



Getty Oil Company | P.O. Box 1351, Midland Texas 79702 • Telephone: (915) 683-4881

Exploration and Production

448 449
April 28, 1977

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

Re: Application for Waterflood Expansion

New Mexico Oil Conservation Commission (3)
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Joe D. Ramey, Secretary-Director

Gentlemen:

Getty Oil Company respectfully requests administrative approval to expand it's Lea "C" Waterflood Project in the Grayburg-Jackson Pool, Eddy County, New Mexico. This project was authorized by New Mexico Oil Conservation Commission Order No. R-4697 dated January 15, 1974. L

The subject waterflood project is governed by provisions of Rules 701, 702 and 703 of the Commission Rules and Regulations. The original order provides that the Secretary-Director of the Commission may administratively approve expansion of the Lea "C" Waterflood Project to include such additional injection wells in the area of said project as may be necessary to complete an efficient injection pattern to insure maximum recovery. Getty Oil Company now desires approval to convert the following wells located in Section 11, T-17-S, R-31-E.

Well No. 13, Unit Letter P, 660' FSL & 660' FEL
Well No. 15, Unit Letter H, 1980' FNL & 660' FEL

Listed below are the supportive exhibits, which are attached.

EXHIBIT A: Producing zones map, showing all wells within a two mile radius, also shows present and proposed injection wells in this project.

Page 2

EXHIBIT B: Marked Neutron Porosity Logs of the proposed injection wells.

EXHIBIT C: Schematic diagrams of casing and cement for proposed injection wells.

EXHIBIT D: Analysis of the water to be injected.

EXHIBIT E: Copy of the approval of the U. S. Geological Survey.

The injection water will be purchased from the City of Carlsbad, which is produced from the Ogallala formation and pressured by Getty's Skelly Unit Water Injection Plant No. 1. Packers will be set in the wells and the casing-tubing annulus will be filled with corrosion inhibiting fluid with a pressure gauge on the annulus to facilitate leak detection. The volumes of water injected are anticipated to be between 200 and 500 barrels of water per day at an average wellhead pressure of 1850 psig.

Offset operators are being notified by copies of the application. Mailing list is attached.

Yours very truly,

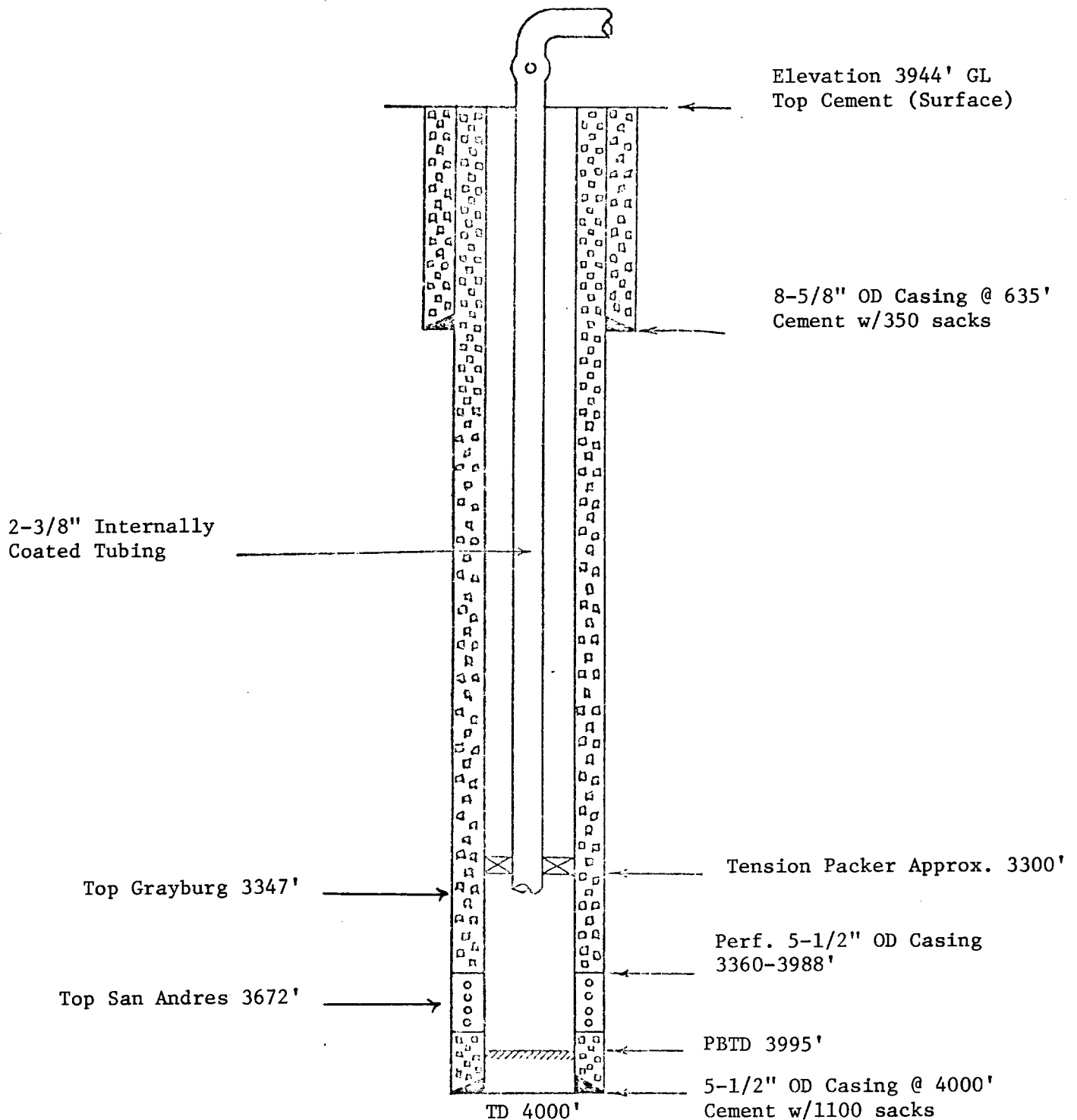
Audra B. Cary

Audra B. Cary
District Production Manager

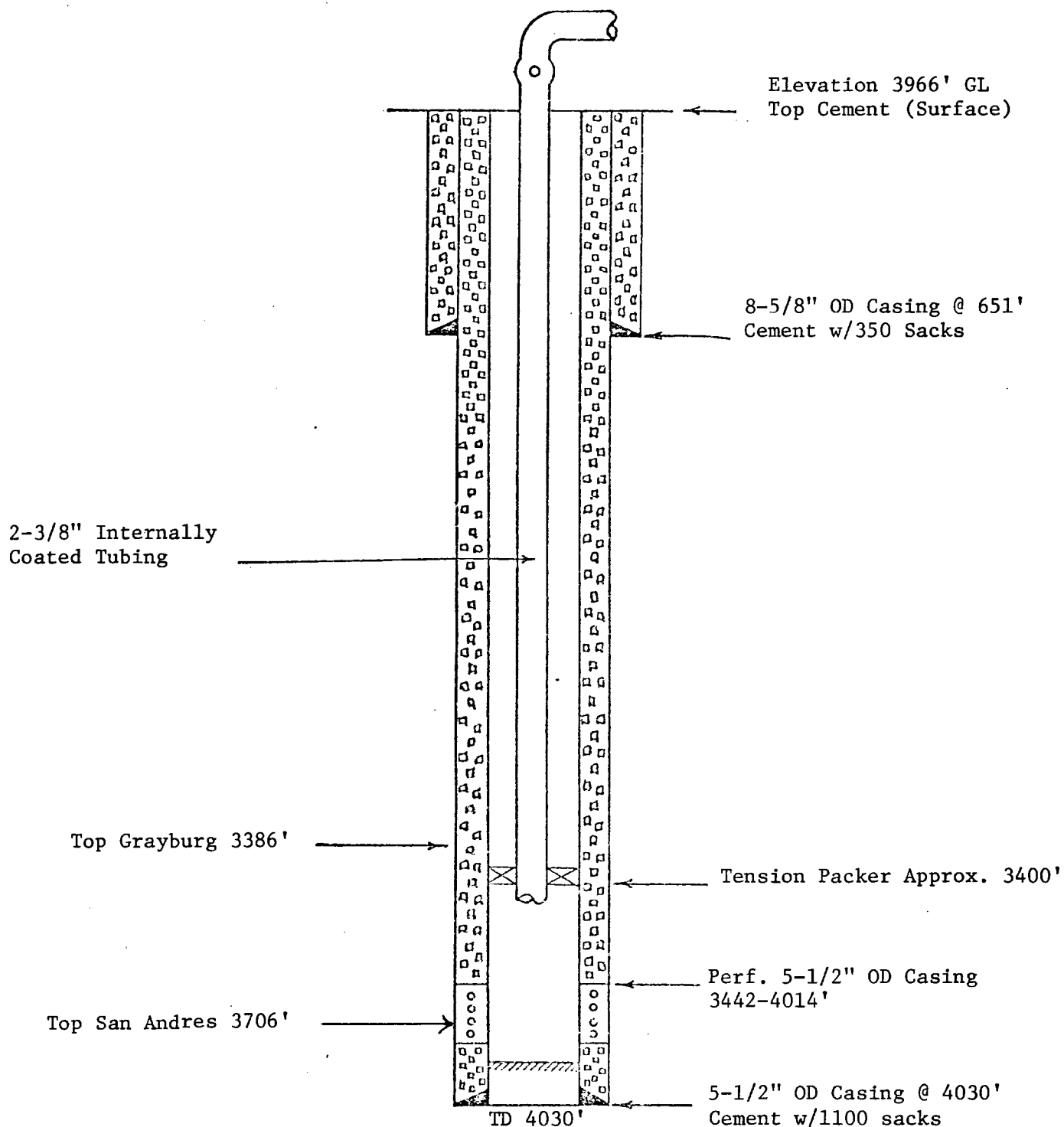
DLH:cs
Attachments
cc: D. R. Crockett

1. 2000

GETTY OIL COMPANY
 Exhibit C
 Lea "C" Well No. 13
 660' FSL & 660' FEL Section 11, T-17-S, R-31-E
 Grayburg-Jackson Injection Well



GETTY OIL COMPANY
Exhibit C
Lea "C" Well No. 15
1980' FNL & 660' FEL Section 11, T-17-S, R-31-E
Grayburg-Jackson Injection Well



EXXON CHEMICAL COMPANY U.S.A.
SPECIALTIES LABORATORY



8230 Stedman, Houston, Texas 77029

August 20, 1973

WATER ANALYSIS

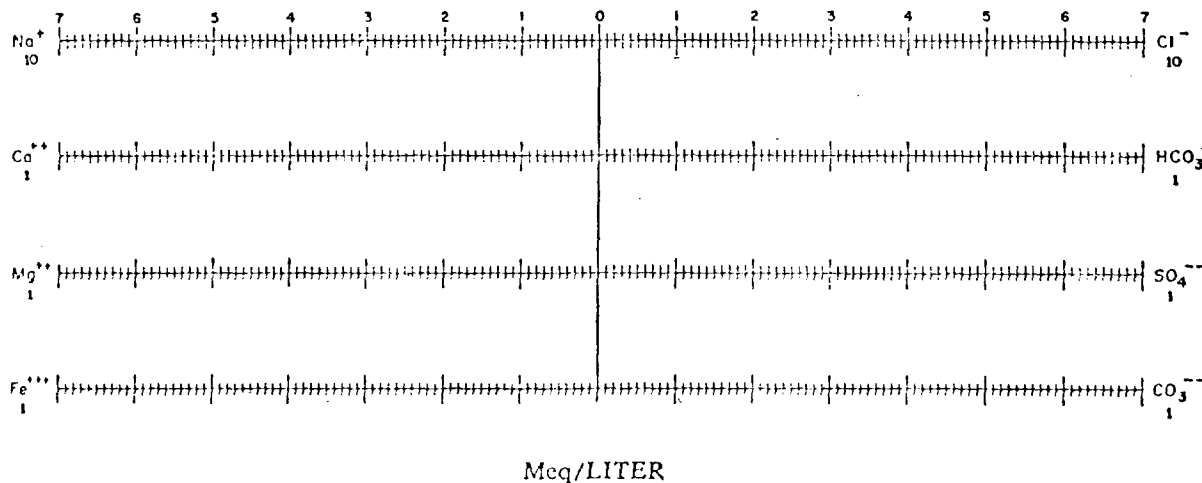
SAMPLE DESCRIPTION: Water sample from Skelly Unit WF #1 plant inlet submitted for routine correlation and stability to CaCO_3 . Sample taken 8-15-73.

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:



Getty Oil Company | P.O. Box 1351, Midland Texas 79702 • Telephone: (915) 683-4881

Exploration and Production

April 7, 1977

File: Lea "C" Lease General
Lease No. 66818
Grayburg-Jackson Pool
Eddy County, New Mexico
LC-029418(b)

United States Geological Survey (3)
P. O. Drawer 1857
Roswell, New Mexico 88201

Attn: Director

RECEIVED

APR 12 1977

U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

Gentlemen:

Getty Oil Company respectfully requests approval to convert Wells No. 13 and 15 on the above captioned lease to water injection service. This proposal was first presented in the Report of Past Operations and Plans of Development and Operation for 1977 filed with your office November 1, 1976, and accepted for record November 9, 1976. The proposed work is outlined on enclosed Form 9-331.

If we can be of further assistance, please contact this office.

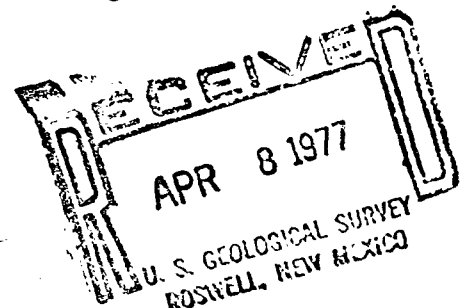
Yours very truly,

Audra B. Cary

Audra B. Cary
District Production Manager

DLH:cw
Enclosures

*Approval granted to expand
the Lea "C" water pump
to include the above wells.
J. F. Buchanan
APR 18 1977*



DISTRICT OFFICE
FILE COPY

**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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 <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Water Injection</u>		5. LEASE DESIGNATION AND SERIAL NO. <u>LC-029413(b)</u>	
2. NAME OF OPERATOR <u>Gatty Oil Company</u>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME 	
3. ADDRESS OF OPERATOR <u>P. O. Box 1351, Midland, Texas 79702</u>		7. UNIT AGREEMENT NAME 	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) <u>At surface</u> <u>Unit Letter P, 660' FSL & 660' VEL, Sec. 11 - 17S - 31E</u>		8. FARM OR LEASE NAME <u>Lea "C"</u>	
14. PERMIT NO.		10. FIELD AND POOL, OR WILDCAT <u>Grayburg-Jackson</u>	
15. ELEVATIONS (Show whether DF, RT, GR, etc.) <u>3952' DF</u>		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA <u>Sec. 11 - 17S - 31E</u>	
		12. COUNTY OR PARISH <u>Eddy</u>	
		13. STATE <u>New Mexico</u>	

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

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> SHOOT OR ACIDIZE <input type="checkbox"/> REPAIR WELL <input type="checkbox"/> (Other) <u>Convert to Water Injection</u>	PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPLETE <input type="checkbox"/> ABANDON* <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/>
---	---

SUBSEQUENT REPORT OF:

WATER SHUT-OFF <input type="checkbox"/> FRACTURE TREATMENT <input type="checkbox"/> SHOOTING OR ACIDIZING <input type="checkbox"/> (Other) <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> ABANDONMENT* <input type="checkbox"/>
---	---

(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.)*

Gatty Oil Company respectfully requests that administrative approval be granted to perform 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) Clean out to 3938' PBD.
- 3) Set lined injection tubing and packer at \pm 3300'
- 4) Load tubing-casing annulus with treated water
- 5) Return well to active status injecting Grayburg-San Andres perfs. 3360-3938'.

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

(signed) D. R. Crow **SIGNED** D. R. Crow **TITLE** Lead Clerk **DATE** April 7, 1977

(This space for Federal or State office use)

APPROVED BY _____ **TITLE** _____ **DATE** _____

CONDITIONS OF APPROVAL, IF ANY:

APR 19 1977

E. L. GERRARD
ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

DISTRICT OFFICE
FILE COPY

OPERATOR'S COPY
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

<p>1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Water Injection</p> <p>2. NAME OF OPERATOR Getty Oil Company</p> <p>3. ADDRESS OF OPERATOR P. O. Box 1351, Midland, Texas 79702</p> <p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface Unit Letter N, 1980' F.L., & 660' F.L., Sec. 11-17S-31E</p> <p>14. PERMIT NO. 15. ELEVATIONS (Show whether DF, RT, GR, etc.) 3974' DF</p>	<p>5. LEASE DESIGNATION AND SERIAL NO. LC-029418(b)</p> <p>6. IF INDIAN, ALLOTTEE OR TRIBE NAME</p> <p>7. UNIT AGREEMENT NAME</p> <p>8. FARM OR LEASE NAME Lea "C"</p> <p>9. WELL NO. 15</p> <p>10. FIELD AND POOL, OR WILDCAT Grayburg-Jackson</p> <p>11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 11 - 17S - 31E</p> <p>12. COUNTY OR PARISH 13. STATE Eddy New Mexico</p>
--	---

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETION <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	(Other) <input type="checkbox"/>

(Other) **Convert to Water Injection**

(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.)*

Getty Oil Company respectfully requests that administrative approval be granted to perform 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) Clean out to 4025' FSTD.
- 3) Set lined injection tubing and packer at \pm 3400'.
- 4) Load tubing-casing annulus with treated water
- 5) Return well to active status injecting water thru Grayburg-San Andres perms. 3442-4014'.

RECEIVED

APR 12 1977

U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

ILLEGIBLE

18. I hereby certify that the foregoing is true and correct
(signed) **D. R. Crow** **D. R. Crow** TITLE **Lead Clerk** DATE **April 7, 1977**
SIGNED _____
(This space for Federal or State-office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

APR 18 1977
APPROVED
AT ENGINEER

*See Instructions on Reverse Side

DISTRICT OFFICE
FILE COPY

Lea "C" Waterflood Project Expansion
Mailing List

Arwood, LTD.
P. O. Box 64548
Dallas, Texas 75206

Atlantic Richfield Company
P. O. Box 1610
Midland, Texas 79702

Hudson and Hudson Et Al
1000 First National Bank Building
Fort Worth, Texas 76102

Kennedy Oil Company, Inc.
P. O. Box 151
Artesia, New Mexico 88210

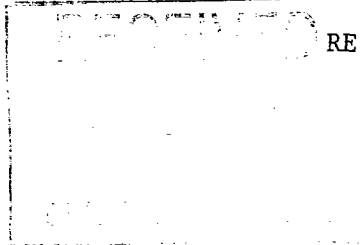
Mountain States Petroleum Corp.
P. O. Box 1936
Roswell, New Mexico 88201

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

OIL CONSERVATION COMMISSION
Artesia DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE 5-13-77



Proposed MC	_____
Proposed DHC	_____
Proposed NSL	_____
Proposed SWD	_____
Proposed WFX	<u>X</u>
Proposed PMX	_____

Gentlemen:

I have examined the application dated 4-28-77
for the Getty oil Co Lease #13-P & 15-H 11-17-31
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approval

Yours very truly,

W. A. Gressett