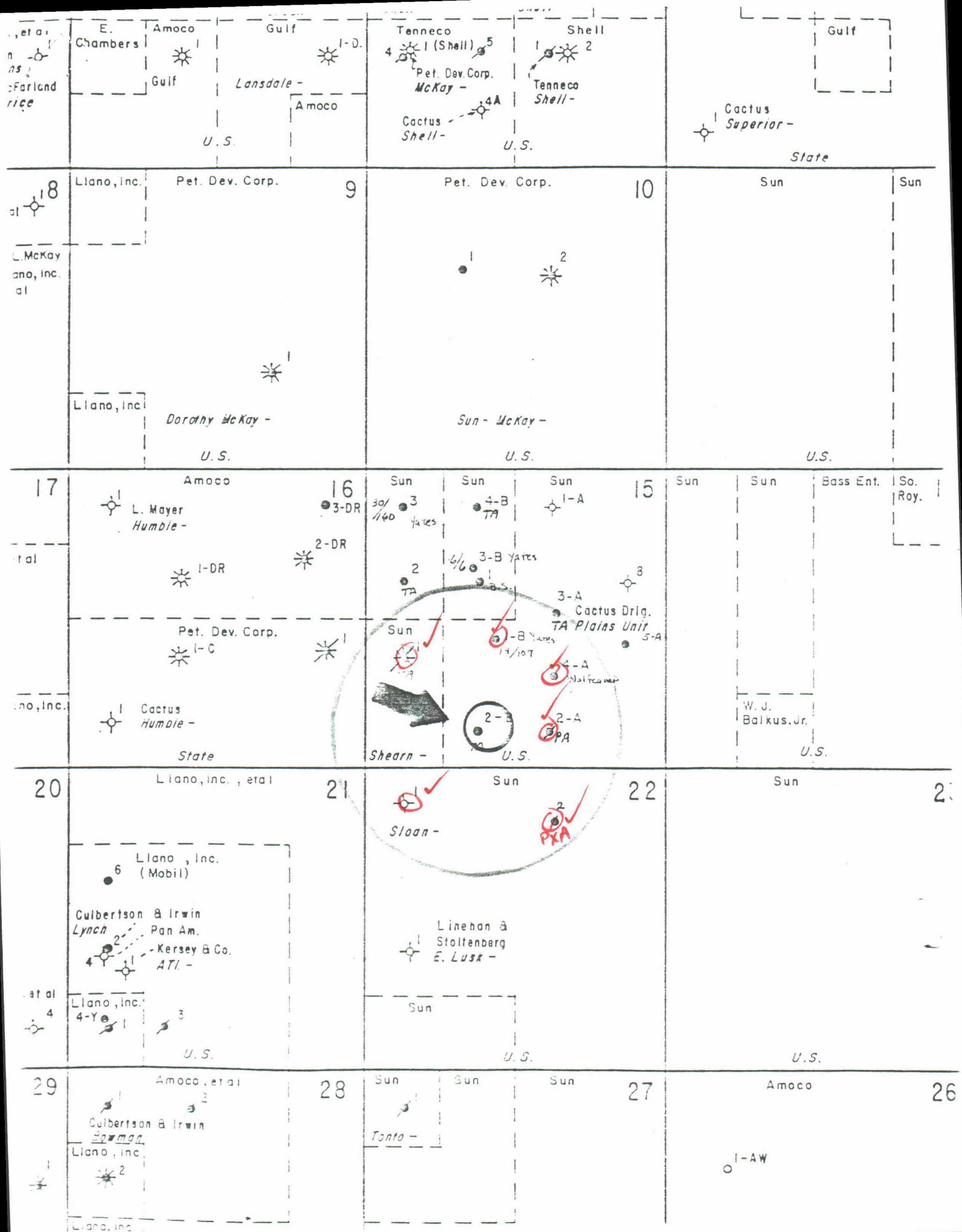
(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

S E A L
fd/



SHEARN FEDERAL COM. #1

Location: 660' FWL & 1980' FSL. Unit L, Sec. 15, T-19-S, R-32-E,
Lea County, New Mexico. Lea County Wildcat Field

Elevs: GL 3617, KB 3638

Spud Date: 12-7-71

Completion date: 6-13-72

TD: 14,330'

PBTD: 13,030

Csg. description:

Surface: 17½" hole. 13-3/8", 61# 54.5#, 48# csg. @ 2683, cmtd
w/1000 sxs. cmt. circl'd.

Intermediate & Production casings:

9-5/8", 40# 43.5#, casing @ 7350'. Cmt'd w/775 sxs. TOC
@ 4100 according to temp. survey dated 12-30-71.

7-5/8", 33#, 29 # liner @ 13,342. Top liner @ 7040' cmt'd
w/900 sxs. TOC @ 13,100.

Initial Completion:

Perfd 1 hole @ 12,231-232,-233,-234,-235,-236,-237,-238,-239.
(9holes total)

Fraced w/10,000 gals. gelled kerosene and 3000# 20/40 SD.

Max TP-9600# Min TP-9000# FP-9300#. MIR-5BPM. AIR 4½ BPM.

ISIP-8100#. After 10 mins STP-7800#, After 30 mins. SIP-7650#.

Tested 4-26-72 24 hrs. F 81 BO, OBW. 18/64 chk. FTP-300# GOR 6451/1.

Reac'd w/1000 gals. 15% NE acid per 9000 gals 20% retarded acid.

Max P - 7900#. Min P-6200#. FP-6500#. ISIP-4700#. After 5 mins.

SIP-4200#. After 30 mins SIP-3250#. MIR - 4.25 BPM. AIR-3 BPM.

Initial Potential: Tested 24 hrs. 6-13-72 F 140 BO, 0 BW. 699 MCF. 20/64 chk.
FTP-500#.

WO History: None

WO#1
3-7-78
thru

Purpose: Complete in Delaware.

CISP set @ 12096'. Capped w/cmt 12096-12061.

CISP set @ 10596'. Capped w/cmt 10596-10561.

CISP set @ 9800'. Capped w/cmt 9800- 9765.

50 sx cmt plug set @ 7082-6920. Perfd @ 6544,6545, 6546, (1 SPF)

Ac'd w/500 gals 15% NEHCL, BOP-3000#, Max P-3000#, Avg. P-2200#.

FP-2100#. ISD-1700#. After 5 mins SIP 1700#. Swabbed 20 hrs.

8 BLAW, 74 BW no show of oil or gas.

CIBP set @ 6500'. Perfd @ 4974-86. (1JSPF) Ac'd w/1250 gals. 15%

NEHCL, 21 RCNBS, BOP-2000, Max P-2000#. Avg. P-1850. FP-1950.

ISD-1600#. After 20 mins SIP-1400#. AIR 3 BPM. Swabbed 5 BLAW,

NS oil or gas.

Production before: TA'd

Production after : TA'd

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Shear Federal #1

FIELD

Wildcat

DATE

2-4-83

☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

17 1/2" hole. 13 3/8" 61# 54.5#
48" csg @ 2683. Cmt'd
w/ 1000 sxs. Cmt. circld.

9 5/8" 40# 43.5# csg @
7350. Cmt'd w/ 775 sxs.
TOC @ 4100' T's 12-30-71.

7 5/8" 33# 29# Liner csg
@ 13,342. Cmt'd w/ 900
sxs. TOC @ 13,100'

GL-3617

KB-3638

2683

4100

6500

6920

7040

7082

7350

9765

9800

10561

10596

12061

12096

13,030

13100

13342

4974

4986

6544

6545

6546

12231

12239

DATA ON THIS COMPLETION

Present well status: TA'd

Perf @ 4974-86 (13 SPF)
(13 holes)

CIBP @ 6500'

Perf'd @ 6544; 6545; 6546
(3 holes)

50 sxs cmt plug @ 6920'-
7082'

CIBP @ 12096' w/ cmt cap 35'

CIBP @ 10596' w/ cmt cap 35'

CIBP @ 12096' w/ cmt cap 35'

Perf'd @ 12,231; 12,232;
12,233; 12,234; 12,235; 12,
236; 12,237; 12,238 (9 holes)

PBTD: 13,030

TD: 14,330

SLOAN FEDERAL #1

Loc: 660' FNL & 660' FWL Unit D. Sec. 22, T-19-S, R-32-E, Lea County,
New Mexico. East Lusk Field.

Elevs. GR 3612

Spud date: 9-26-75

Completion date: 11-11-75

TD: 10,915

PBTD: 2949

Csg. description:

Surface: 17½" hole. 13-3/8", 48#, 68#, H&K, 8 rd csg @ 375',
cmtd w/400 sxs. Cmt. circld.

Production & Intermediate: 12¼" hole. 9-5/8", 36#, K-55, L.T.C. & S.T.C.
csg. @ 4100'. Cmtd w/2700 sxs. TOC @ 70' according to temp
survey.

8-3/4" hole. 7", 23#, 26#, 29#, K-55, N-80 liner. @ 10,915.
Top of liner @ 3790. Cmtd w/1800 sxs. Sqzd top of liner w/
200 sxs.

Initial Completion:

Perf'd Wolfcamp @ 10,678-10,815 (14 holes). Aczd w/8000 gals 15%
NEHCL. Swbd 3 days. Rec. trace oil.
Set CIBP @ 10,610. Perf'd bone spring @ 10,262-264,-266,-296,-298,
-300, -302, -304,-306 (9 holes)
Aczd w/1600 gals 15% NEHCL.
Swbd. 2 days. Rec. tr. oil.
Set RBP @ 10,190. Perf'd w/10,065,-67,-69,-71,-73. (5 holes).
Aczd w/500 gals 15% NEHCL. Swbd 2 days. Rec. tr oil.
Swbd 2 days. Rec. tr oil.
Fracd w/1000 gals. F-75 acid, 15,000 gals. KIX w/9800# 100 mesh
SD & 7000# 20/40 SD.
Tested well. Well declined from 60/80 to 10/22 in 45 days. Set
CIBP @ 10,035. Perf'd @ 7959, -61, -67,-69,-73,-76, 8009, -16,-27,
-29,-55,-88, 8105,-11,-14,-25,-27,-36,-38,-73,-75.
Aczd w/3000 gals. 15% NEHCL.
Swbd 2 days. Rec. SL show of oil. Well TA'd.

WO History:

WO #1 Purpose P&A well.
4-23-78 Dump 10 sxs cmt on CIBP @ 10,035.
thru Dump 6 sxs cmt on CIBP @ 7900'
4-26-78 70 sx plug @ 3700-3843.
35 sx plug @ 950-1080.
30 sx plug @ Surf - 90.

Sloan Federal #1

Page 2

WO #2
9-30-80
thru
10-30-80

Purpose: Re-enter P & A well & test Yates.
Drld. out cmt plugs to 3100.
Set CIBP @ 3050. Perfd @ 2955-65. Aczd w/1000 gals. 15%
spearhead acid. Fracd perfs w/5000 gals. gelled 3% acid and
5000 gals CO₂ 12,000# 20-40 SD.
Swbd. 3 days. NS of oil.

Set RBP @ 2949. Perfd Yates @ 2932-42. (11 holes). Aczd
w/1000 gals CO₂ and 24,000# 20-40 SD. Two state frac w/GRS
block between stages.
Swbd. 2 days. NS of oil, 16 BLAW, 130 BW.
Sqzd perfs @ 2932-65 w/150 sxs cmt.

Perfd @ 2824-34 (11 holes)
Aczd perfs w/1000 gals 15% Spearhead acid, 16 RCNBS. BDP-2100#.
Max P-2200# Min P-1800#. Avg. P-1900#. FP-2200# ISD-1600#.
After 15 mins. 1350#. Fraced w/3850 gals 15% gelled KCL wtr.
Foamed to 65% quality w/186000 SCF Nitrogen, 8400# 20-40 SD.
BDP-0, Max P-3200#. Min P-3000#. Avg. P-3100#, FP-3200#.
ISIP-2400#. After 15 mins. SIP-2250#. After 1½ hrs. SIP-
2000#. AIR-10 BPM. F 6 BLAW, no oil in 14 hrs. 10-29-80.
TA'd well.

Future Plans- Plans are to plug well within the next month.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Shaw Federal #1

FIELD

East Lusk - Wolfcamp

DATE

2-4-83

☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

17 1/2" hole, 13 3/8" 48# 62#
H.K. Brd. csg @ 375'
Cmt'd w/ 400 sxs. Cmt.
Grd.

12 1/4" hole, 9 5/8" 36# k-55,
L.T.C + S.T.C. csg @ 4100'
Cmt'd w/ 2700 sxs. TAC @
70' TS.

8 3/4" hole, 7" 23# 26#
29# k-55, N-20 LINER
@ 10,915' Top of Liner
@ 3790' Cmt'd w/ 1200
sxs. Sg'd top of Liner
w/ 200 sxs.

DATA ON THIS COMPLETION

Present Well status: TA

Perfs @ 2824-2834 (11 holes)

Perfs @ 2932-2965
sg'd w/ 150 sxs. cmt.
200 @ 2949

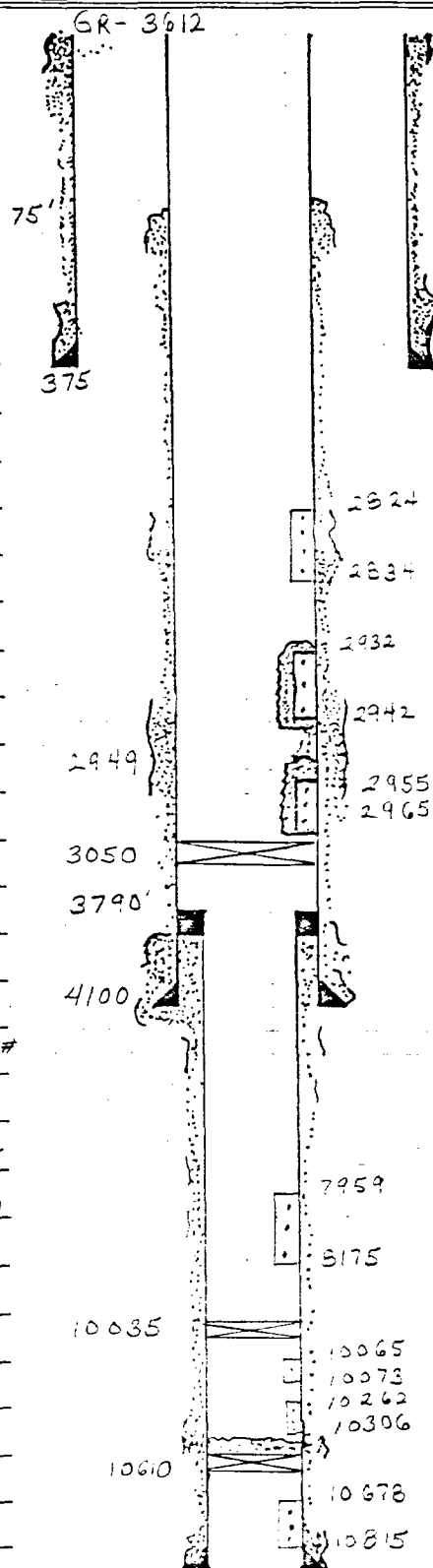
CIRP @ 3050.

Perfs @ 7959-8175 (21 holes)

CIRP @ 10,035.

Perfs @ 10 065 - 10 073 (1 hole)
Perfs @ 10 262 - 10 306 (4
holes)

Perfs @ 10 678-10 815 (14 holes)



PETD: 2949

TO: 10,915

JENNINGS "A" FEDERAL #4

Loc: 1650' FSL, 1980' FEL, Sec. 15, T-19-S, R-32-E, Lea County, New Mexico
Northeast Lusk Field

Elev: GL - 3624 KB - 3637

Casing: 13-3/8", 48-54.6# H, @ 454', cmt'd w/375 sx, circ 50 sx 8-5/8",
24-32#, @ 4400' (tool 990') 1st stage cmt'd w/2500 sx, 2nd stage
cmt'd w/400 sx, circ 125 sx. (11" hole) 5½", 15.5-17#, @ 10,900 FC-
10877, DV tool-7206, 1st stage cmt'd w/675 sx, circ 50 sx, 2nd stage
cmt'd w/600 sx. (7-7/8" hole).

Spudded 10-20-82

Completed:

TD-10,900 PBTD-

TOC-6000'

12/15/82 Perf Wolfcamp 10818-828, 2 JSPF, 21 holes. Spot 125 gals.
15% HCL. Perfs broke down @ 2500# @ 4 BPM.

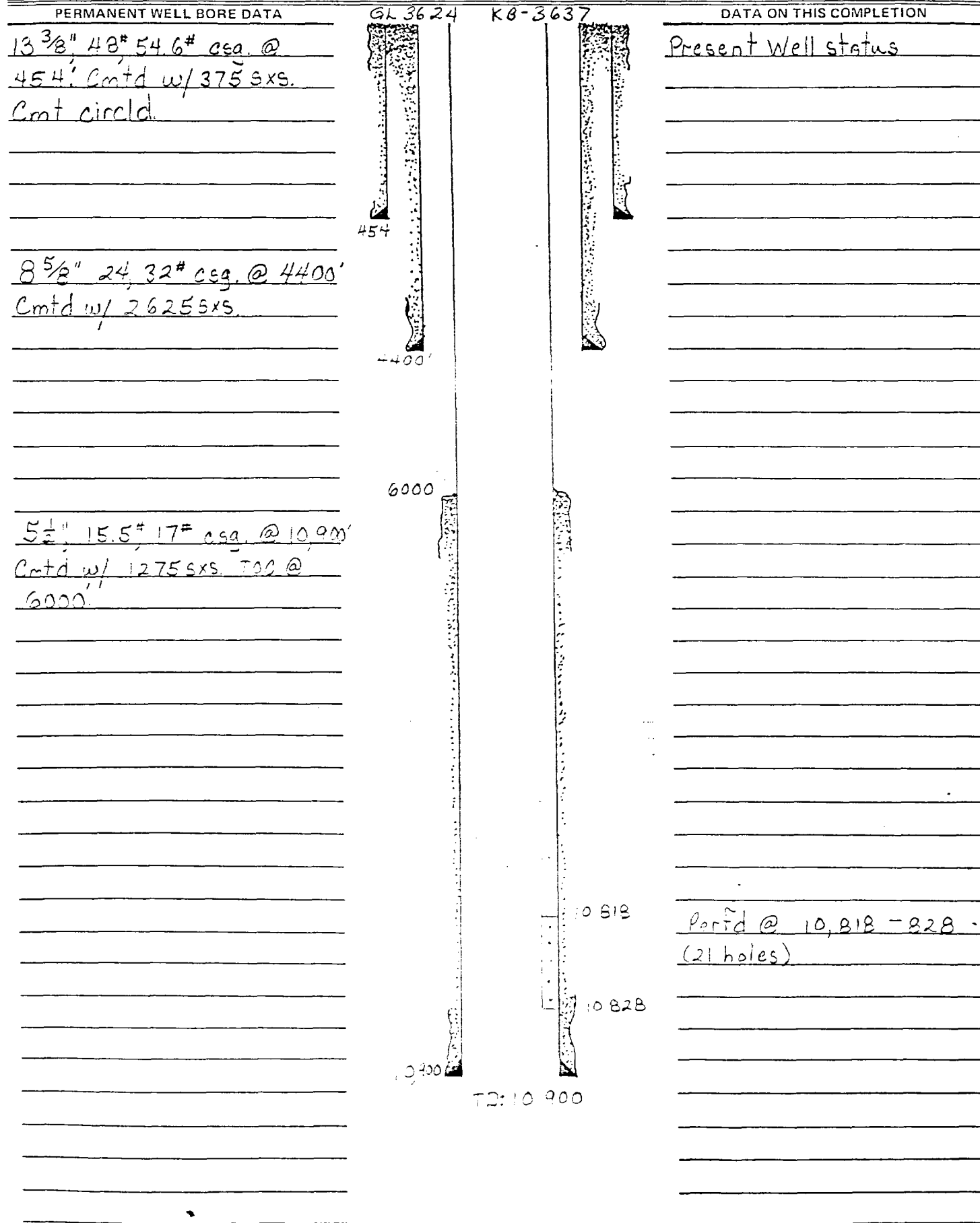
Acidized w/875 gals 15% NEHCL. BDP-0, MX 2500 #, MN-
2300#, Avg. - 2400#, ISI - VAC. 5 BPM. Well started flowing.

12/18/82 IPF 339 0, 36 BW, 13/64" CHK, TP 1622-1480.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL Jennings "A" Federal #4	FIELD Northeast Lusk	DATE 2-4-83
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<input checked="" type="checkbox"/> PRESENT COMPLETION	<input type="checkbox"/> SUGGESTED COMPLETION
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JENNINGS "A" FEDERAL #2

Loc: 660' FSL & 1980' FEL. Unit 0, Sec. 15, T-19-S, R-32-E, Lea County,
New Mexico. Northeast Lusk Field.

Elev: GR 3619

Spud date;

Completion date:

TD: 3100'

Casing description:

Surface: 12 $\frac{1}{4}$ " hole. 8-5/8", 24#, K, S.T.C. csg @ 418'. Cmt'd w/375 sxs.
Cmt circld.

Initial Completion: P&A. Spotted 100 sxs cmt # 3100-2800, 130 sx plug
@ 1200-800, 65 sx plug @ 500-300, 10 sx plug @ surface.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Jennings Federal #2

FIELD

Northeast Lusk

DATE

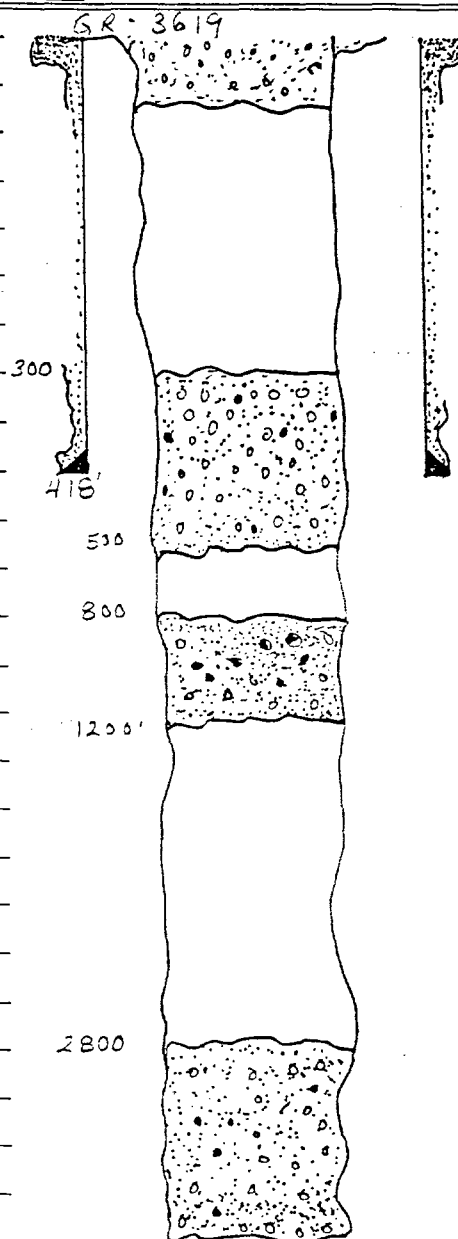
2-4-83

☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

12 1/4" hole. 8 5/8" 24# K,
S.T.C. csg @ 418. Cmt'd
w/ 375 sxs. Cmt circld.

7 7/8" Open hole.



TD: 3100

DATA ON THIS COMPLETION

Present well status: P+A
10 sxs cmt plug @ surface

65 sxs cmt plug @ 300-500.

130 sxs cmt plug @ 500-1200

100 sxs cmt. plug @ 2800-3100.

JENNINGS FEDERAL "B" - 1

Loc: 2495' FSL, 2290' FWL, Sec. 15, T-19-S, R-32-E, Lea County, New Mexico
Northeast Lusk Field

Elev: 3629 GR

Casing: 8-5/8" 24# @ 437', cmtd w/350 sx, circ 65 sx. (12 1/4" hole)
5 1/2", 14#, @ 3400', FC-3368, cmtd w/760 sx, circ. 115 sx.

Spudded: 7-29-80

Completion date: 8-21-80

TD - 3400'

PBTD: 3258

8/21/80 Seven Rivers 3331-37, 7 holes. Spotted 3 bbls. acid, washed 3/4 hr. Acidized w/1000 gals 15% NEFEMCH, BDP-2300, MX-5000, MN-1000, ISI-VAC, 4-5 BPM. Balled out to 5000# w/700 gals in form. Swab 7 hrs rec 118 BW, FL 750-1200, chlorides - 20,000 ppm. Set CIBP @ 3300' w/15' cmt cap.

8/24/80 Perf Yates 2958-62, 5 holes, spotted 1 bbl MCH, BDP-2600, MX 3100, ISI 920, AIR-3 BPM. Acid w/ 800 Gals MCA. Frac w/3000 gals (wtr frac-60), 3000 gals CO₂ & 4500# 20/40 SD. BDP 3100, MX 4800, MN 1390, ISI-1390, AIR 7-8 BPM. Swab 3 hrs, Rec. 37 BO, 8BLW, FL 300-1500, FE 4 BPH.

9/16/80 IPP 148 BO, OBW, 8MCF.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL Jennings Federal "B" #1	FIELD Northeast Lusk	DATE 2-2-83
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☒ PRESENT COMPLETION

☐ SUGGESTED COMPLETION

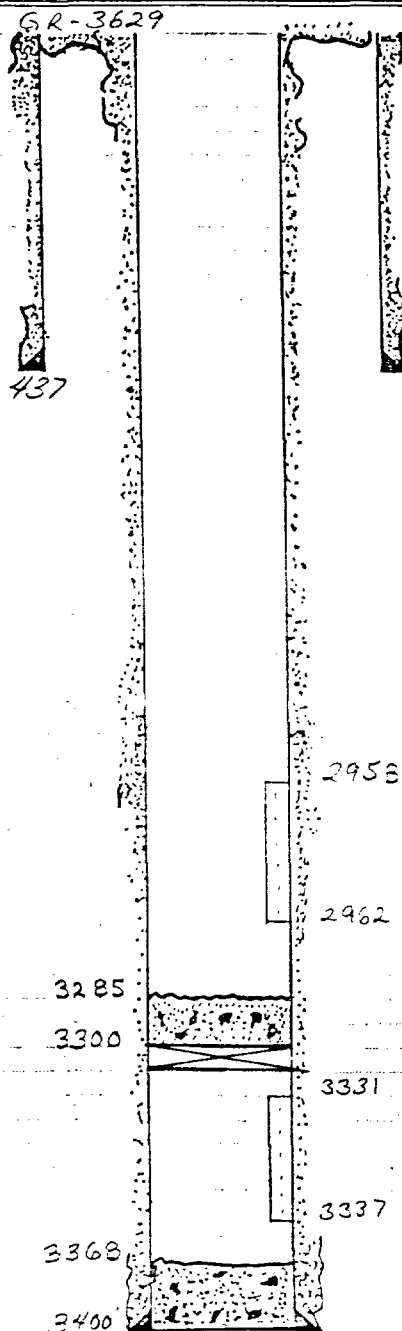
PERMANENT WELL BORE DATA

12 1/4 hole. 8 5/8" 24# csq.
@ 437 Cmtd w/ 350 sxs.
Cmt. circld.

5 1/2" 12# csq. @ 3400

DATA ON THIS COMPLETION

Present Well status:



44-tes. perf'd @ 2953, 2959,
2960, 2961, 2962.

CIBP-@ 3300' w/ 15' cmt
cap.

9872-3285

TD - 3400

JENNINGS "A" FEDERAL #3

Loc: 1880' FEL & 2500' FNL. Unit G. Sec. 15, T-19-S, R-32-E,
Lea County, New Mexico. Northeast Lusk Yates Pool.

Elevations: 3631 GR.

Spud Date: 12-16-81

Completion date: 12-23-81

Original TD: 3002

Original PBDT: 3001

TD: 3014

Csg. Description:

Surface: 12 $\frac{1}{4}$ " hole. 8-5/8", 24#, K csg. @ 443' cmtd w/375 sxs.
cmt. circld.

Production: 7-7/8" hole. 5 $\frac{1}{2}$ ", 24#, K csg @ 3002', cmtd w/535 sxs.
Cmt cricld to surface.

Initial Completion:

Perf'd Yates w/2JSPF @ 2994-2999 (11 holes) Aczd w/
1000 gals. 15% NEHCL using 22 RCNBS BDP -2900#. Max
P-2900#. Min P-1600# Avg P-1800#. FP-3000#. ISIP -
1000#. After 15 mins. SIP-770#. AIR - 5BPM.

Reaczd w/1000 gals. 15% NEHCL using 22 RCNBS. BDP-
1600#. Max P-3200#. Min P-1700#. Avg. P-1800#.
FP-3000#. ISIP - 1000#. After 15 mins. SIP-770#.
AIR-5 BPM.

Fraced Yates w/6000 gals. (3000 gals. Wtr. Frac-60,
3000 gals. of CO₂, 4500# 20/40 SD).
BDP - 1000#. Max P-3500#. Min P-3000#, Avg. P-3200#.
FP-2600#. ISIP - 1600#. After 15 mins. SIP - 1130.
AIR - 8BPM. Tested 24 hrs. 2-10-82. P O B0, 13 BLW.

Refraced w/14000 gals (7000 gals wtr. Frac - 60, 7000
gals of CO₂ w/11,000# 20/40 SD)
BDP - 2700#, Max P-3520, Min P-2600#. Avg. P-3000#
FP-3400#. ISIP -1850#. After 15 min SIP - 1620#,
AIR - 10 BPM. Tested 24 hrs, 2-24-82. OBO, 2 BW.

Sqzd perf's @ 2994-2999 w/200 sxs. of class "C" cement.

Drld new hole (OH) from 3002 - 3014.
Aczd OH w/1000 gals 15% NEHCL. BDP -300#. Max P-1900#,
Min P-1600#. Avg P-1800#. FP-1900#. ISIP-1400#. After
15 mins. SIP -600#. AIR 3 $\frac{1}{2}$ BPM.

Fraced OH w/14000 gals. (7000 gals. gelled 2% KCL, 7000 gals.
of CO₂ w/11000# 20/40 SD.) BDP-300#. Max P-3150#. Min P-3000#,
Avg P-3100#. FP-3100#. ISIP-1600#. After 15 mins. 1140#.
AIR-12 BPM. Tested 24 hrs. 4-8-82. P Trace oil, 35 BW.

Initial Potential: Well TA'd.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

FIELD

DATE

Sennings "A" Federal #3

Northeast Lusk Yates

2-2-83

☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

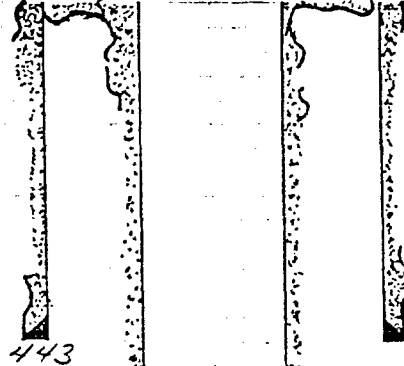
PERMANENT WELL BORE DATA

DATA ON THIS COMPLETION

12 $\frac{1}{4}$ " hole. 8 $\frac{5}{8}$ " 24"
K csg. @ 44 $\frac{1}{2}$ Cmtd
w/ 375 sxs. Cmt.
circld

7 $\frac{7}{8}$ " hole. 5 $\frac{1}{2}$ " 24" K
csg. @ 3002' Cmtd
w/ 535 sxs. Cmt.
circld to surf.

GR-3631



Present status: TA

PorFs. 2994-2999 sqzd
w/ 200 sxs. Class "C"
Cement.

3002

3014

TD 3014

Sloan Federal #2
History

Loc: 990' FNL, 1980' FEL, Sec 22, T-19-S, R-32-E, Lea County, N.M.

Elev: GL-3609 KB-3629

Casing: 13-3/8", 48# @ 450', cmt'd w/400 sx, circ 100 sx (17½" hole)
8-5/8", 24 & 32# @ 4107, cmt'd 1st stage-2165 sx, circ 91
sx, 2nd stage - 400 sx, circ 175 sx (11" hole)
5-1/2" 15.5 & 17# @ 11,000', cmt'd w/450 sx, TOC-9050', TS
(7-7/8" hole)

Spudded: 9-17-83

TD-11,000' PBD-10,954'

11-9-83 Perf'd Set I Wolfcamp 10,920-30, 2 SPF
Washed perfs w/3 bbls 15% NEHCL. Spotted 875 gals to
pkr. Acidized w/total of 1000 gals 15% NEHCL, BDP-4000, MX-
5000, Avg-4900, FP-4950, ISI-4900, 1.5 BPM.
Swab last 2 hrs. rec tr oil, 2 BLAW, FL 10400-10,750,
FE-1 BPH.

11-12-83 Set 5½" CIBP @ 10910, no cmt on top.
Perf Set II 10874-94, 2 SPF, 41 holes.
Spot 4 bbls 15% NEHCL, washed for 1 hr., spotted 1800
gals to pkr, displaced acid, BDP-3000, MX-5000, Avg-4800,
FP-4900, ISI-4780, 1 BPM. 6 Hrs. swabbed 9½ BO, 9 BLAW,
FL 7800-10,700, FE 1 BPH, 20% oil cut.

Reacidized 10874-94 w/5000 gals 15% NEHCL, BDP-3000, MX-
7200, Avg-6950, FP-7200, ISI-5300, 6 BPM.
Last 2 hrs. swabbed 4 BO, 26 BLAW, FL 5200-7800, fair gas
blow.

11-22-83 Plug back w/sd from 10910-10861. Perf'd Set III 10820-
42, 2 SPF, 45 holes. Spot 3 bbls 15% NEHCL, washed for
1 hr., spotted 2000 gals to pkr, could not press annulus.
Rev. out 2150 gals acid.
Reacidized w/2000 gals 15% NEHCL, BDP-2000, MX-5000, Avg-
4600, FP-5000, ISI-4900

12-1-83 Cleaned out sand to CIBP @ 10910.
Acid-fraced perfs 10820-42 & 10874-94 w/16,000 gals 20%
NEFEHCL, 16000 gals Versagel 1500 in two stages, using
600# GRS & 40 ball sealers, BDP-6400, MX-7000, Avg-6700,
FP-6410, ISI-5250, 7 BPM. (Press incr 6450-6900). Swab
7½ hrs. rec 7 BO, 12 BLAW, FL 9200-10,500, No FE. Swab
4 hrs. rec 1½ BO, 7 BLAW, FL 10,000-10,500, no FE. RR
-655 BLAW.

Sloan Federal #2 Well History

- 3-10-83 RIH w/5½" RTTS pkr w/Otis 'RN' nipple on 2-7/8", P-105
7.9# WS, SN 10712, pkr 10713.
Ran Base GR-Temp Log.
Howco frac perfs 10820-42 & 10874-94 w/35,000 gals Versagel
1500 & 14,000# 20/40 & 14,500# 20/40 Interprop, BDP-8380,
MX-8700, Min-8520, Avg-8600, FP-9200, ISI-5900, AIR 16
BPM.
After frac survey indicated frac from 10814-894.
- 3-17-83 6 Hrs. swab 5 B0, 18 BLW, FL 8800-10700, FE 2 BPH, tag
fill @ 10906 (4'). In 2 hrs. swab 0 B0, 24 BLW, FL 3500-
7700. -527 BLW.
Well SI. Plan to plug and abandon.
- 5-4-84 P&A: Spotted 50 sk cmt plug from 10,750-10,310
Cut off 5½" csg @ 7400', LD 180 jts 5½" csg. Spotted
50 sx from 7470-7253 in and out of csg stub.
Spotted 50 sx from 4 54-3977, tagged plug at 4084, spotted
additional 10 sx 4084-50.
Spotted 40 sx from 2635-2489
Spotted 40 sx from 950-804
Spotted 15 sx at surface
Well P&A'd

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Sloan Federal #2

FIELD

East Lusk Wolfcamp

DATE

12/5/83



PRESENT COMPLETION

SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

DATA ON THIS COMPLETION

GL - 3609.8 KB - 3629

50' cmt plug at surface.

13 3/8" @ 450' cmt d w/ 400sx,
circ 100sx. (17 1/2" hole)

100' cmt plug 950' - 804'

8 1/8" @ 4107' cmt d 1st stage w/ 216sx,
circ 91sx. 2nd stage w/ 100sx, circ
175sx. (11" hole)

100' cmt plug 2638 - 2538

100' cmt plug across shoe 7/15 1/4"
4050'

TOC - 9050' T.S.

Cut off csq @ 7400'±. SPOT
100' cmt plug in & out of csq stab

Formation Tops:

Rustler - 982

Tensil - 2588

Yates - 2798

7-Rivers - 2987

Delaware - 5682

Bone Spring - 7390

2nd B.S. - 9932

3rd B.S. - 10170

Wolfcamp - 10664

Spot 200' cmt plug from 10750
10310'

Wolfcamp Perfs

10820 - 42 (2 JSPE)

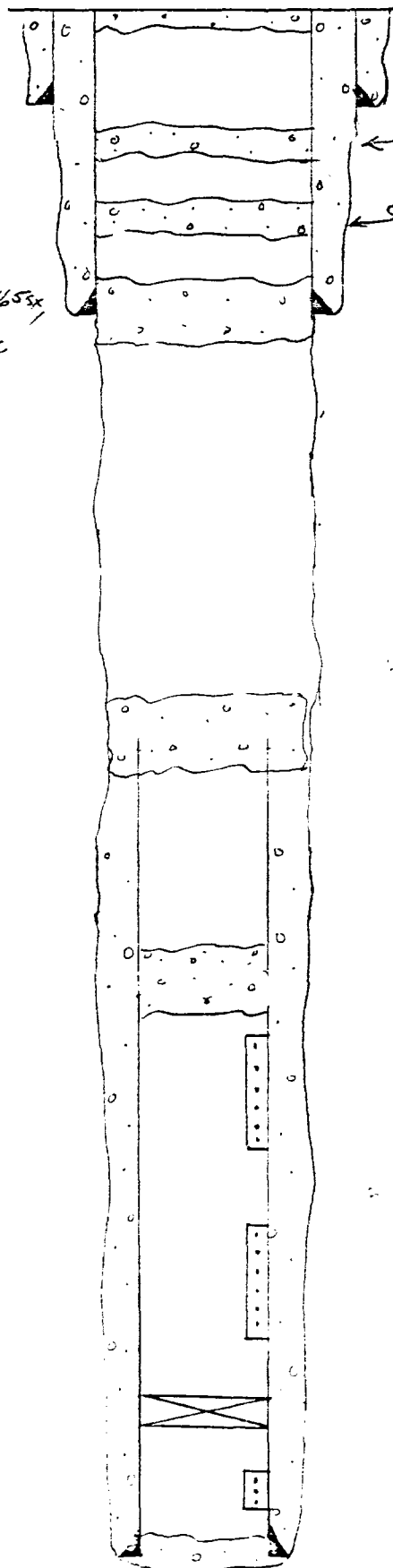
10874 - 94 (2 JSPE)

CIBP @ 10910'

10920 - 30 (2 JSPE)

5 1/2", 15.5-17" @ 11000' cmt d w/
450sx, TOC - 9050 (7 1/8" hole)

TD - 11000 PBTD - 10954'



VII.

1. Proposed average and maximum daily rate and volume of fluids to be injected at 150 barrels (average) and 250 barrels (maximum).
2. System is closed.
3. Proposed average and maximum injection pressure- 600 (average) and 800 (maximum).
4. The only fluid that will be injected is produced water from the nearby wells.
5. The water will be injected into a zone that is productive of oil or gas.

VIII.

1. Seven Rivers formation is part of Guadalupian Series of the Permian Period. Lithology consists of a white to light grey, finely crystalline dolomite, sometimes sucrosic. Top of the Seven Rivers in the Jennings "B" Federal No. 2 will be 3135' (+496). Gross thickness of the Seven Rivers in this area is approximately 420 feet. The Jennings "B" Federal No. 2 has 8-5/8" surface casing set at 426' to preserve fresh water aquifers found in the overlying Ogalalla formation. There are no known fresh water aquifers below the proposed water injection zone in this area.

IX.

Proposed stimulation program- acidize open hole 3100-3350' w/ 10,000 gals 15% NEHCL in 5 equal stages.

X. Test Data

The last well test was done 3-17-81, 24 hrs.,
Pumped 0 BO, 126 BW, FL 961. Well was ta'd in 5-19-81.
11-1-83- convert to injection well in Yates formation.

XI

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-8213

FILE 23-435

Operator SUN E & P CO. #691175*
Lease or Well SHEARN FED. WELL #3
Formation YATES
Perfs _____ To _____ : T.D. _____
Method of Collecting Sample HEATER TREATER

District SOUTHWESTERN
Field EAST LUSK
County LEA
State NEW MEXICO

Treatment _____
Date of last acid job _____

Collected by _____
Date 3/14/83 3-28-83
Collected Analyzed

Total Prod.	BOPD	BWPD	MCFPD

Sample No. 26019
Analyst PPI

Description of Sample 9/10 PINT CLEAR WATER.

CONSTITUENTS	ppm
Sodium	<u>5190</u>
Calcium	<u>1080</u>
Magnesium	<u>454</u>
Barium	<u>0</u>
Strontium	
Potassium	
Iron	<u>0</u>
Chloride	<u>10300</u>
Sulfate	<u>2680</u>
Carbonate	<u>0</u>
Bicarbonate	<u>859</u>
TOTAL DISSOLVED SOLIDS	<u>21563</u>

OTHER PROPERTIES	
pH	<u>7.2</u>
Specific Gravity	<u>1.0164</u>
Resistivity ohm-mtr. @ 75° F	<u>.334</u>
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as CaCO ₃ , ppm	
Sulfide	<u>PRESENT</u>
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	<u>1</u>
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

First Water sample received from this lease. Unable to classify at this time. Future reference.

* Enclosed analyses indicate the water sampled are compatible. Should you wish to discuss these analyses further, please contact the lab.

REPORTED BY: Johnny Reinschmidt

CHEMICAL ENGINEERING SECTION

Copies to: E. Brandes

T. Fox
R. Monroe
R. A. Sadler
D. Rawson
Corrosion Engineering
File

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-8212

FILE 23-435

Operator SUN E & P CO. *568353*

Lease or Well JENNING FED COMM.

Formation BONESPRING

Perfs. _____ To _____; T.D. _____

Method of Collecting Sample HEATER TREATER

Treatment _____

Date of last acid job _____

Total Prod.	BOPD	BWPD	MCFPD
	<u>67</u>	<u>3</u>	

District SOUTHWESTERN

Field EAST LUSK

County LEA

State NEW MEXICO

Collected by _____

Date 3/14/83

3-28-83

Collected

Analyzed

Sample No. 26025

Analyst PPI

Description of Sample 1 PINT CLOUDY WATER WITH ORANGE SEDIMENT.

CONSTITUENTS

	ppm
Sodium	<u>38800</u>
Calcium	<u>2130</u>
Magnesium	<u>1120</u>
Barium	<u>0</u>
Strontium	
Potassium	
Iron	<u>44</u>
Chloride	<u>63900</u>
Sulfate	<u>4050</u>
Carbonate	<u>0</u>
Bicarbonate	<u>131</u>
TOTAL DISSOLVED SOLIDS	<u>110175</u>

OTHER PROPERTIES

pH	<u>6.2</u>
Specific Gravity	<u>1.0819</u>
Resistivity ohm-mtr. @ 75° F	<u>.075</u>
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as CaCO ₃ , ppm	
Sulfide	<u>ABSENT</u>
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	<u>64</u>
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

First Water sample received from this lease unable to classify at this time. Future reference.

REPORTED BY: Johnny Reinschmidt

CHEMICAL ENGINEERING SECTION

Copies to:

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-8214

FILE 23-435

Operator SUN E & P CO. *568356*
Lease or Well JENNINGS B FEDERAL
Formation YATES
Perfs 2950 To 60; T.D. _____
Method of Collecting Sample HEATER TREATER

Treatment _____
Date of last acid job _____

Total Prod.	BOPD	BWPD	MCFPD
	<u>25</u>	<u>100</u>	

District SOUTHWESTERN
Field EAST LUSK
County LEA
State NEW MEXICO

Collected by _____
Date 3/14/83 3-28-83
Collected Analyzed

Sample No. 26043
Analyst PPI

Description of Sample 9/10 PINT CLEAR WATER.

CONSTITUENTS

	ppm
Sodium	<u>5710</u>
Calcium	<u>1140</u>
Magnesium	<u>407</u>
Barium	<u>0</u>
Strontium	
Potassium	
Iron	<u>0</u>
Chloride	<u>9600</u>
Sulfate	<u>2460</u>
Carbonate	<u>0</u>
Bicarbonate	<u>1020</u>
TOTAL DISSOLVED SOLIDS	<u>20337</u>

OTHER PROPERTIES

pH	<u>6.9</u>
Specific Gravity	<u>1.0159</u>
Resistivity ohm-mtr. @ 75° F	<u>.343</u>
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as CaCO ₃ , ppm	
Sulfide	<u>PRESENT</u>
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	<u>0</u>
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

First water samples received from this lease. Unable to classify at this time. Future reference.

REPORTED BY: Johnny Reinschmidt

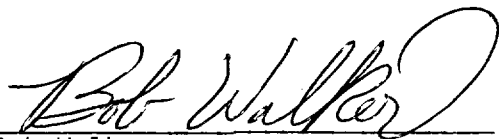
CHEMICAL ENGINEERING SECTION

Copies to:

XII.

Jennings "B" Federal #2

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.

A handwritten signature in cursive script, reading "Bob Walker". The signature is written in dark ink and is positioned above a horizontal line.

Bob Walker
Area Geologist
Sun Exploration and Production Co.

July 10, 1984
Date

III. Well Data- Attached well sketch

A.

1. Jennings "B" Federal Well #2
Section 15, T-19-S, R-32-E,
Unit Ltr. "N", 660' FSL & 1980'FWL.
2. Casing Data:
8-5/8", 24#, 426' cmtd w/ 375 sxs, Top of cmt.-Surface
hole size 12 $\frac{1}{4}$ ", 5 $\frac{1}{2}$ ", 14# 3100' cmtd w/ 505 sxs,
Top of cmt-surface, hole size 7-7/8".
3. Tubing Data:
2-3/8", 4.7#, cmt lined, 2889'+
4. Packer Otis Perma-latch Pkr w/ OSTSD w/ 1.5 "N" profile
set at 2889'+.

B.

1. Injection formation- Seven Rivers
2. Perfs- 3100-3350' Open Hole
3. Well was originally drilled as an oil well.
4. Sqzd perfs w/ 100 sxs 3012-20', Reperf 3012-18.
5. The next oil producing horizon known for this area is from
the top of the 2nd Bone Springs Limestone. This is producing
in the Jennings Federal Com. No. 1 at a depth of 9874-9890.

Jennings "B" Federal #2
History

Loc: 1980 FWL & 660' FSL, Sec. 15, T-19-S, R-32-E, Lea County, N.M.

Elevations: GL - 3621 KB-3631

Casing: 8-5/8", 24# @ 426', cmtd w/375 sx, circ 30 sx
5½", 14# @ 3100', cmtd w/505 sx, circ 35 sx

TD-3100 PBD-3074 (FC)

2/19/81 Perf 3012-3020, 1 JSPF
Acidized w/500 gals 15% NEFEHCL, BDP-2100,
Mx-4500, ISIP 1200, 5 BPM. Balled out after 380 gals.
Frased w/25000 gals gelled 2% KCL & 40,000# 20/40 sd.
BDP-2100, Mx-2300, ISIP-1700, 8 BPM

2/21/81 Swb 3 hrs rec tr. oil, 34 BLW, 1ge amt. of sand
CO sand, POP

3/17/81 24 Hrs P O BO, 126 BW FL 961 (1818 on SN)

5/13/81 Sqzd perfs 3012-20 w/100 sx C1 C, FP-2500, Rev out 45 sx. DO cmt and
retainer, CO Sd to 3074'.

5/16/81 Reperforated 3012-18, 7 holes, swabbed 1/4 hr, no FE
Acidized w/500 gals 15% NEFEHCL BDP-1250, Mx-1600, ISIP-750
Swab 3 hrs Rec O BO, 25 BLAW FL-2924
Est FE 4 BPH. Swabbed 7 hrs. Rec O BO, 13 BLAW, 23 BW FL-1000 to 2924.

5/19/81 Swab 2 hrs, Rec O BO, 12 BW, FL 700 to 2900.
Well was TA'd.

11/1/83 Tag btm - 3065'. Added perfs 2986-3004, 3050-60 and reperfed 3012-18 w/2 JSPF.
Acidized perfs 2986-3060 w/4000 gals 15% NEHCL in 2 stgs w/75 ball sealers and
and 250# GRS. BDP-700, Mx-2600, Avg-2250, ISI-1500, 4 BPM.
Established inj. rate into Yates, 1 BPM @ 600 psi, w/20 bbls lease wtr.
RIH w/Otis permalatch pkr w/OSTSD, 1.5 'N' profile, on 2-3/8" cmt lined tbg,
circ ann. w/pkr fluid, set pkr @ 2889'. Estab. inj. rate into perfs 1 BPM @
600#, amt. of wtr. used not known.

3/14/84 Hooked-up well to surf. inj. equip. Inj. pressure was 1250 psi. and increas-
ing. (Limited to 600 psi). Well was acidized w/1000 gals 15% NEHCL at 1½ BPM,
Avg-1750#, Mx-1900. Inj. press still too high after acid job. Well SI.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

FIELD

DATE

Jennings' B Fed #2 wams North East Lusk Yates

4/6/84

PRESENT COMPLETION



SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

GL-3621

8 5/8" 21# @ 426' contd w/ 375 sx
circ 30 sx5 1/2" 14# @ 3100' contd w/
540 sx, circ 35 sx

TD-3100' PBD-3065

DATA ON THIS COMPLETION

2 3/8" 4.7# Cont Lined Toq
 OTIS Perma-hatch Pk'r @
 2884' (btm 2895') w/ OSTSD
 1.5' N' Profile

Yates Perforations
 2986 - 3004 (25PF)

3012 - 18 (25PF)

3050 - 60 (25PF)

* Recommend deepening well
 approx 250' thru the Seven
 Rivers zone.
 New TD - 3350' 4 3/4" O.H.

JENNINGS "B" FEDERAL #2

Surface owner for this well is the Bureau of Land Management (since this well is a federal well). A copy of the application has been mailed to them for their records.

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

1, _____

Robert 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.

Beginning with the issue dated

June 13, 19 84

and ending with the issue dated

June 13, 19 84

Robert L. Summers
Publisher.

Sworn and subscribed to before

me this 14 day of

June, 19 84
Jane Paulowsky
Notary Public.

My Commission expires

3-24, 19 87

(Seal)

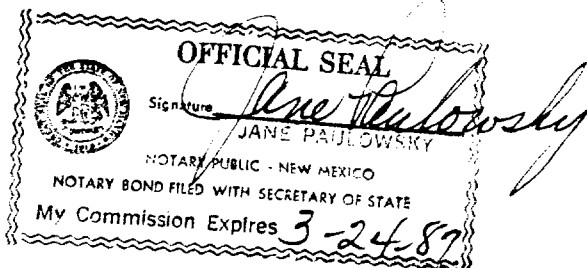
This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

LEGAL NOTICE

June 13, 1984

Sun Exploration & Production Company, P.O. Box 1861, Midland, Texas 79702, (contact party, Rita Monroe (915) 688-0331) has applied to the New Mexico Oil Conservation Division for approval to inject fluid into a formation which is productive of oil or gas. The proposed injection site is the Jennings "B" Federal lease, Well No. 2, located in Section 15, T-19-S, R-32-E, Lea County, New Mexico. This well is injecting into the Yates formation. Sun plans to extend injection into the Seven Rivers formation, open hole 3100' (plus or minus) 3350' (plus), with the expected maximum injection rate of 200 barrels a day at the maximum pressure 800 pounds.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501.





**Sun Exploration and
Production Company**
No 24 Smith Road
ClayDesta Plaza
PO Box 1861
Midland TX 79702 9970
915 688 0300

July 18, 1984

Petroleum Development Corporation
9720-B Candelaria Road
Albuquerque, New Mexico 87112

Re: 15 day Notice
Injection Application
Jennings "B" Federal #2

Gentlemen:

Sun Exploration & Production Company is filing to obtain permission from the New Mexico Oil Conservation Division to expand the injection interval to the Seven Rivers formation. The well is already injecting into the Yates formation. Attached is a copy of the application since your company has lease holdings within the one-half mile reviewing radius of our well.

If you have any objections to our application, please notify the New Mexico Oil Conservation Division within fifteen days.

If you need additional information, please contact me at (915) 688-0374.

Very truly yours,

Dee Ann Kemp
Associate Accountant

DAK:js

*Mailed to offset operator by
certified mail 7-20-84.
Dee Ann Kemp*

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Sun Exploration and Production Co.

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? ☐ yes ☐ no
If yes, give the Division order number authorizing the project R-7313-A
This well has approval to dispose of water into the Yates formation.

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: Associate Acct.

Signature: Dee Ann Kemp

Date: 7-17-84

* 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.

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.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

Original
File Copy

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7964
Order No. R-7313-A

APPLICATION OF SUN EXPLORATION AND
PRODUCTION COMPANY FOR AMENDMENT TO
DIVISION ORDER NO. R-7313, LEA
COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on September 28, 1983, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 5th day of October, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sun Exploration and Production Company, seeks an amendment to Division Order No. R-7313, dated July 1, 1983, which authorized its Jennings "B" Federal Well No. 2 located in the SE/4 SW/4 (Unit N) of Section 15, Township 19 South, Range 32 East, NMPM, Northeast Lusk Field, Lea County, New Mexico, to be used as a salt water disposal well.

(3) That the applicant seeks to change the injection interval in said well from approximately 3012 feet to 3018 feet as previously authorized to approximately 2986 feet to 3004 feet and from approximately 3050 feet to 3060 feet.

(4) That authorization of the additional perforated interval for disposal purposes will allow the applicant to dispose of greater volumes of salt water into said well at lower pressures, will not impair correlative rights nor cause waste and should be approved.

(5) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(6) That the operator should 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.

(7) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That Order No. (1) on Pages 2 and 3 of Division Order No. R-7313, dated July 1, 1983, is hereby amended to read in its entirety as follows:

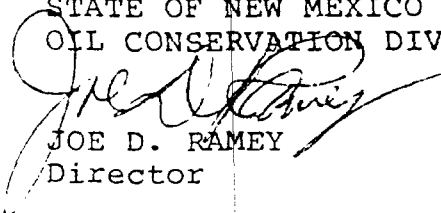
"(1) That the applicant, Sun Exploration and Production Company, is hereby authorized to utilize its Jennings "B" Federal Well No. 2, located in Unit N of Section 15, Township 19 South, Range 32 East, NMPM, Northeast Lusk Field, Lea County, New Mexico, to dispose of produced salt water into the Yates formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 2950 feet, with injection into the perforated interval from approximately 2986 feet to 3004 feet and from approximately 3050 feet to 3060 feet.

PROVIDED HOWEVER, that the tubing shall be plastic or cement-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer."

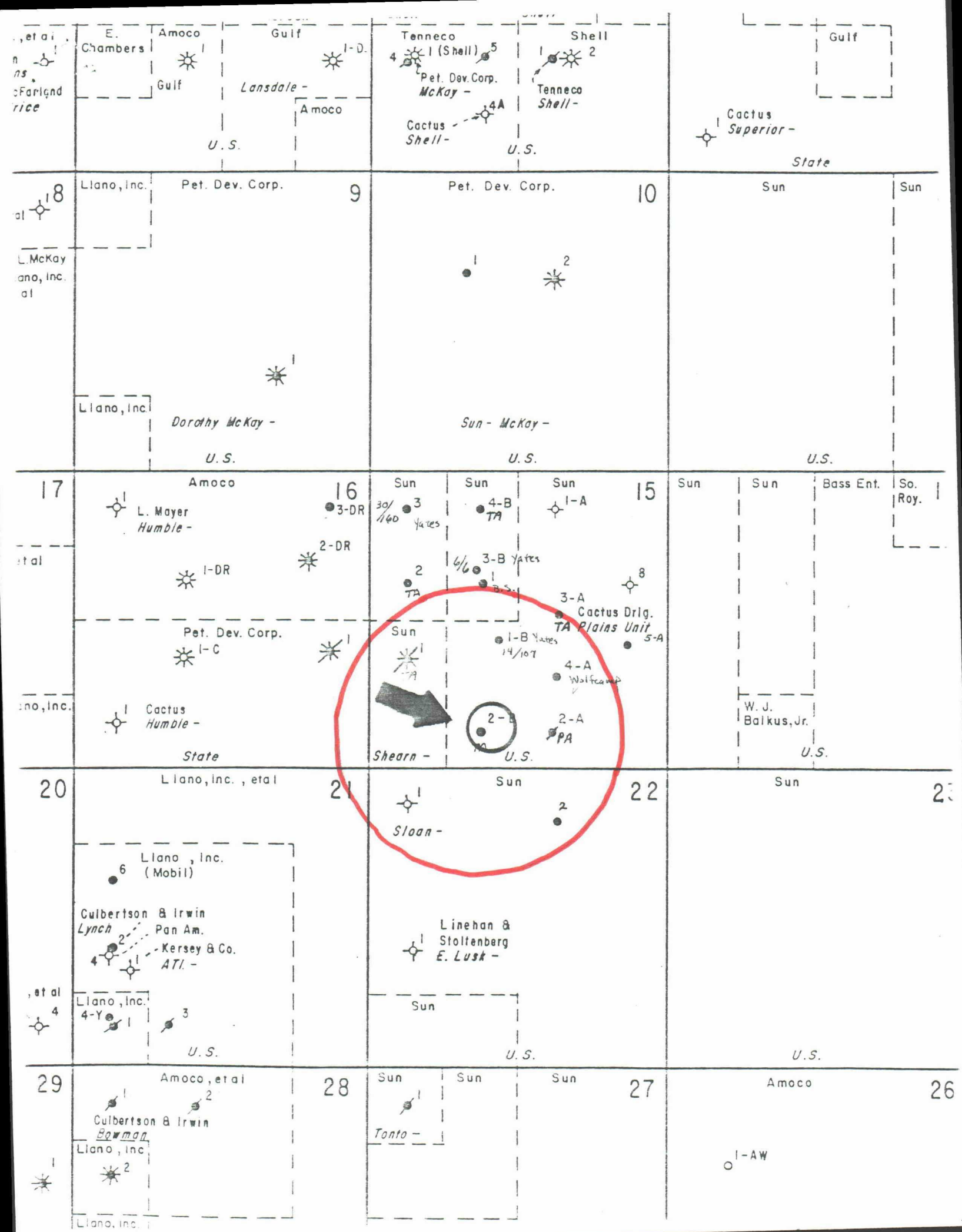
(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

S E A L
fd/



SHEARN FEDERAL COM. #1

Location: 660' FWL & 1980' FSL. Unit L, Sec. 15, T-19-S, R-32-E,
Lea County, New Mexico. Lea County Wildcat Field

Elevs: GL 3617, KB 3638

Spud Date: 12-7-71

Completion date: 6-13-72

TD: 14,330'

PBTD: 13,030

Csg. description:

Surface: 17½" hole. 13-3/8", 61# 54.5#, 48# csg. @ 2683, cmtd
w/1000 sxs. cmt. circld.

Intermediate & Production casings:

9-5/8", 40# 43.5#, casing @ 7350'. Cmtd w/775 sxs. TOC
@ 4100 according to temp. survey dated 12-30-71.

7-5/8", 33#, 29 # liner @ 13,342. Top liner @ 7040' cmtd
w/900 sxs. TOC @ 13,100.

Initial Completion:

Perfd 1 hole @ 12,231-232,-233,-234,-235,-236,-237,-238,-239.
(9holes total)

Fraced w/10,000 gals. gelled kerosene and 3000# 20/40 SD.

Max TP-9600# Min TP-9000# FP-9300#. MIR-5BPM. AIR 4½ BPM.

ISIP-8100#. After 10 mins STP-7800#, After 30 mins. SIP-7650#.

Tested 4-26-72 24 hrs. F 81 BO, OBW. 18/64 chk. FTP-300# GOR 6451/1.

Reaczd w/1000 gals. 15% NE acid per 9000 gals 20% retarded acid.

Max P - 7900#. Min P-6200#. FP-6500#. ISIP-4700#. After 5 mins.

SIP-4200#. After 30 mins SIP-3250#. MIR - 4.25 BPM. AIR-3 BPM.

Initial Potential: Tested 24 hrs. 6-13-72 F 140 BO, 0 BW. 699 MCF. 20/64 chk.
FTP-500#.

WO History: None

WO#1

Purpose: Complete in Delaware.

3-7-78

CIBP set @ 12096'. Capped w/cmt 12096-12061.

thru

CIBP set @ 10596'. Capped w/cmt 10596-10561.

CIBP set @ 9800'. Capped w/cmt 9800- 9765.

50 sx cmt plug set @ 7082-6920. Perfd @ 6544,6545, 6546, (1 SPF)

Aczd w/500 gals 15% NEHCL, BOP-3000#, Max P-3000#, Avg. P-2200#.

FP-2100#. ISD-1700#. After 5 mins SIP 1700#. Swabbed 20 hrs.

8 BLAW, 74 BW no show of oil or gas.

CIBP set @ 6500'. Perfd @ 4974-86. (1JSPF) Aczd w/1250 gals. 15%

NEHCL, 21 RCNBS, BOP-2000, Max P-2000#. Avg. P-1850. FP-1950.

ISD-1600#. After 20 mins SIP-1400#. AIR 3 BPM. Swabbed 5 BLAW,

NS oil or gas.

Production before: TA'd

Production after : TA'd

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Shearo Federal #1

FIELD

Wildcat

DATE

2-4-83

☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

17 1/2" hole. 13 3/8" 61" 54.5"
48" csg @ 2683. Cmt'd
w/ 1000 sxs. Cmt. circld.

9 5/8" 40" 43.5" csg @
7350. Cmt'd w/ 775 sxs.
TOC @ 4100' TS 12-30-71.

7 5/8" 33" 29" Liner csg.
@ 13,342. Cmt'd w/ 900
sxs. TOC @ 13,100'

GL 3617

KB-3638

2683

4100

6500

6920

7040

7082

7350

9765

9800

10561

10596

12061

12096

13,030

13100

13342

4974

4986

6544

6545

6546

12,231

12,239

DATA ON THIS COMPLETION

Present well status: TA'd

Perf @ 4974-86 (13 SP)
(13 holes)

CIBP @ 6500'

Perf @ 6544; 6545; 6546
(3 holes)

50 sxs cmt. plug @ 6920'-
7082'

CIBP @ 12096' w/ cmt cap 35'

CIBP @ 10596' w/ cmt cap 35'

CIBP @ 12096' w/ cmt cap 35'

Perf @ 12,231; 12,232;
12,233; 12,234; 12,235; 12,
236; 12,237; 12,238 (9 holes)

PBTD: 13,030

TD: 14,330

SLOAN FEDERAL #1

Loc: 660' FNL & 660' FWL Unit D. Sec. 22, T-19-S, R-32-E, Lea County,
New Mexico. East Lusk Field.

Elevs. GR 3612

Spud date: 9-26-75

Completion date: 11-11-75

TD: 10,915

PBTD: 2949

Csg. description:

Surface: 17½" hole. 13-3/8", 48#, 68#, H&K, 8 rd csg @ 375',
cmtd w/400 sxs. Cmt. circld.

Production & Intermediate: 12¼" hole. 9-5/8", 36#, K-55, L.T.C. & S.T.C.
csg. @ 4100'. Cmtd w/2700 sxs. TOC @ 70' according to temp
survey.

8-3/4" hole. 7", 23#, 26#, 29#, K-55, N-80 liner. @ 10,915.
Top of liner @ 3790. Cmtd w/1800 sxs. Sqzd top of liner w/
200 sxs.

Initial Completion:

Perf'd Wolfcamp @ 10,678-10,815 (14 holes). Aczd w/8000 gals 15%
NEHCL. Swbd 3 days. Rec. trace oil.
Set CIBP @ 10,610. Perf'd bone spring @ 10,262-264,-266,-296,-298,
-300, -302, -304,-306 (9 holes)
Aczd w/1600 gals 15% NEHCL.
Swbd. 2 days. Rec. tr. oil.
Set RBP @ 10,190. Perf'd w/10,065,-67,-69,-71,-73. (5 holes).
Aczd w/500 gals 15% NEHCL. Swbd 2 days. Rec. tr oil.
Swbd 2 days. Rec. tr oil.
Fracd w/1000 gals. F-75 acid, 15,000 gals. KIX w/9800# 100 mesh
SD & 7000# 20/40 SD.
Tested well. Well declined from 60/80 to 10/22 in 45 days. Set
CIBP @ 10,035. Perf'd @ 7959, -61, -67,-69,-73,-76, 8009, -16,-27,
-29,-55,-88, 8105,-11,-14,-25,-27,-36,-38,-73,-75.
Aczd w/3000 gals. 15% NEHCL.
Swbd 2 days. Rec. SL show of oil. Well TA'd.

WO History:

WO #1	Purpose P&A well.
4-23-78	Dump 10 sxs cmt on CIBP @ 10,035.
thru	Dump 6 sxs cmt on CIBP @ 7900'
4-26-78	70 sx plug @ 3700-3843.
	35 sx plug @ 950-1080.
	30 sx plug @ Surf - 90.

Sloan Federal #1

Page 2

WO #2
9-30-80
thru
10-30-80

Purpose: Re-enter P & A well & test Yates.

Drld. out cmt plugs to 3100.

Set CIBP @ 3050. Perfd @ 2955-65. Aczd w/1000 gals. 15% spearhead acid. Fracd perfs w/5000 gals. gelled 3% acid and 5000 gals CO₂ 12,000# 20-40 SD.

Swbd. 3 days. NS of oil.

Set RBP @ 2949. Perfd Yates @ 2932-42. (11 holes). Aczd w/1000 gals CO₂ and 24,000# 20-40 SD. Two state frac w/GRS block between stages.

Swbd. 2 days. NS of oil, 16 BLAW, 130 BW.

Sqzd perfs @ 2932-65 w/150 sxs cmt.

Perfd @ 2824-34 (11 holes)

Aczd perfs w/1000 gals 15% Spearhead acid, 16 RCNBS. BDP-2100#.

Max P-2200# Min P-1800#. Avg. P-1900#. FP-2200# ISD-1600#.

After 15 mins. 1350#. Fraced w/3850 gals 15% gelled KCL wtr.

Foamed to 65% quality w/186000 SCF Nitrogen, 8400# 20-40 SD.

BDP-0, Max P-3200#. Min P-3000#. Avg. P-3100#, FP-3200#.

ISIP-2400#. After 15 mins. SIP-2250#. After 1½ hrs. SIP-

2000#. AIR-10 BPM. F 6 BLAW, no oil in 14 hrs. 10-29-80.

TA'd well.

Future Plans- Plans are to plug well within the next month.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Shaw Federal #1

FIELD

East Lusk-Wolfcamp

DATE

2-4-83

☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

17 1/2" hole. 13 3/8" 48# 68#
H+k, Brd. csg @ 375'
Cmt'd w/ 400 sxs. Cmt.
Grdld.

12 1/4" hole. 9 5/8" 36# k-55,
L.T.C + S.T.C. csg @ 4100'
Cmt'd w/ 2700 sxs. TOC @
70' TS.

8 3/4" hole. 7" 23# 26#
29# k-55, N-80 LINER
@ 10,915' Top of Liner
@ 3790' Cmt'd w/ 1200
sxs. Sgzd top of Liner
w/ 200 sxs.

DATA ON THIS COMPLETION

Present Well status: TA

Perfs @ 2824-2834. (11 holes)

Perfs @ 2932-2965
sgzd w/ 150 sxs. cmt.
RBP @ 2949

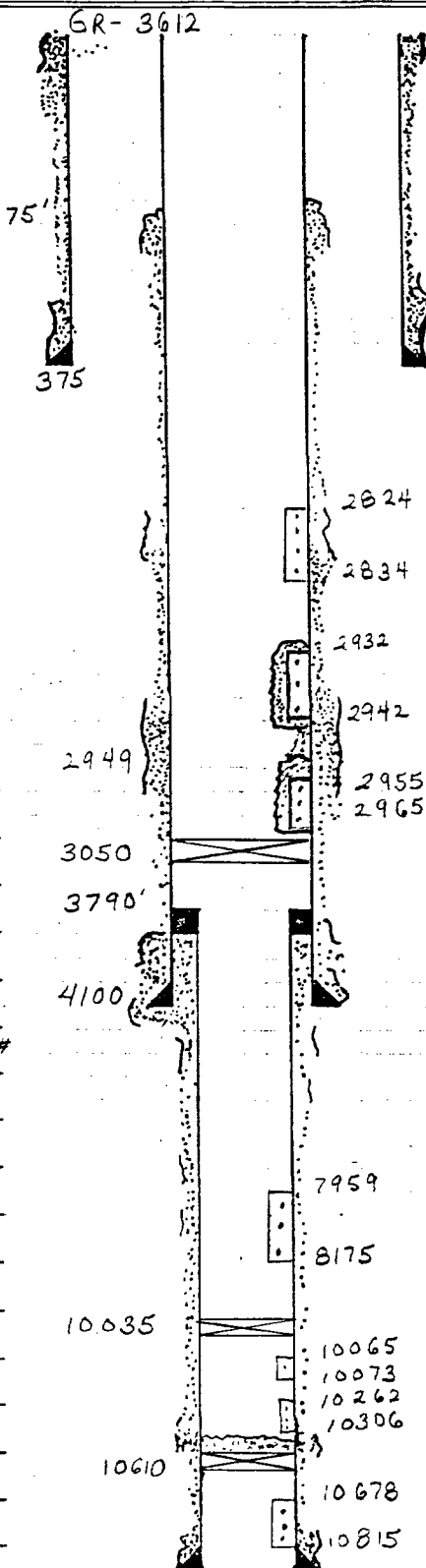
CIRP @ 3050.

Perfs @ 7959-8175 (21 holes)

CIRP @ 10,035.

Perfs @ 10 065 - 10 073 (5 holes)
Perfs @ 10 262 - 10 306 (4
holes)

Perfs @ 10 678-10 815 (14 holes)



PBD: 2949

TD: 10,915

JENNINGS "A" FEDERAL #4

Loc: 1650' FSL, 1980' FEL, Sec. 15, T-19-S, R-32-E, Lea County, New Mexico
Northeast Lusk Field

Elev: GL - 3624 KB - 3637

Casing: 13-3/8", 48-54.6# H, @ 454', cmt'd w/375 sx, circ 50 sx 8-5/8",
24-32#, @ 4400' (tool 990') 1st stage cmt'd w/2500 sx, 2nd stage
cmt'd w/400 sx, circ 125 sx. (11" hole) 5 1/2", 15.5-17#, @ 10,900 FC-
10877, DV tool-7206, 1st stage cmt'd w/675 sx, circ 50 sx, 2nd stage
cmt'd w/600 sx. (7-7/8" hole).

Spudded 10-20-82

Completed:

TD-10,900 PBTD-

TOC-6000'

12/15/82 Perf Wolfcamp 10818-828, 2 JSPF, 21 holes. Spot 125 gals.
15% HCL. Perfs broke down @ 2500# @ 4 BPM.

Acidized w/875 gals 15% NEHCL. BDP-0, MX 2500 #, MN-
2300#, Avg. - 2400#, ISI - VAC. 5 BPM. Well started flowing.

12/18/82 IPF 339 0, 36 BW, 13/64" CHK, TP 1622-1480.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Jennings "A" Federal #4

FIELD

Northeast Lusk

DATE

2-4-83

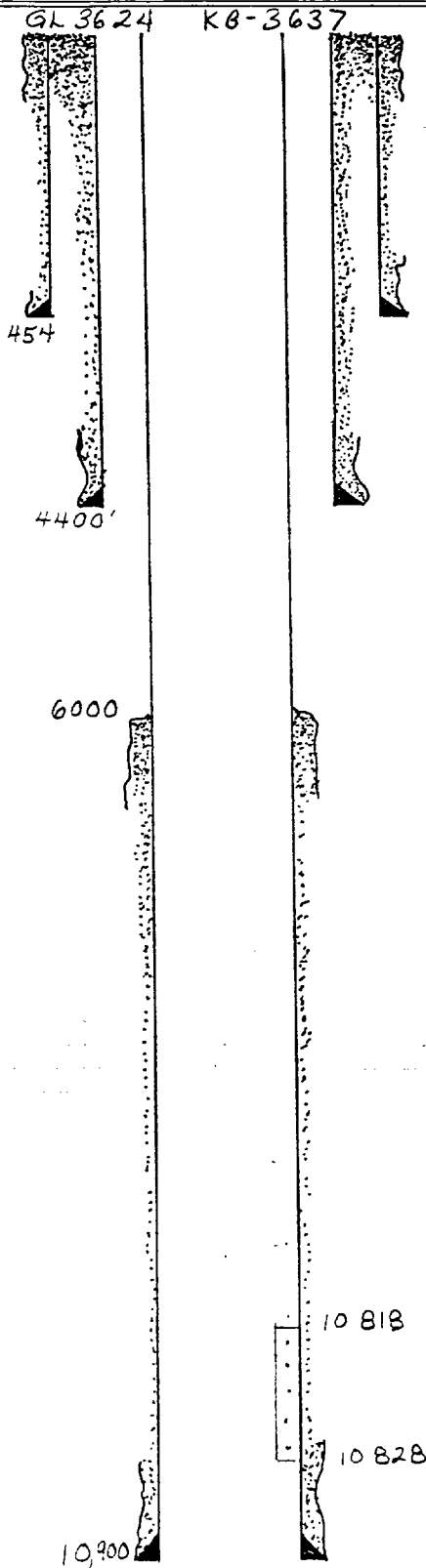
☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

13 $\frac{3}{8}$ " 48# 54.6# csg. @
454'. Cmt'd w/ 375 SXS.
Cmt circld.

8 $\frac{5}{8}$ " 24, 32# csg. @ 4400'
Cmt'd w/ 2625 SXS.

5 $\frac{1}{2}$ " 15.5# 17# csg. @ 10,900'
Cmt'd w/ 1275 SXS. TOC @
6000.



DATA ON THIS COMPLETION

Present Well status

Perfd @ 10,818 - 828
(21 holes)

JENNINGS "A" FEDERAL #2

Loc: 660' FSL & 1980' FEL. Unit 0, Sec. 15, T-19-S, R-32-E, Lea County,
New Mexico. Northeast Lusk Field.

Elev: GR 3619

Spud date;

Completion date:

TD: 3100'

Casing description:

Surface: 12 $\frac{1}{4}$ " hole. 8-5/8", 24#, K, S.T.C. csg @ 418'. Cmtd w/375 sxs.
Cmt circld.

Initial Completion: P&A. Spotted 100 sxs cmt # 3100-2800, 130 sx plug
@ 1200-800, 65 sx plug @ 500-300, 10 sx plug @ surface.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

Jennings' Federal #2

FIELD

Northeast Lusk-

DATE

2-4-83



PRESENT COMPLETION



SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

12 7/8" hole. 8 5/8" 24# K,
S.T.C. csg @ 418. Cmtd
w/ 375 sxs. Cmt circld.

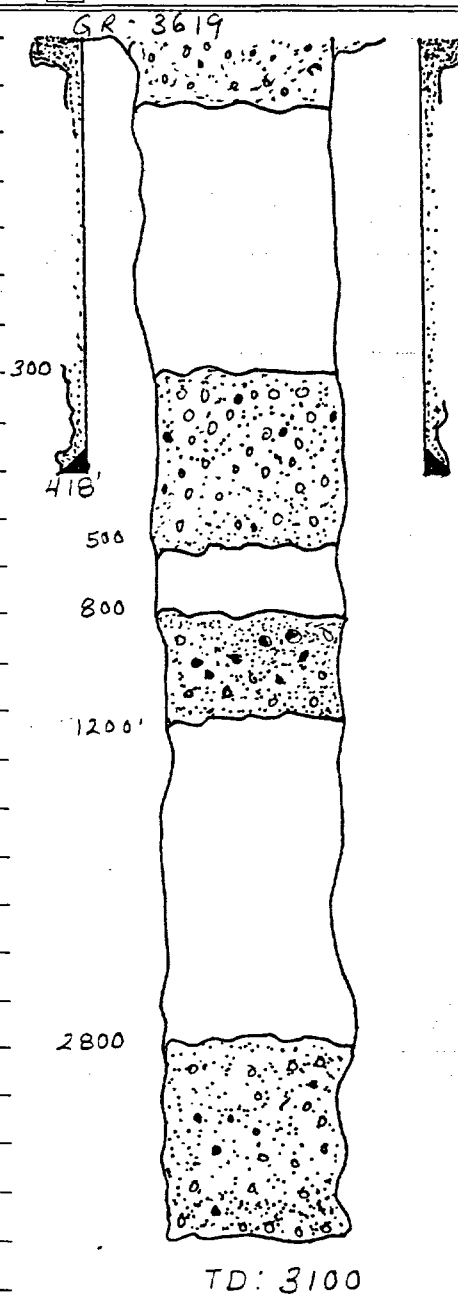
DATA ON THIS COMPLETION

Present well status: P+A
10 sxs cmt plug @ SURFACE

65 sx cmt plug @ 300-
500.

130x cmt. plug @ 800-
1200

100 sx cmt. plug @
2800 - 3100.



7 7/8" Open hole.

TD: 3100

JENNINGS FEDERAL "B" - 1

Loc: 2495' FSL, 2290' FWL, Sec. 15, T-19-S, R-32-E, Lea County, New Mexico
Northeast Lusk Field

Elev: 3629 GR

Casing: 8-5/8" 24# @ 437', cmt'd w/350 sx, circ 65 sx. (12 1/4" hole)
5 1/2", 14#, @ 3400', FC-3368, cmt'd w/760 sx, circ. 115 sx.

Spudded: 7-29-80

Completion date: 8-21-80

TD - 3400'

PBTD: 3258

8/21/80 Seven Rivers 3331-37, 7 holes. Spotted 3 bbls. acid, washed 3/4 hr. Acidized w/1000 gals 15% NEFEMCH, BDP-2300, MX-5000, MN-1000, ISI-VAC, 4-5 BPM. Balled out to 5000# w/700 gals in form. Swab 7 hrs rec 118 BW, FL 750-1200, chlorides - 20,000 ppm. Set CIBP @ 3300' w/15' cmt cap.

8/24/80 Perf Yates 2958-62, 5 holes, spotted 1 bbl MCH, BDP-2600, MX 3100, ISI 920, AIR-3 BPM. Acid w/ 800 Gals MCA. Frac w/3000 gals (wtr frac-60), 3000 gals CO₂ & 4500# 20/40 SD. BDP 3100, MX 4800, MN 1390, ISI-1390, AIR 7-8 BPM. Swab 3 hrs, Rec. 37 BO, 8BLW, FL 300-1500, FE 4 BPH.

9/16/80 IPP 148 BO, OBW, 8MCF.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

FIELD

DATE

Jennings Federal "B" #1

Northeast Lusk

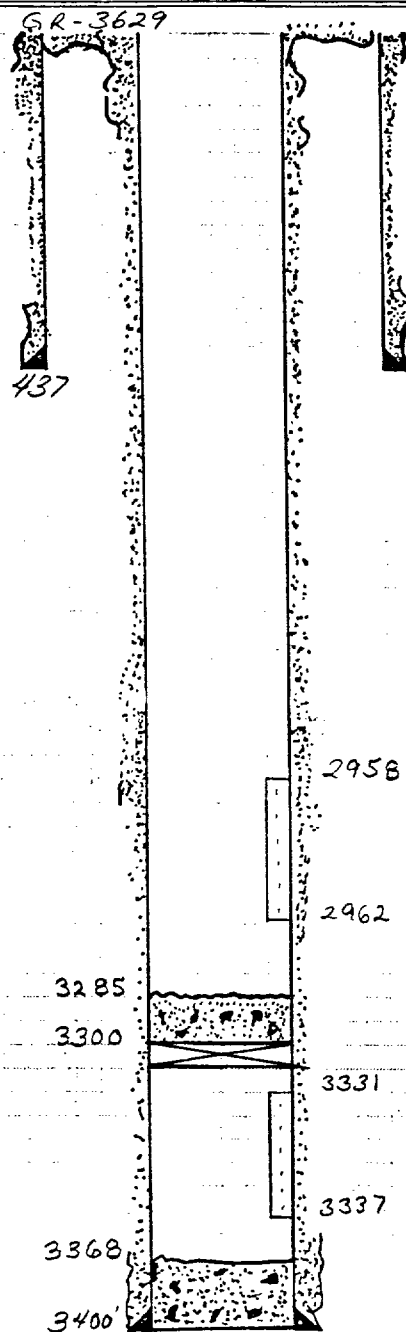
2-2-83

☒ PRESENT COMPLETION☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

12 1/4 hole 8 5/8" 24# csg.
@ 437 Cmt'd w/ 350 sxs.
Cmt. circld.

5 1/2" 14# csg @ 3400'



PBTD - 3285

TD - 3400'

DATA ON THIS COMPLETION

Present Well status:

4ates perf'd @ 2958, 2959,
2960, 2961, 2962.

CIBP @ 3300' w/ 15' cmt
cap.

JENNINGS "A" FEDERAL #3

Loc: 1880' FEL & 2500' FNL. Unit G. Sec. 15, T-19-S, R-32-E,
Lea County, New Mexico. Northeast Lusk Yates Pool.

Elevations: 3631 GR.

Spud Date: 12-16-81

Completion date: 12-23-81

Original TD: 3002

Original PBTD: 3001

TD: 3014

Csg. Description:

Surface: 12 $\frac{1}{4}$ " hole. 8-5/8", 24#, K csg. @ 443' cmtd w/375 sxs.
cmt. circl'd.

Production: 7-7/8" hole. 5 $\frac{1}{2}$ ", 24#, K csg @ 3002', cmtd w/535 sxs.
Cmt cricld to surface.

Initial Completion:

Perf'd Yates w/2JSPF @ 2994-2999 (11 holes) Aczd w/
1000 gals. 15% NEHCL using 22 RCNBS BDP -29003. Max
P-2900#. Min P-1600# Avg P-1800#. FP-3000#. ISIP -
1000#. After 15 mins. SIP-770#. AIR - 5BPM.

Reaczd w/1000 gals. 15% NEHCL using 22 RCNBS. BDP-
1600#. Max P-3200#. Min P-1700#. Avg. P-1800#.
FP-3000#. ISIP - 1000#. After 15 mins. SIP-770#.
AIR-5 BPM.

Frac'd Yates w/6000 gals. (3000 gals. Wtr. Frac-60,
3000 gals. of CO₂, 4500# 20/40 SD).
BDP - 1000#. Max P-3500#. Min P-3000#, Avg. P-3200#.
FP-2600#. ISIP - 1600#. After 15 mins. SIP - 1130.
AIR - 8BPM. Tested 24 hrs. 2-10-82. P O B0, 13 BLW.

Refraced w/14000 gals (7000 gals wtr. Frac - 60, 7000
gals of CO₂ w/11,000# 20/40 SD)
BDP - 2700#, Max P-3520, Min P-2600#. Avg. P-3000#
FP-3400#. ISIP -1850#. After 15 min SIP - 1620#,
AIR - 10 BPM. Tested 24 hrs, 2-24-82. OBO, 2 BW.

Sqzd perfs @ 2994-2999 w/200 sxs. of class "C" cement.

Drld new hole (OH) from 3002 - 3014.
Aczd OH w/1000 gals 15% NEHCL. BDP -300#. Max P-1900#,
Min P-1600#. Avg P-1800#. FP-1900#. ISIP-1400#. After
15 mins. SIP -600#. AIR 3 $\frac{1}{2}$ BPM.

Frac'd OH w/14000 gals. (7000 gals. gelled 2% KCL, 7000 gals.
of CO₂ w/11000# 20/40 SD.) BOP-300#. Max P-3150#. Min P-3000#,
Avg P-3100#. FP-3100#. ISIP-1600#. After 15 mins. 1140#.
AIR-12 BPM. Tested 24 hrs. 4-8-82. P Trace oil, 35 BW.

Initial Potential: Well TA'd.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL SENNINGS "A" Federal #3 FIELD Northeast Lusk Yates DATE 2-2-83

☒ PRESENT COMPLETION

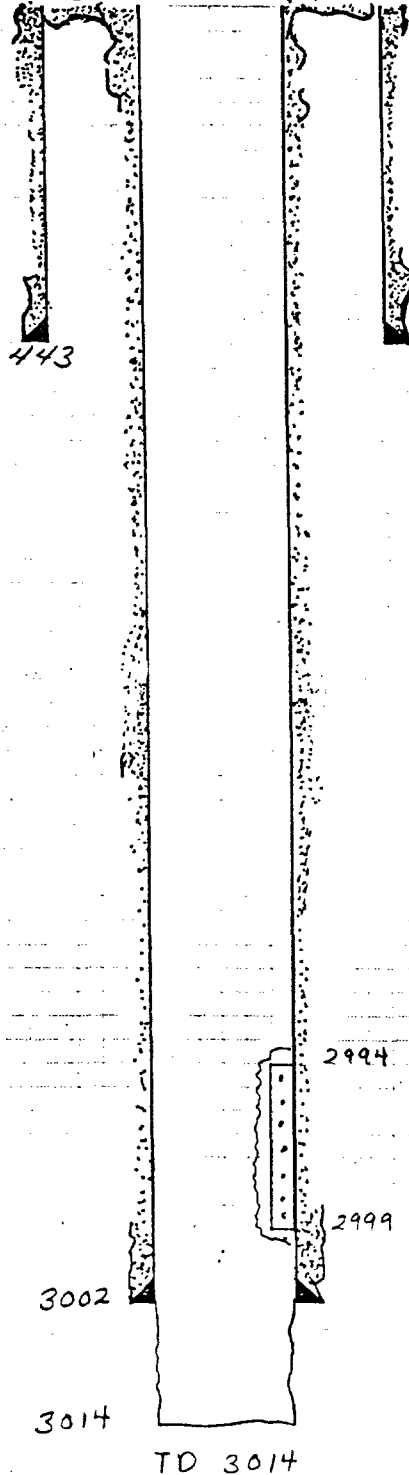
☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

12 7/8" hole. 8 5/8" 24" K
csg. @ 443' Cmtd
w/ 375 SXS. Cmt.
circled.

7 7/8" hole. 5 1/2" 24" K
csg. @ 3002' Cmtd
w/ 535 SXS. Cmt.
circled to surf.

GR-3631



DATA ON THIS COMPLETION

Present status: TA

PerFs. 2994-2999 sqrd
w/ 200 SXS. CLASS "C"
Cement.

Sloan Federal #2
History

Loc: 990' FNL, 1980' FEL, Sec 22, T-19-S, R-32-E, Lea County, N.M.

Elev: GL-3609 KB-3629

Casing: 13-3/8", 48# @ 450', cmt'd w/400 sx, circ 100 sx (17½" hole)
8-5/8", 24 & 32# @ 4107, cmt'd 1st stage-2165 sx, circ 91
sx, 2nd stage - 400 sx, circ 175 sx (11" hole)
5-1/2" 15.5 & 17# @ 11,000', cmt'd w/450 sx, TOC-9050', TS
(7-7/8" hole)

Spudded: 9-17-83

TD-11,000' PBD-10,954'

11-9-83 Perf'd Set I Wolfcamp 10,920-30, 2 SPF
Washed perfs w/3 bbls 15% NEHCL. Spotted 875 gals to
pkr. Acid'd w/total of 1000 gals 15% NEHCL, BDP-4000, MX-
5000, Avg-4900, FP-4950, ISI-4900, 1.5 BPM.
Swab last 2 hrs. rec tr oil, 2 BLAW, FL 10400-10,750,
FE-1 BPH.

11-12-83 Set 5½" CIBP @ 10910, no cmt on top.
Perf Set II 10874-94, 2 SPF, 41 holes.
Spot 4 bbls 15% NEHCL, washed for 1 hr., spotted 1800
gals to pkr, displaced acid, BDP-3000, MX-5000, Avg-4800,
FP-4900, ISI-4780, 1 BPM. 6 Hrs. swabbed 9½ BO, 9 BLAW,
FL 7800-10,700, FE 1 BPH, 20% oil cut.

Reacidized 10874-94 w/5000 gals 15% NEHCL, BDP-3000, MX-
7200, Avg-6950, FP-7200, ISI-5300, 6 BPM.
Last 2 hrs. swabbed 4 BO, 26 BLAW, FL 5200-7800, fair gas
blow.

11-22-83 Plug back w/sd from 10910-10861. Perf'd Set III 10820-
42, 2 SPF, 45 holes. Spot 3 bbls 15% NEHCL, washed for
1 hr., spotted 2000 gals to pkr, could not press annulus.
Rev. out 2150 gals acid.
Reacidized w/2000 gals 15% NEHCL, BDP-2000, MX-5000, Avg-
4600, FP-5000, ISI-4900

12-1-83 Cleaned out sand to CIBP @ 10910.
Acid-fraced perfs 10820-42 & 10874-94 w/16,000 gals 20%
NEFEHCL, 16000 gals Versagel 1500 in two stages, using
600# GRS & 40 ball sealers, BDP-6400, MX-7000, Avg-6700,
FP-6410, ISI-5250, 7 BPM. (Press incr 6450-6900). Swab
7½ hrs. rec 7 BO, 12 BLAW, FL 9200-10,500, No FE. Swab
4 hrs. rec 1½ BO, 7 BLAW, FL 10,000-10,500, no FE. RR
-655 BLAW.

Sloan Federal #2 Well History

- 3-10-83 RIH w/5½" RTTS pkr w/Otis 'RN' nipple on 2-7/8", P-105
7.9# WS, SN 10712, pkr 10713.
Ran Base GR-Temp Log.
Howco frac perfs 10820-42 & 10874-94 w/35,000 gals Versagel
1500 & 14,000# 20/40 & 14,500# 20/40 Interprop, BDP-8380,
MX-8700, Min-8520, Avg-8600, FP-9200, ISI-5900, AIR 16
BPM.
After frac survey indicated frac from 10814-894.
- 3-17-83 6 Hrs. swab 5 B0, 18 BLW, FL 8800-10700, FE 2 BPH, tag
fill @ 10906 (4'). In 2 hrs. swab 0 B0, 24 BLW, FL 3500-
7700. -527 BLW.
Well SI. Plan to plug and abandon.
- 5-4-84 P&A: Spotted 50 sk cmt plug from 10,750-10,310
Cut off 5½" csg @ 7400', LD 180 jts 5½" csg. Spotted
50 sx from 7470-7253 in and out of csg stub.
Spotted 50 sx from 4 54-3977, tagged plug at 4084, spotted
additional 10 sx 4084-50.
Spotted 40 sx from 2635-2489
Spotted 40 sx from 950-804
Spotted 15 sx at surface
Well P&A'd

WELL COMPLETION SKETCHES

Well # East Federal #2 East Rock Volcanic 12/5/83

DATE OF COMPLETION 12/5/83 DATE OF THIS COMPLETION 12/5/83

PERMANENT WELL LOG DATA

50 m plug at surface

500 cm plug 950-954

100 cm plug 954-957

100 cm plug 957-959

100 cm plug 959-960

100 cm plug 960-961

100 cm plug 961-962

100 cm plug 962-963

100 cm plug 963-964

100 cm plug 964-965

100 cm plug 965-966

100 cm plug 966-967

100 cm plug 967-968

100 cm plug 968-969

100 cm plug 969-970

100 cm plug 970-971

100 cm plug 971-972

100 cm plug 972-973

100 cm plug 973-974

100 cm plug 974-975

100 cm plug 975-976

100 cm plug 976-977

100 cm plug 977-978

100 cm plug 978-979

100 cm plug 979-980

100 cm plug 980-981

100 cm plug 981-982

100 cm plug 982-983

Information Table:

Depth = 982
 Core L = 2588
 Core S = 2798
 Core R = 2987
 Core W = 5682
 Core P = 7390
 Core B = 9933
 Core G = 1017
 Core M = 1017

Spot 300 cm plug from 10750

10310

Volcanic Peris

10330 - 10340 (3 Tons)

10370 - 10380 (1 Tons)

10390 - 10400

10410 - 10420

10430 - 10440

10450 - 10460

10470 - 10480

10490 - 10500

10510 - 10520

VII.

1. Proposed average and maximum daily rate and volume of fluids to be injected at 150 barrels (average) and 250 barrels (maximum).
2. System is closed.
3. Proposed average and maximum injection pressure- 600 (average) and 800 (maximum).
4. The only fluid that will be injected is produced water from the nearby wells.
5. The water will be injected into a zone that is productive of oil or gas.

VIII.

1. Seven Rivers formation is part of Guadalupian Series of the Permian Period. Lithology consists of a white to light grey, finely crystalline dolomite, sometimes sucrosic. Top of the Seven Rivers in the Jennings "B" Federal No. 2 will be 3135' (+496). Gross thickness of the Seven Rivers in this area is approximately 420 feet. The Jennings "B" Federal No. 2 has 8-5/8" surface casing set at 426' to preserve fresh water aquifers found in the overlying Ogalalla formation. There are no known fresh water aquifers below the proposed water injection zone in this area.

IX.

Proposed stimulation program- acidize open hole 3100-3350' w/ 10,000 gals 15% NEHCL in 5 equal stages.

X. Test Data

The last well test was done 3-17-81, 24 hrs.,
Pumped 0 BO, 126 BW, FL 961. Well was ta'd in 5-19-81.
11-1-83- convert to injection well in Yates formation.

XI

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-8213

FILE 23-435

Operator SUN E & P CO. *691175*
Lease or Well SHEARN FED. WELL #3
Formation YATES
Perfs _____ To _____ : T.D. _____
Method of Collecting Sample HEATER TREATER

District SOUTHWESTERN
Field EAST LUSK
County LEA
State NEW MEXICO

Treatment _____
Date of last acid job _____

Collected by _____
Date 3/14/83 3-28-83
Collected Analyzed

Total Prod.	BOPD	BWPD	MCFPD

Sample No. 26019
Analyst PPI

Description of Sample 9/10 PINT CLEAR WATER.

CONSTITUENTS	ppm
Sodium	<u>6190</u>
Calcium	<u>1080</u>
Magnesium	<u>454</u>
Barium	<u>0</u>
Strontium	
Potassium	
Iron	<u>0</u>
Chloride	<u>10300</u>
Sulfate	<u>2680</u>
Carbonate	<u>0</u>
Bicarbonate	<u>859</u>
TOTAL DISSOLVED SOLIDS	<u>21563</u>

OTHER PROPERTIES	
pH	<u>7.2</u>
Specific Gravity	<u>1.0164</u>
Resistivity ohm-mtr. @ 75° F	<u>.334</u>
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as CaCO ₃ , ppm	
Sulfide	<u>PRESENT</u>
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	<u>1</u>
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

First Water sample received from this lease. Unable to classify at this time.

Future reference.

* Enclosed analyses indicate the water sampled are compatible. Should you wish to discuss these analyses further, please contact the lab.

REPORTED BY Johnny Reinschmidt

CHEMICAL ENGINEERING SECTION

Copies to: F. Brandes

T. Fox

R. Monroe

R. A. Sadler

D. Rawson

Corrosion Engineering
File

SUN 5434
SUN PRODUCTION COMPANY
PRODUCTION SERVICE LABORATORY

WATER ANALYSIS REPORT

ANALYSIS NO. C-8212

FILE 23-435

Operator SUN E & P CO. *568353*
Lease or Well JENNING FED COMM.
Formation BONE SPRING
Perfs _____ To _____; T.D. _____
Method of Collecting Sample HEATER TREATER

Treatment _____
Date of last acid job _____

Total Prod.	BOPD	BWPD	MCFPD
	<u>67</u>	<u>3</u>	

District SOUTHWESTERN
Field EAST LUSK
County LEA
State NEW MEXICO

Collected by _____
Date 3/14/83 3-28-83
Collected Analyzed

Sample No. 26025
Analyst _____ PPI _____

Description of Sample 1 PINT CLOUDY WATER WITH ORANGE SEDIMENT.

CONSTITUENTS	ppm
Sodium	<u>38800</u>
Calcium	<u>2130</u>
Magnesium	<u>1120</u>
Barium	<u>0</u>
Strontium	
Potassium	
Iron	<u>44</u>
Chloride	<u>63900</u>
Sulfate	<u>4050</u>
Carbonate	<u>0</u>
Bicarbonate	<u>131</u>
TOTAL DISSOLVED SOLIDS	<u>110175</u>

OTHER PROPERTIES	
pH	<u>6.2</u>
Specific Gravity	<u>1.0819</u>
Resistivity ohm-mtr. @ 75° F	<u>.075</u>
Loss on Ignition, ppm	
Total Solids by Evap., ppm	
Organic acids, ppm	
Hardness as CaCO ₃ , ppm	
Sulfide	<u>ABSENT</u>
Mixed Oxides (Qualitative)	
Fluoride, ppm	
Silica, ppm	
Total Iron, ppm	<u>64</u>
Nitrates, ppm	
Phosphate, ppm	

REMARKS:

First Water sample received from this lease unable to classify at this time. Future reference.

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-8214
FILE 23-435

Operator SUN E & P CO. #568356*
Lease or Well JENNINGS B FEDERAL
Formation YATES
Perfs 2950 To 60; T.D. _____
Method of Collecting Sample HEATER TREATER

District SOUTHWESTERN
Field EAST LUSK
County LEA
State NEW MEXICO

Treatment _____
Date of last acid job _____

Collected by _____
Date 3/14/83 3-28-83
Collected Analyzed

Total Prod.	BOPD	BWPD	MCFPD
	<u>25</u>	<u>100</u>	

Sample No. 26043
Analyst PPI

Description of Sample 9/10 PINT CLEAR WATER.

CONSTITUENTS	ppm
Sodium	<u>5710</u>
Calcium	<u>1140</u>
Magnesium	<u>407</u>
Barium	<u>0</u>
Strontium	<u> </u>
Potassium	<u> </u>
Iron	<u>0</u>
Chloride	<u>9600</u>
Sulfate	<u>2460</u>
Carbonate	<u>0</u>
Bicarbonate	<u>1020</u>
	<u> </u>
	<u> </u>
	<u> </u>
	<u> </u>
TOTAL DISSOLVED SOLIDS	<u>20337</u>

OTHER PROPERTIES	
pH	<u>6.9</u>
Specific Gravity	<u>1.0159</u>
Resistivity ohm-mtr. @ 75° F	<u>.343</u>
Loss on Ignition, ppm	<u> </u>
Total Solids by Evap., ppm	<u> </u>
Organic acids, ppm	<u> </u>
Hardness as CaCO ₃ , ppm	<u> </u>
Sulfide	<u>PRESENT</u>
Mixed Oxides (Qualitative)	<u> </u>
Fluoride, ppm	<u> </u>
Silica, ppm	<u> </u>
Total Iron, ppm	<u>0</u>
Nitrates, ppm	<u> </u>
Phosphate, ppm	<u> </u>
	<u> </u>
	<u> </u>

REMARKS:
First water samples received from this lease. Unable to classify at this time. Future reference.

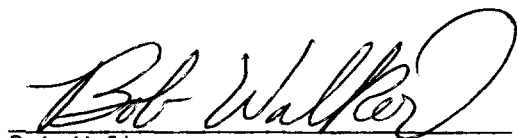
REPORTED BY: Johnny Reinschmidt

CHEMICAL ENGINEERING SECTION
Copies to:

XII.

Jennings "B" Federal #2

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.

A handwritten signature in cursive script that reads "Bob Walker". The signature is written in dark ink and is positioned above a horizontal line.

Bob Walker
Area Geologist
Sun Exploration and Production Co.

July 10, 1984
Date

III. Well Data- Attached well sketch

A.

1. Jennings "B" Federal Well #2
Section 15, T-19-S, R-32-E,
Unit Ltr. "N", 660' FSL & 1980'FWL.
2. Casing Data:
8-5/8", 24#, 426' cmtd w/ 375 sxs, Top of cmt.-Surface
hole size 12 $\frac{1}{4}$ ", 5 $\frac{1}{2}$ ", 14# 3100' cmtd w/ 505 sxs,
Top of cmt-surface, hole size 7-7/8".
3. Tubing Data:
2-3/8", 4.7#, cmt lined, 2889'+
4. Packer Otis Perma-latch Pkr w/ OSTSD w/ 1.5 "N" profile
set at 2889'+.

B.

1. Injection formation- Seven Rivers
2. Perfs- 3100-3350' Open Hole
3. Well was originally drilled as an oil well.
4. Sqzd perfs w/ 100 sxs 3012-20', Reperf 3012-18.
5. The next oil producing horizon known for this area is from
the top of the 2nd Bone Springs Limestone. This is producing
in the Jennings Federal Com. No. 1 at a depth of 9874-9890.

Jennings "B" Federal #2
History

Loc: 1980 FWL & 660' FSL, Sec. 15, T-19-S, R-32-E, Lea County, N.M.

Elevations: GL - 3621 KB-3631

Casing: 8-5/8", 24# @ 426', cmtd w/375 sx, circ 30 sx
5½", 14# @ 3100', cmtd w/505 sx, circ 35 sx

TD-3100 PBD-3074 (FC)

- 2/19/81 Perf 3012-3020, 1 JSPF
Acidized w/500 gals 15% NEFEHCL, BDP-2100,
Mx-4500, ISIP 1200, 5 BPM. Balled out after 380 gals.
Frased w/25000 gals gelled 2% KCL & 40,000# 20/40 sd.
BDP-2100, Mx-2300, ISIP-1700, 8 BPM
- 2/21/81 Swb 3 hrs rec tr. oil, 34 BLW, lge amt. of sand
CO sand, POP
- 3/17/81 24 Hrs P O B0, 126 BW FL 961 (1818 on SM)
- 5/13/81 Sqzd perfs 3012-20 w/100 sx C1 C, FP-2500, Rev out 45 sx. DO cmt and
retainer, CO Sd to 3074'.
- 5/16/81 Reperforated 3012-18, 7 holes, swabbed 1/4 hr, no FE
Acidized w/500 gals 15% NEFEHCL BDP-1250, Mx-1600, ISIP-750
Swab 3 hrs Rec 0 B0, 25 BLAW FL-2924
Est FE 4 BPH. Swabbed 7 hrs. Rec 0 B0, 13 BLAW, 23 BW FL-1000 to 2924.
- 5/19/81 Swab 2 hrs, Rec 0 B0, 12 BW, FL 700 to 2900.
Well was TA'd.
- 11/1/83 Tag btm - 3065'. Added perfs 2986-3004, 3050-60 and reperfed 3012-18 w/2 JSPF.
Acidized perfs 2986-3060 w/4000 gals 15% NEHCL in 2 stgs w/75 ball sealers and
and 250# GRS. BDP-700, Mx-2600, Avg-2250, ISI-1500, 4 BPM.
Established inj. rate into Yates, 1 BPM @ 600 psi, w/20 bbls lease wtr.
RIH w/Otis permalatch pkr w/OSTSD, 1.5 'N' profile, on 2-3/8" cmt lined tbg,
circ ann. w/pkr fluid, set pkr @ 2889'. Estab. inj. rate into perfs 1 BPM @
600#, amt. of wtr. used not known.
- 3/14/84 Hooked-up well to surf. inj. equip. Inj. pressure was 1250 psi. and increas-
ing. (Limited to 600 psi). Well was acidized w/1000 gals 15% NEHCL at 1½ BPM,
Avg-1750#, Mx-1900. Inj. press still too high after acid job. Well SI.

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL

FIELD

DATE

Jennings' B Fed #2 WPM North East Lusk Yates

4/6/84

PRESENT COMPLETION



SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

GL-3621

8 5/8" 24# @ 426' cmt'd w/ 375 sx,
circ 30 sx.

5 1/2" 14# @ 3100' cmt'd w/
540 sx, circ 35 sx.

TD-3100' PBD-3065

DATA ON THIS COMPLETION

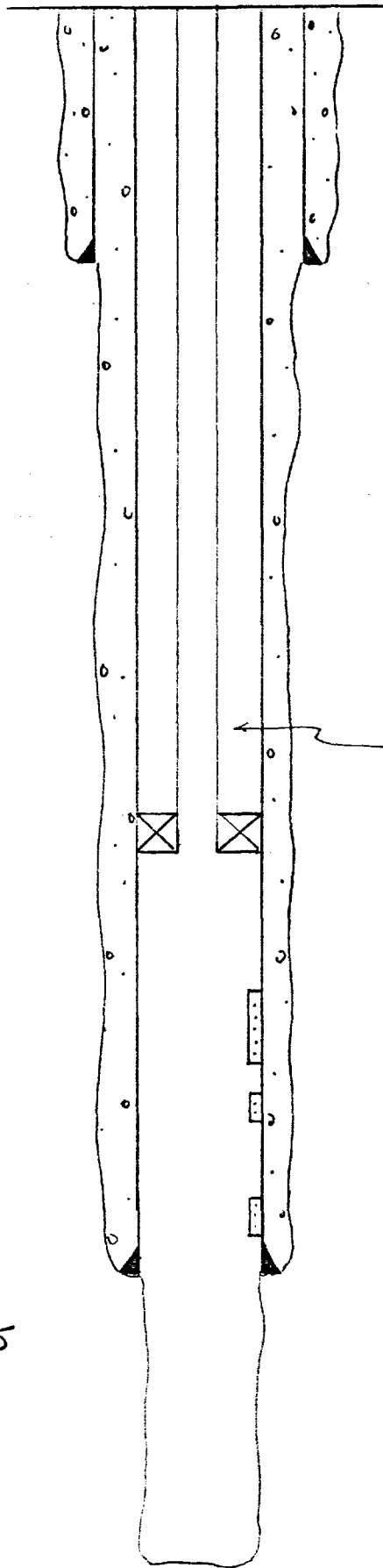
2 3/8" 4.7# Cmt Lined Tbg
OTIS Perma-tatch Pkr @
2889' (btm 2895') w/ OSTSD w/
1.5" N' Profile

Yates Perforations
2986 - 3004 (25PF)

3012 - 18 (25PF)

3050 - 60 (25PF)

* Recommend deepening well
approx 250' thru the Seven
Rivers zone.
New TD - 3350' 1 3/4" O.H.



JENNINGS "B" FEDERAL #2

Surface owner for this well is the Bureau of Land Management (since this well is a federal well). A copy of the application has been mailed to them for their records.

AFFIDAVIT OF PUBLICATION

State of New Mexico,

County of Lea.

1, _____

Robert 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.

Beginning with the issue dated

June 13, 19 84

and ending with the issue dated

June 13, 19 84

Robert L. Summers
Publisher.

Sworn and subscribed to before

me this 14 day of

June, 19 84
Jane Paulowsky
Notary Public.

My Commission expires

3-24, 19 87

(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.

33 LEGAL NOTICE
SUN, JUN 14, 1984
Sun, P.O. Box 1801, Hobbs, New Mexico 88240, (contact party, John Monroe (915) 382-1111) has applied to the New Mexico Oil Conservation Division for approval to inject water into a formation which is productive of oil or gas. The proposed injection is the Jennings, Pecos lease, Well No. 2, located in Section 15, T. 2 S., R. 1 E., Lea County, New Mexico. This well is connected into the Yates formation. Sun plans to extend injection into the Severn, Pecos formation, and to inject water or fluid into the Jennings formation with the injection rate of 10 barrels a day at the maximum pressure 200 pounds per square inch. Interested parties must file written requests for hearing with the Oil Conservation Division, P.O. Box 1801, Santa Fe, New Mexico 87501.





**Sun Exploration and
Production Company**
No 24 Smith Road
ClayDesta Plaza
PO Box 1861
Midland TX 79702 9970
915 688 0300

July 18, 1984

Petroleum Development Corporation
9720-B Candelaria Road
Albuquerque, New Mexico 87112

Re: 15 day Notice
Injection Application
Jennings "B" Federal #2

Gentlemen:

Sun Exploration & Production Company is filing to obtain permission from the New Mexico Oil Conservation Division to expand the injection interval to the Seven Rivers formation. The well is already injecting into the Yates formation. Attached is a copy of the application since your company has lease holdings within the one-half mile reviewing radius of our well.

If you have any objections to our application, please notify the New Mexico Oil Conservation Division within fifteen days.

If you need additional information, please contact me at (915) 688-0374.

Very truly yours,

Dee Ann Kemp
Associate Accountant

DAK:js

Mailed to effect by certified mail 7-20-84.
Dee Ann Kemp