



SKELLY OIL COMPANY

October 10, 1975

428

428

DOMESTIC EXPL. & PROD. DEPARTMENT

MIDLAND E & P DISTRICT

ADDRESS REPLY TO:

P. O. BOX 1351

MIDLAND, TEXAS 79701

F. L. FRANZ, DISTRICT PRODUCTION MANAGER

M. J. EKMAN, DISTRICT ENGINEER

C. F. BOSECKER, LEAD RESERVOIR ENGINEER

F. J. PETRO, LEAD PRODUCTION ENGINEER

File: Lea "C" Waterflood Project
Lease No. 66818
Eddy County, New Mexico

Re: Application for Waterflood Expansion

New Mexico Oil Conservation Commission (3)
State Land Office Building
P. O. Box 2088
Santa Fe, New Mexico

Attention: Secretary-Director

Skelly Oil Company respectfully requests administrative approval to expand its Lea "C" Waterflood in the Grayburg-Jackson Pool, Eddy County, New Mexico. The Lea "C" Waterflood was authorized by N.M.O.C.C. Order No. R-4697 dated January 15, 1974.

The subject waterflood is governed by the provisions of Rules 701, 702 and 703 of the commission rules and regulations; provided however, that the Secretary-Director of the Commission may approve expansion of the project to include such additional injection and producing wells at orthodox or unorthodox locations in said project as may be necessary to complete an efficient injection pattern.

Skelly initiated injection on the Lea "C" lease on May 8, 1974 by injecting into Wells No. 4, 7 and 9. Response to injection occurred in Well No. 8 in March 1975 and in Well No. 1 in June 1975.

Skelly now desires administrative approval to convert the following described wells in Section 11, Township 17 South, Range 31 East to water injection:

Well No. 2 - Unit B
Well No. 11 - Unit L

Attached is a map showing the producing horizons in all wells within a two mile radius, the present and proposed injection wells, a schematic diagram and copy of the logs on the wells proposed for injection service, an analysis of the water to be injected, copies of the C-115's which verify response, and copies of approved forms that were filed with the USGS indicating their approval.

Injection water will be purchased from the Double Eagle Water Company, which is produced from the Ogallala formation and pressured by our Skelly Unit Water Injection Plant No. 1. Packers will be run in the wells and the annular space between the casing and tubing filled with water treated with corrosion inhibitor, and a pressure guage will be installed on the annulus to facilitate leak detection. The tubing will be internally lined so that no bare metal is contacted by the injected water.

The volumes of water injected are anticipated to be between 200 and 500 BWPD at a wellhead pressure 1850 psig.

Compensating injection for Well No. 2 along the north common boundary is not expected to be obtainable because of the one well ownership of offsetting wells, however, we feel the benefits of converting Well No. 2 will far outweigh the loss by not having offset compensating injection. Injection on the west common boundary is compensated for by Atlantic Richfield's H. E. West "B" No. 24.

Offset Operators have been sent a copy of this application.

Yours very truly,

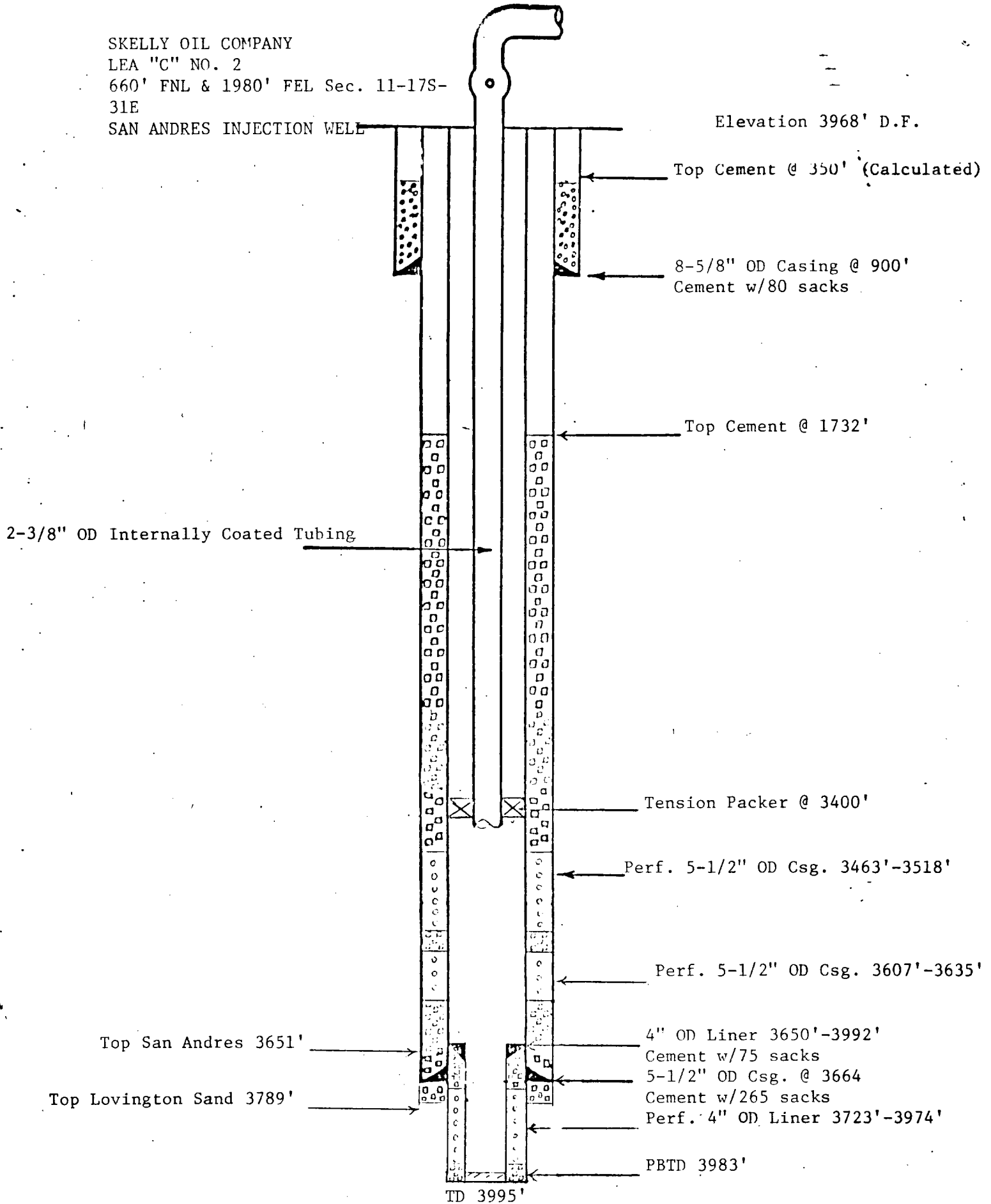
A handwritten signature in cursive script, reading "Leland Franz".

Leland Franz
District Production Manager

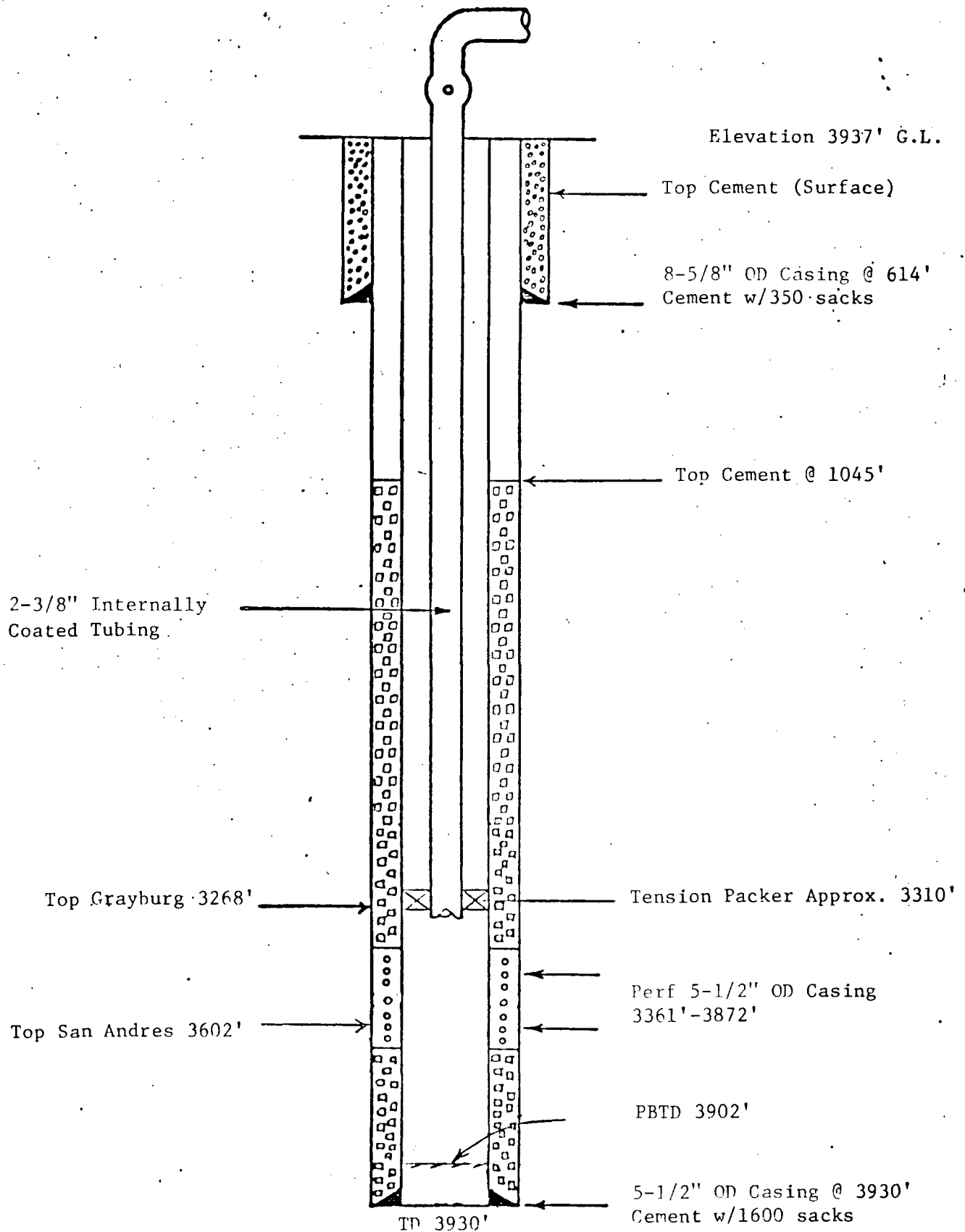
BOB/ss
Attachs.

SKELLY OIL COMPANY
LEA "C" NO. 2
660' FNL & 1980' FEL Sec. 11-17S-
31E
SAN ANDRES INJECTION WELL

Elevation 3968' D.F.



LEA "C" NO. 11
1980' FSL&660' FWL Section 11-17S-31E
GRAYBURG SAN ANDRES INJECTION WELL



EXXON CHEMICAL COMPANY U.S.A.
SPECIALTIES LABORATORY



8230 Stedman, Houston, Texas 77029

August 20, 1973

WATER ANALYSIS

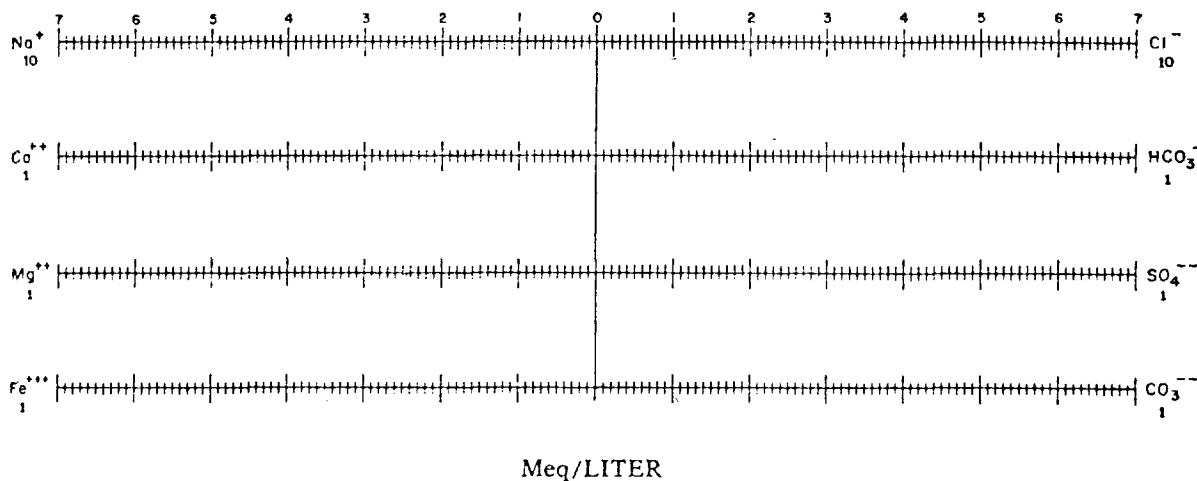
SAMPLE DESCRIPTION: Water sample from Skelly Unit WF #1 plant inlet submitted for routine correlation and stability to CaCO_3 . Sample taken 8-15-73.

COMPANY: Skelly Oil Company
STSR NUMBER: 873100 page 2
REQUESTED BY: Harold Langen

DATE RECEIVED: 8-16-73
ANALYZED BY: Gene Keil

| | <u>Mg/L</u> | <u>Meq/L</u> | | |
|----------------|-------------|--------------|-------------------------------------|-------------|
| Sodium | 36 | 1.5 | pH | 7.15 |
| Calcium | 71 | 3.6 | Specific Gravity at <u>60</u> °F. | 1.0016 |
| Magnesium | 13 | 1.1 | Resistivity ohms/m @ 77 F | 15.38 |
| Chloride | 44 | 1.2 | | <u>Mg/L</u> |
| Sulfate | 118 | 2.5 | Oil Content | |
| Bicarbonate | 151 | 2.5 | Organic Matter | |
| Carbonate | 0 | 0.0 | Hydrogen Sulfide | 0 |
| Hydroxide | 0 | 0.0 | Total Alkalinity as CaCO_3 | 124 |
| | | | Supersaturation as CaCO_3 | - |
| TOTAL | 433 | | Undersaturation as CaCO_3 | 20 |
| Dissolved Iron | | | | |
| Total Iron | 0.44 | 0.0 | | |

WATER PATTERN (Stiff Method)



Remarks:

NEW MEXICO OIL CONSERVATION COMMISSION

BOX 2088 SANTA FE, NEW MEXICO
OPERATOR'S MONTHLY REPORT

Operator: SKELLY OIL COMPANY 7 (Address) P. O. Box 1351, Midland, Texas FOR MONTH AUG 1975 24

| WELL NO. UNIT SEC. TWP. RND. | LEASE NAME (UNDERLINE) | STATE | TOTAL LIQUIDS PRODUCED | | | GAS PRODUCED MCF | DAYS PROD. | DISPOSITION OF GAS | | | | | DISPOSITION OF OIL | | | | |
|--|------------------------|-------|------------------------|-------------------------|---------------------------|------------------|------------|--------------------|---------------|------|--------|-------|--------------------|---------------------------|--------------------------|-------|---------|
| | | | MONTHLY OIL ALLOWABLE | ACTUAL BARRELS PRODUCED | BARRELS OF WATER PRODUCED | | | VENTED | USED ON LEASE | SOLO | PURCH. | OTHER | C O D E | OIL ON HAND BEG. OF MONTH | BARRELS TO TRANS. PORTER | OTHER | C O D E |
| LEASE NAME AND STATE LAND LEASE NUMBER OR FEDERAL LEASE NUMBER | | | | | | | | | | | | | | | | | |
| <u>Grayburg Jackson - Eddy</u> | | | | | | | | | | | | | | | | | |
| <u>Lea "C" - LC 029418-b</u> | | | | | | | | | | | | | | | | | |
| 1 C 11 17 31 | P | 465 | 680 | 3318 | 2716 | 31 | 3994 | | | | | | | | | | |
| 2 B 11 17 31 | P | 372 | 107 | 27 | 86 | 31 | 804 | | | | | | | | | | |
| 3 D 11 17 31 | P | 403 | 72 | 161 | 341 | 31 | 4736 | | | | | | | | | | |
| 4 J 11 17 31 | I | | Water Injection Well | | | | | | | | | | | | | | |
| 5 O 11 17 31 | P | 217 | 179 | 0 | 166 | 31 | 727 | | | | | | | | | | |
| 6 G 11 17 31 | P | 527 | 250 | 130 | 37 | 31 | 148 | | | | | | | | | | |
| 7 F 11 17 31 | I | | Water Injection Well | | | | | | | | | | | | | | |
| 8 K 11 17 31 | P | 8711 | 2434 | 1485 | 29 | 31 | 12 | | | | | | | | | | |
| 9 N 11 17 31 | I | | Water Injection Well | | | | | | | | | | | | | | |
| 10 E 11 17 31 | P | 217 | 537 | 773 | 198 | 31 | 369 | | | | | | | | | | |
| 11 L 11 17 31 | P | 837 | 286 | 0 | 367 | 31 | 1283 | | | | | | | | | | |
| 12 M 11 17 31 | P | 217 | 466 | 0 | 185 | 31 | 397 | | | | | | | | | | |

STATUS CODE: OTHER GAS DISPOSITION CODE: OTHER OIL DISPOSITION CODE: I HEREBY CERTIFY THAT THE INFORMATION GIVEN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

Lead Clerk - D. R. CROW SEP 25 1975

NEW MEXICO OIL CONSERVATION COMMISSION BOX 2088 SANTA FE, NEW MEXICO OPERATOR'S MONTHLY REPORT

Operator or Directly: SKELLY OIL COMPANY 7 Address: P. O. Box 1351, Midland, Texas FOR MONTH AUG 1975 Page 25

| WELL NO. UNIT SEC. TWP. RMO. | WELL STATUS | TOTAL LIQUIDS PRODUCED | | | GAS PRODUCED MCF | DAYS PROD. | DISPOSITION OF GAS | | | | | DISPOSITION OF OIL | | | | |
|---------------------------------------|-------------|------------------------|-------------------------|---------------------------|------------------|------------|--------------------|---------------|------|--------|-------|---------------------------|--------------------------|-------|---------------|--------------------------|
| | | MONTHLY OIL ALLOWABLE | ACTUAL BARRELS PRODUCED | BARRELS OF WATER PRODUCED | | | VENTED | USED ON LEASE | SOLD | PURCH. | OTHER | OIL ON HAND SEC. OF MONTH | BARRELS TO TRANS. PORTER | OTHER | TRANS. PORTER | OIL ON HAND END OF MONTH |
| Grayburg Jackson - Eddy - (Continued) | | | | | | | | | | | | | | | | |
| Lea "C" - LC 029418-b | | | | | | | | | | | | | | | | |
| 13 P 11 17 31 | P | 155 | 107 | 0 | 60 | 31 | 561 | | | | | | | | | |
| 14 I 11 17 31 | P | 124 | 72 | 0 | 60 | 31 | 333 | | | | | | | | | |
| 15 H 11 17 31 | P | 155 | 107 | 80 | 94 | 31 | 879 | | | | | | | | | |
| 16 A 11 17 31 | P | 124 | 72 | 0 | 332 | 31 | 4611 | | | | | | | | | |
| Lease Total | | 12524 | 5369 | 5974 | 4671 | | | 4671 | CON | | | 759 | 5317 | | | 811 |

STATUS CODE: OTHER GAS DISPOSITION CODE: OTHER OIL DISPOSITION CODE: I HEREBY CERTIFY THAT THE INFORMATION GIVEN IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE. SEP 25 1975

Submitted in Lieu of Form 9-329 Lead Clerk (Signature) (Date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN TRIPLICATE*
(Other instructions on reverse side)Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

LC-029418(b)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Lea "C"

9. WELL NO.

2

10. FIELD AND POOL, OR WILDCAT

Grayburg-Jackson

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Sec. 11-17S-31E

12. COUNTY OR PARISH

Eddy

13. STATE

New Mexico

1.

OIL WELL ☐ GAS WELL ☐ OTHER ☒

Water Injection

2. NAME OF OPERATOR

Skelly Oil Company

3. ADDRESS OF OPERATOR

P. O. Box 1351, Midland, Texas 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)

See also space 17 below.
At surface

Unit Letter B, 660' PNL & 1980' FEL, Sec. 11-17S-31E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

3968' DF

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐FRACTURE TREAT ☐SHOOT OR ACIDIZE ☐REPAIR WELL ☐

(Other) Convert to Water Injection

PULL OR ALTER CASING ☐MULTIPLE COMPLETION ☐ABANDON* ☐CHANGE PLANS ☐

X

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐FRACTURE TREATMENT ☐SHOOTING OR ACIDIZING ☐(Other) ☐REPAIRING WELL ☐ALTERING CASING ☐ABANDONMENT* ☐

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Skelly Oil Company respectfully requests that administrative approval be granted to do the following work as designated by New Mexico Oil Conservation Commission Order No. R-4697 dated January 15, 1974. This conversion is necessary to continue the orderly development of the injection pattern.

- 1) Move in workover rig. Pull rods and tubing.
- 2) Load wellbore with 500 gals. 15% HCl acid.
- 3) Set coated injection tubing with packer set at \pm 3425' and load tubing casing annulus with treated water.
- 4) Place well on injection status, injecting water thru Grayburg San Andres perms. 3463-3974'.

SKELLY OIL COMPANY
FXPL. & PROD. DEPT.

SEP 24 1975

MIDLAND E&P DISTRICT

RECEIVED

SEP 22 1975

U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

(signed) D. R. Crow D. R. Crow

SIGNED

TITLE

Lead Clerk

DATE

9-19-75

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

DISTRICT OFFICE
SEP 24 1975

*See Instructions on Reverse Side

cc Crockett 9-24-75

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN THE MANNER INDICATED
(Other instructions on reverse side)Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

LC-029418(b)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Lea "C"

9. WELL NO.

11

10. FIELD AND POOL, OR WILDCAT

Grayburg-Jackson

11. SEC., T., R., M., OR BLK. AND
SURVEY OR AREA

Sec. 11-17S-31E

12. COUNTY OR PARISH

Eddy

13. STATE

New Mexico

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)1. OIL WELL ☐ GAS WELL ☐ OTHER ☒ Water Injection

2. NAME OF OPERATOR

Skelly Oil Company

3. ADDRESS OF OPERATOR

P. O. Box 1351, Midland, Texas 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*

See also space 17 below.)

At surface

Unit Letter L, 1980' FSL and 660' FWL, Sec. 11-17S-31E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

3938' DF

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐FRACTURE TREAT ☐SHOOT OR ACIDIZE ☐REPAIR WELL ☐(Other) Convert to Water Injection ☒PULL OR ALTER CASING ☐MULTIPLE COMPLETE ☐ABANDON* ☐CHANGE PLANS ☐

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐FRACTURE TREATMENT ☐SHOOTING OR ACIDIZING ☐(Other) ☐REPAIRING WELL ☐ALTERING CASING ☐ABANDONMENT* ☐(NOTE: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

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- 4) Place well on injection status, injecting water thru Grayburg San Andres perms. 3361-3872'.

SKELLY OIL COMPANY
FXPL. & PROD. DEPT.

SEP 24 1975

MIDLAND E&P DISTRICT

18. I hereby certify that the foregoing is true and correct

(signed) D. R. CROW. R. Crow

SIGNED

TITLE Lead Clerk

TITLE

DATE 9-19-75

DATE

(This space for Federal or State office use)

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

*See Instructions on Reverse Side

RECEIVED

SEP 22 1975

U.S. GEOLOGICAL SURVEY
ARTES. A. NEW MEXICO

9-19-75

ADD

SEP 25 1975

D. L. BREKIDG
ACTING DISTRICT ENGINEERDISTRICT OFFICE
MIDLAND
NEW MEXICO

cc Crockett 9-24-75

Kennedy Oil Company

— OIL PRODUCERS —

P. O. Box 151

Artesia, New Mexico

October 15, 1975

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico

Attention: Secretary-Director

File: Lea "C" Waterflood Project Skelly Oil Company
Lease No. 66818
Eddy County, New Mexico

Re: Application for Waterflood Expansion

Gentlemen:

Please be advised that we waive our right of objection for the waterflood expansion of Skelly Oil Company, on their Lea "C" Waterflood Project.

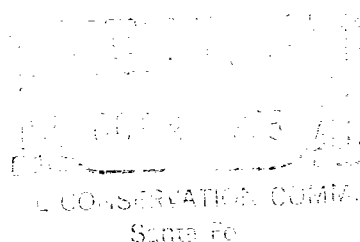
We support this application of Skelly Oil Company.

Very truly yours,

Kennedy Oil Company


Robert B. Kennedy

cc: Skelly Oil Company



Arwood, Ltd.

P. O. BOX 64548
DALLAS, TEXAS 75206

October 16, 1975

PHONE 823-5971

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico

Re: Skelly Oil Company
Lease No. 66818
Eddy County, New Mexico
Waterflood Expansion

Gentlemen:

This is to advise you that we waive our right of objection to the proposed waterflood program by Skelly Oil Co. to convert their wells No. 2 & 11 Sec. 11 T17S R31E to injection wells.

Yours very truly,

ARWOOD, LTD.

Frazier Arwood

Frazier Arwood

FA/d

AtlanticRichfieldCompany

North American Producing Division
Permian District
Post Office Box 1610
Midland, Texas 79701
Telephone 915 682 8631



October 16, 1975

New Mexico Oil Conservation Commission
State Land Office Building
P. O. Box 2088
Santa Fe, New Mexico 88201

Attn: Secretary-Director

Re: Skelly Oil Company's
Application for Waterflood Expansion

Gentlemen:

We have no objection to the proposed expansion by Skelly Oil Company of their Well No. 2 and Well No. 11 in Unit B and Unit L of Section 11, Township 17 South, Range 31 East.

Very truly yours,

J. L. Tweed
District Engineer

JLT/agp

OIL CONSERVATION COMMISSION
Artesia DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE 10-16-75

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

Gentlemen:

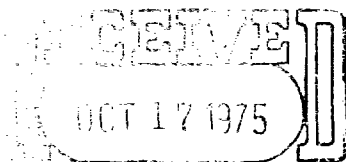
I have examined the application dated 10-10-75
for the Skelly Oil Co. Lea C #2-B+11-L 11-17-31
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approval on receipt of Waivers

Yours very truly,

W.A. Grasset



OIL CONSERVATION COMM.
Santa Fe

LARGE FORMAT
EXHIBIT HAS
BEEN REMOVED
AND IS LOCATED
IN THE NEXT FILE