

Case No.

3467

---

Application, Transcripts,  
Small Exhibits, Etc.

**OIL CONSERVATION COMMISSION**

P. O. BOX 2088

**SANTA FE, NEW MEXICO**

**October 18, 1966**

**Mr. Ronald Jacobs  
Shelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma**

**Dear Sir:**

Reference is made to Commission Order No. R-3124, recently entered in Case No. 3467, approving the Shelly Lovington Padlock Waterflood Project.

Injection is to be through the 22 authorized water injection wells which shall be equipped with the plastic-coated tubing and with packers which shall be set approximately 75 feet above the uppermost perforation or in the case of open hole completions, approximately 75 feet above the casing shoe.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 6238 barrels per day when the Southeast New Mexico waterflood allowable factor is 42. This is based on a total of 22 tracts with injection wells and 60 producing tracts. Also included is an acreage adjustment factor of + 1.175 40-acre tract and a depth factor of 1.77 for computing allowable.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the commission and the appropriate district proration office.

**OIL CONSERVATION COMMISSION**

**P. O. BOX 2088**

**SANTA FE, NEW MEXICO**

**-2-**

**Mr. Ronald Jacobs  
Tulsa, Oklahoma**

**C  
O  
P  
Y**

**In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 761, it behooves him to promptly notify both of the aforementioned commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.**

**Your cooperation in keeping the commission so informed as to the status of the project and the wells therein will be appreciated.**

**Very truly yours,**

**A. L. POSTER, Jr.  
Secretary-Director**

**ALP/BSM/lr**

**cc: Mr. Frank Irby  
State Engineer Office  
Santa Fe, New Mexico**

**Oil Conservation Commission  
Artesia, and Hobbs, New Mexico**

**BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO**

**IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:**

**CASE No. 3467  
Order No. B-3124**

**APPLICATION OF SKELLY OIL COMPANY  
FOR A WATERFLOOD PROJECT, LEA COUNTY,  
NEW MEXICO.**

**ORDER OF THE COMMISSION**

**BY THE COMMISSION:**

This cause ~~came~~ on for hearing at 9 a.m. on September 28, 1966, at Santa Fe, New Mexico, before Examiner Elvis A. Witz.

NOW, on this 30th day of September, 1966, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Skelly Oil Company, seeks permission to institute a waterflood project in the Lovington Paddock Unit Area, Lovington-Paddock Pool, by the injection of water into the Lovington Glorieta (Paddock) formation through 22 injection wells in Sections 25, 35, and 36, Township 16 South, Range 36 East, Section 31, Township 16 South, Range 37 East, Sections 1, 2, and 12, Township 17 South, Range 36 East, and Section 6, Township 17 South, Range 37 East, NMPN, Lea County, New Mexico.
- (3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.
- (4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

-2-

CASE No. 3467

Order No. R-3124

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Shelly Oil Company, is hereby authorized to institute a waterflood project in the Lovington Paddock Unit Area, Lovington-Paddock Pool, Lea County, New Mexico, by the injection of water into the Lovington Glorieta (Paddock) formation through the following-described wells:

TOWNSHIP 16 SOUTH, RANGE 36 EAST, NMPH

Mobil-State "K" Well No. 4, Unit I, Section 25  
Shelly-Mexico "Y" Well No. 1, Unit A, Section 35  
Cities Service-State "AN" Well No. 3, Unit I,  
Section 35  
Shelly-State "R" Well No. 10, Unit C, Section 36  
Shelly-State "R" Well No. 8, Unit K, Section 36  
Shelly-State "W" Well No. 3, Unit A, Section 36  
Tidewater-State "N" Well No. 4, Unit I, Section 36

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPH

Texaco-Graham Well No. 3, Unit C, Section 31  
Shelly-State "O" Well No. 24, Unit G, Section 31  
Shelly-State "O" Well No. 20, Unit I, Section 31  
Sinclair-State "182-A" Well No. 5, Unit K, Section 31

TOWNSHIP 17 SOUTH, RANGE 36 EAST, NMPH

Lee Drilg. Co.-State "E" Well No. 1, Unit C, Section 1  
Amerada-State "LA" Well No. 16, Unit A, Section 1  
Amerada-State "LA" Well No. 20, Unit K, Section 1  
Mobil-State "R" Well No. 10, Unit I, Section 1  
Lee Drilg. Co.-State "E" Well No. 5, Unit A, Section 2  
Mobil State "R" Well No. 12, Unit I, Section 2  
Cities Service-State "AJ" Well No. 1, Unit C, Section 12  
McBee-State "A" Well No. 2, Unit A, Section 12

-3-

CASE No. 3467  
Order No. R-3124

TOWNSHIP 17 SOUTH, RANGE 17 EAST, NEEN

Ashland-C.S. Caylor Well No. 3, Unit C, Section 6  
Shelly-C. S. Caylor Well No. 3, Unit A, Section 6  
Shelly-C. S. Caylor Well No. 2, Unit K, Section 6

(2) That the subject waterflood project is hereby designated the Lovington Padlock Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*Jack M. Campbell*

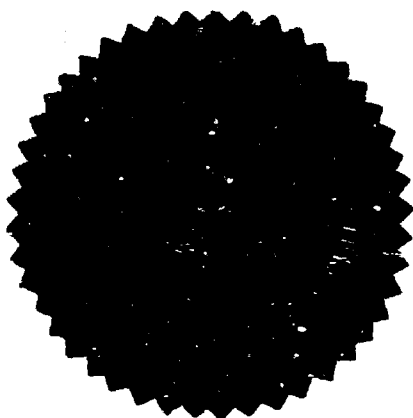
JACK M. CAMPBELL, Chairman

*Gordon B. Hays*

GORDON B. HAYS, Member

*A. L. Porter, Jr.*

A. L. PORTER, Jr., Member & Secretary



esx/

AMERICAN OIL FIELD SERVICE, INC.  
 10000 W. 10TH AVE., DENVER, COLORADO 80202  
 RESULT OF WATER ANALYSIS

TO: Shelly Oil Company LABORATORY NO. 10-23-59  
 SAMPLE RECEIVED 10-23-59  
PO BOX 275, DENVER, COLORADO 80202 RESULTS REPORTED 10-23-59

COMPANY Shelly Oil Company LEASE 10-23-59  
 FIELD OR POOL 10-23-59  
 SECTION 10-23-59 BLOCK 10-23-59 SURVEY 10-23-59 COUNTY 10-23-59 STATE 10-23-59

SOURCE OF SAMPLE AND DATE TAKEN:  
 NO. 1 Fresh water - taken from city water supply - 10-23-59  
 NO. 2 Produced (from separator) water - taken from separator - 10-23-59  
 NO. 3 Produced (from separator) water - taken from separator - 10-23-59  
 NO. 4 Produced (from separator) water - taken from separator - 10-23-59

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
SPECIFIC GRAVITY AT 60°F.	1.0000	1.0000	1.0000	1.0000
PH WHEN SAMPLED	7.4	7.3	6.7	7.2
PH WHEN RECEIVED	7.4	7.0	6.3	7.2
TOTAL ALKALINITY AS CaCO <sub>3</sub>	120	50	143	1,052
SATURATED AS CaCO <sub>3</sub>	0	24	20	52
UNDERSATURATED AS CaCO <sub>3</sub>	0	26	123	1,000
TOTAL HARDNESS AS CaCO <sub>3</sub>	120	74	163	1,104
CALCIUM AS CaCO <sub>3</sub>	80	48	107	720
MAGNESIUM AS CaCO <sub>3</sub>	40	26	56	384
SODIUM AND/OR POTASSIUM	0	0	0	0
SULFATE AS SO <sub>4</sub>	100	0.00	0.00	2,950
CHLORIDE AS NaCl	0	20.00	100.00	35,750
SILICA AS SiO <sub>2</sub>	12.4	0.0	11.9	7.8
IRON AS FE	0.00	0.15	0.00	0
MANGANESE AS MN	0.00	0.00	0.00	0.00
BARIUM AS Ba	0.00	0.00	0.00	0.00
TURBIDITY ELECTRIC	0	0.07	0.00	0.00
COLOR AS PT	0	0.00	0.00	0.00
DISSOLVED SOLIDS AT 100°C	0	0.00	0.00	0.00
TOTAL SOLIDS AT 100°C	0	0.00	0.00	0.00
TEMPERATURE °F	65	110	115	116
CARBON DIOXIDE CALCULATED	10.0	10.4	0.7	1.7
DISSOLVED OXYGEN WINKLER	2.0	0.00	0.00	0.00
HYDROGEN SULPHIDE	0.00	0.00	0.00	0.00
RESIDUAL CHLORINE	0.00	0.00	0.00	1,500
RESISTIVITY OHMS/CC	1,000	10	10	10

NOTE: All Results Reported as Parts Per Million. Divide by 17.1 to Convert to Grains Per Gallon.  
 Additional Determinations and Remarks: Only 10-23-59 - 10-23-59 - 10-23-59 - 10-23-59 - 10-23-59

BEFORE EXAMINER UTZ  
 OIL CONSERVATION COMMISSION  
SHelly EXHIBIT NO. I  
 CASE NO. 3467

Case 3467

Rush.

Heard. 9-28-66

Rec. 9-28-66

1. Grant approval of Skelly's Waterflood permit for their Torrington - Paddock unit.
2. Approve 22 injection wells as listed on their exhibit 'D'.
3. Inert fluid will not be required in annulus because of the use of Tensar packers. The annulus shall be left open however.
4. All injection shall be thru lined tubing and under a packer with the packer set as near casing shoe as above the perforations as ~~possible~~ practical.

Trust



GOVERNOR  
JACK M. CAMPBELL  
CHAIRMAN

State of New Mexico  
Oil Conservation Commission



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

STATE GEOLOGIST  
A. L. PORTER, JR.  
SECRETARY - DIRECTOR

P. O. BOX 2088  
SANTA FE

September 30, 1966

Mr. Ronald Jacobs  
Shelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma

Re: Case No. 3467

Order No. B-3124

Applicant:

SKELLY OIL COMPANY

Dear Sir:

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC   x  

Artesia OCC           

Aztec OCC           

Other           Mr. Frank Irby

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 3466  
Order No.

APPLICATION OF SKELLY OIL COMPANY  
FOR APPROVAL OF THE LOVINGTON PADDOCK  
UNIT AGREEMENT, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 28, 1966, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this \_\_\_\_\_ day of September, 1966, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Skelly Oil Company, seeks approval of the Lovington Paddock Unit Agreement covering 3,324.63 acres, more or less, of State and Fee lands described as follows:

LEA COUNTY, NEW MEXICO

Township 16 South, Range 36 East

SE/4 and S/2 SW/4 of Section 25,  
E/2 E/2 and SW/4 SE/4 of Section 35,  
All of Section 36,

Township 16 South, Range 37 East

SE/4 SW/4 and Lots 3 and 4 of Section 30,  
W/2 NE/4, SE/4, E/2 W/2, and Lots 1, 2, 3 and 4 of Section 31,

Township 17 South, Range 36 East

S/2, S/2 N/2, and Lots 1, 2, 3 and 4 of Section 1,  
E/2 SE/4 and Lot 1 of Section 2,  
NE/4 and E/2 NW/4 of Section 12,

Township 17 South, Range 37 East

S/2 NE/4, SE/4 NW/4, NE/4 SW/4, NW/4 SE/4 and  
Lots 1, 2, 3, 4, 5, 6 and 7 of Section 6,  
Lot 1 of Section 7.

(3) That approval of the proposed unit agreement should promote the prevention of waste and the protection of correlative rights within the unit area.

IT IS THEREFORE ORDERED:

(1) That the Lovington Paddock Unit Agreement is hereby approved.

(2) That the plan contained in said unit agreement for the development and operation of the unit area is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation which is now, or may hereafter be, vested in the Commission to supervise and control operations for the exploration and development of any lands committed to the unit and production of oil or gas therefrom.

(3) That the unit operator shall file with the Commission an executed original or executed counterpart of the unit agreement within 30 days after the effective date thereof; that in the event of subsequent joinder by any party or expansion or contraction of the unit area, the unit operator shall file with the Commission within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(4) That this order shall become effective upon the approval of said unit agreement by the Commissioner of Public Lands for the State of New Mexico; that this order shall terminate ~~upon~~ ~~upon~~ upon the termination of said unit agreement; and that the last unit operator shall notify the Commission immediately in writing of such termination.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

S E A L

A. L. PORTER, JR., Member & Secretary

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 3467  
Order No.

APPLICATION OF SKELLY OIL COMPANY  
FOR A WATERFLOOD PROJECT, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 28, 1966, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this \_\_\_\_\_ day of September, 1966, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Skelly Oil Company, seeks permission to institute a waterflood project in the Lovington Paddock Unit Area, Lovington Paddock Pool, by the injection of water into the Glorieta (Paddock) formation through 22 injection wells in Sections 25, 35 and 36, Township 16 South, Range 36 East, Section 31, Township 16 South, Range 37 East, Sections 1, 2 and 12, Township 17 South, Range 36 East, and Section 6, Township 17 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Skelly Oil Company, is hereby authorized to institute a waterflood project in the Lovington Paddock Unit Area, Lovington Paddock Pool, by the injection of water into the Glorieta (Paddock) formation through the following-described 22 wells in Lea County, New Mexico:

OPERATOR, LEASE, AND WELL NO.	UNIT LOCATION	SEC.	TWP.	RANGE
Mobil - State "K" #4	I	25	16S	36E
Skelly - Mexico "Y" #1	A	35	"	"
Skelly - State "R" #10	C	36	"	"
Skelly - State "N" #3	A	36	"	"
Cities Service - State "AR" #3	I	35	"	"
Skelly - State "R" #3	K	36	"	"
Tidewater - State "M" #4	I	36	"	"
Texaco - Mamie Graham #3	C	31	16S	37E
Skelly - State "O" #24	G	31	"	"
Skelly - State "O" #20	I	31	"	"
Sinclair - State "182-A" #5	K	31	"	"
Lee Drlg. Co. - State "R" #5	A	2	17S	36E
Lee Drlg. Co. - State "R" #1	C	1	"	"
Amerada - State "LA" #16	A	1	"	"
Mobil - State "R" #12	I	2	"	"
Amerada - State "LA" #20	K	1	"	"

CASE NO. 3467

Order No.

(Continued)

<u>OPERATOR, LEASE, AND WELL NO.</u>	<u>UNIT LOCATION</u>	<u>SEC.</u>	<u>TWP.</u>	<u>RANGE</u>
Modell - State "A" #10	I	1	17S	36E
Cities Service - State "A" #1	C	12	"	"
McDoe - State "A" #2	A	12	"	"
Ashland - G. S. Gaylor #5	C	6	17S	37E
Skelly - G. S. Gaylor #5	A	6	"	"
Skelly - M. E. Gaylor #2	K	6	"	"

(2) That the subject waterflood project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

S E A L

A. L. PORTER, JR., Member & Secretary

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 28, 1966

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or  
Daniel S. Nutter, Alternate Examiner:

- CASE 3459: Application of Pennzoil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg-San Andres formation through eight wells located in Sections 28 and 33, Township 17 South, Range 33 East, Maljamar Pool, Lea County, New Mexico.
- CASE 3460: Application of Penroc Oil Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill and complete a well at an unorthodox location 1,500 feet from the South and East lines of Section 19, Township 21 South, Range 24 East, Indian Basin-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico. Applicant, upon completion of said well in the Upper Pennsylvanian formation, proposes to abandon its Indian Federal Well No. 1, located in Unit G of said Section 19, insofar as the Upper Pennsylvanian formation only is concerned.
- CASE 3461: Application of Cities Service Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Southeast Maljamar Grayburg-San Andres Unit Area comprising 1,080 acres, more or less, of State and Federal lands in Sections 29, 30 and 32, Township 17 South, Range 33 East, Lea County, New Mexico.
- CASE 3462: Application of Cities Service Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Southeast Maljamar Grayburg-San Andres Unit by the injection of water into the Grayburg-San Andres formation through eleven wells located in Sections 29, 30 and 32, Township 17 South, Range 33 East, Lea County, New Mexico.
- CASE 3463: Application of Continental Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Reed-Sanderson Unit Area comprising 1041 acres, more or less, of Federal and fee lands in Township 20 South, Range 36 East, Lea County, New Mexico.

- CASE 3464:** Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through 13 wells located in Sections 3, 4, 9, and 10, Township 20 South, Range 36 East, Summit Pool, Lea County, New Mexico.
- CASE 3465:** Application of Amerada Petroleum Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Jenkins-Cisco Pool underlying the SW/4 of Section 19, Township 9 South, Range 35 East, Lea County, New Mexico.
- CASE 3466:** Application of Skelly Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Lovington Paddock Unit Area comprising 3325 acres, more or less, of Federal, fee and State lands in Townships 16 and 17 South, Ranges 36 and 37 East, Lea County, New Mexico.
- CASE 3467:** Application of Skelly Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Lovington Paddock Unit by the injection of water into the Lovington Glorieta (Paddock) formation through 22 wells located in said unit area, Lovington Paddock Pool, Lea County, New Mexico.
- CASE 3468:** Application of Tenneco Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Grayburg-Jackson West Cooperative Unit Area comprising 2,000 acres, more or less, of State and fee lands in Township 17 South, Range 29 East, Eddy County, New Mexico.
- CASE 3469:** Application of Gulf Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Springs Unit Area comprising 5,139 acres, more or less, of Federal and fee lands in Township 20 South, Range 26 East, and Township 21 South, Range 25 East, Eddy County, New Mexico.
- CASE 3470:** Application of Gulf Oil Corporation for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6000 cubic feet of gas per barrel of oil in the Justis Blinbry Pool, Lea County, New Mexico.

ir/

**DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 28, 1966**

**9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO**

---

**The following cases will be heard before Elvis A. Utz, Examiner, or  
Daniel S. Nutter, Alternate Examiner:**

- CASE 3459:** Application of Pennsoil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg-San Andres formation through eight wells located in Sections 28 and 33, Township 17 South, Range 33 East, Maljamar Pool, Lea County, New Mexico.
- CASE 3460:** Application of Penroc Oil Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill and complete a well at an unorthodox location 1,500 feet from the South and East lines of Section 19, Township 21 South, Range 24 East, Indian Basin-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico. Applicant, upon completion of said well in the Upper Pennsylvanian formation, proposes to abandon its Indian Federal Well No. 1, located in Unit G of said Section 19, insofar as the Upper Pennsylvanian formation only is concerned.
- CASE 3461:** Application of Cities Service Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Southeast Maljamar Grayburg-San Andres Unit Area comprising 1,080 acres, more or less, of State and Federal lands in Sections 29, 30 and 32, Township 17 South, Range 33 East, Lea County, New Mexico.
- CASE 3462:** Application of Cities Service Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Southeast Maljamar Grayburg-San Andres Unit by the injection of water into the Grayburg-San Andres formation through eleven wells located in Sections 29, 30 and 32, Township 17 South, Range 33 East, Lea County, New Mexico.
- CASE 3463:** Application of Continental Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Reed-Sanderson Unit Area comprising 1041 acres, more or less, of Federal and fee lands in Township 20 South, Range 36 East, Lea County, New Mexico.



CASE 3464: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through 13 wells located in Sections 3, 4, 9, and 10, Township 20 South, Range 36 East, Eumont Pool, Lea County, New Mexico.

CASE 3465: Application of Amerada Petroleum Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Jenkins-Cisco Pool underlying the SW/4 of Section 19, Township 9 South, Range 35 East, Lea County, New Mexico.

CASE 3466: Application of Skelly Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Lovington Paddock Unit Area comprising 3325 acres, more or less, of Federal, fee and State lands in Townships 16 and 17 South, Ranges 36 and 37 East, Lea County, New Mexico.

CASE 3467: Application of Skelly Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Lovington Paddock Unit by the injection of water into the Lovington Glorieta (Paddock) formation through 22 wells located in said unit area, Lovington Paddock Pool, Lea County, New Mexico.

CASE 3468: Application of Tenneco Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Grayburg-Jackson West Cooperative Unit Area comprising 2,000 acres, more or less, of State and fee lands in Township 17 South, Range 29 East, Eddy County, New Mexico.

CASE 3469: Application of Gulf Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Springs Unit Area comprising 5,139 acres, more or less, of Federal and fee lands in Township 20 South, Range 26 East, and Township 21 South, Range 25 East, Eddy County, New Mexico.

CASE 3470: Application of Gulf Oil Corporation for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6000 cubic feet of gas per barrel of oil in the Justis Blinbry Pool, Lea County, New Mexico.

ir/

**CLASS OF SERVICE**

This is a fast message unless its deferred character is indicated by the proper symbol.

# WESTERN UNION

## TELEGRAM

W. F. MARSHALL, President

1201 (4-80)

**SYMBOLS**

DL = Day Letter

NL = Night Letter

LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point.

LA039 KA139

(07) 49

K TUB116 PD=FAX TULSA OKLA 26 1056A CST=

1966 SEP 26 AM 10 49

NEW MEXICO OIL CONSERVATION COMMISSION=

STATE LAND OFFICE BLDG SANTA FE NMEX=

AMERADA PETROLEUM CORPORATION, AS AN OWNER IN THE PROPOSED LOVINGTON PADDOCK UNIT SUPPORTS THE APPLICATIONS OF SKELLY OIL IN CASES NOS 3466 AND 3467 WHICH PROVIDE FOR THE APPROVAL OF THE LOVINGTON PADDOCK UNIT AND ITS ASSOCIATED WATERFLOOD PROJECT. HEARINGS ARE SET FOR SEPTEMBER 28, 1966=

R L HOCKER AMERADA PETROLEUM CORPORATION=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

# Sunray DX Oil Company

Tulsa, Oklahoma 74102

Production Department



September 26, 1966

William R. Loar  
Manager, Unitization  
and Conservation

PG-7

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

Attention: Mr. A. L. Porter, Jr.

Re: Lovington Paddock Unit  
Lea County, New Mexico  
Cases No. 3466 and No. 3467

Gentlemen:

Sunray DX Oil Company operates one lease in the Lovington Paddock Pool and has executed the Lovington Paddock Unit Agreement. It is our belief that this waterflood project will substantially increase the ultimate recovery from this pool and that the Unit Agreement affords each party the opportunity to participate on a fair and equitable basis. We respectfully urge that the Oil Conservation Commission approve the application of Skelly Oil Company in Cases No. 3466 and No. 3467.

Very truly yours,

SUNRAY DX OIL COMPANY

William R. Loar

RCS/rwd

cc: Skelly Oil Company  
P. O. Box 1650  
Tulsa, Oklahoma



STATE OF NEW MEXICO

STATE ENGINEER OFFICE  
SANTA FE

S. E. REYNOLDS  
STATE ENGINEER

September 14, 1966

ADDRESS CORRESPONDENCE TO:  
STATE CAPITOL  
SANTA FE, NEW MEXICO 87501

SEP 16 AM 8 05

Mr. A. L. Porter, Jr.  
Secretary-Director  
Oil Conservation Commission  
Santa Fe, N. M.

Dear Mr. Porter:

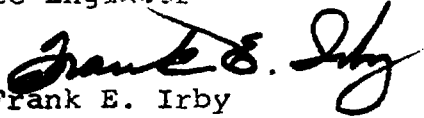
Reference is made to the application of Skelly Oil Company which seeks permission to conduct a secondary recovery project in their proposed Lovington Paddock Unit.

After reviewing the application and the exhibits attached thereto, it appears that no threat of contamination to the waters which exist in the area will occur and therefore, this office offers no objection to the granting of the application.

FEI/ma  
cc-Skelly Oil Co.  
F. H. Hennighausen

Yours truly,

S. E. Reynolds  
State Engineer

By:   
Frank E. Irby  
Chief  
Water Rights Div.

September 14, 1966

SEP 16 AM 8 05

Skelly Oil Company  
Box 1650  
Tulsa, Oklahoma 74102

Attn. Mr. Geo. W. Selinger  
Director of Conservation

Gentlemen:

Reference is made to your application to the Oil Conservation Commission which seeks permission to conduct secondary recovery project in your proposed Lovington Paddeck Unit in T. 16 South, Ranges 36 and 37 East and in Sec. 28S., Ranges 36 and 37 East.

It is noted in your application, under your Item 8, that the fluid sought to be injected is water from the Ogallala formation. Please advise me as to the location of the well or wells from which the water will be taken and also please advise as to whether these waters are to be purchased, or will be taken under rights belonging to Skelly Oil Company.

FRI/ma  
cc-A. L. Porter, Jr.  
Chas. White

Yours truly,

S. E. Reynolds  
State Engineer

By:  
Frank E. Irby  
Chief  
Water Rights Div.



# SKELLY OIL COMPANY

P. O. Box 1650  
TULSA, OKLAHOMA 74102

## PRODUCTION DEPARTMENT

C. L. BLACKSHER, VICE PRESIDENT

W. P. WHITMORE, MGR. PRODUCTION  
W. D. CARSON, MGR. TECHNICAL SERVICES  
ROBERT G. HILTZ, MGR. JOINT OPERATIONS  
GEORGE W. SELINGER, MGR. CONSERVATION

September 19, 1966

*Chase 3467*

## VIA AIR MAIL

State Engineer Office  
State of New Mexico  
State Capitol  
Santa Fe, New Mexico 87501

Attention: Mr. Frank E. Irby, Chief  
Water Rights Div.

MAIN OFFICE  
SEP 21 AM 8

Gentlemen:

This is in answer to your letter of September 14 pertaining to water to be injected into our proposed Lovington Paddock Unit. You inquired as to the location of well or wells from which the water will be taken and, also, whether these waters are to be purchased or will be taken under rights belonging to Skelly Oil Company.

These waters will be taken under rights belonging to Skelly Oil Company under approved Permit No. L-4988 for Well No. 55, located 910' FNL and 1980' FEL of Section 1, Township 17 South, Range 36 East; and under approved Permit No. L-4988-X for Well No. 56, located 1805' FNL and 1090' FNL of Section 1, Township 17 South, Range 36 East, Lea County, New Mexico.

We trust this answers your inquiry, and should you need additional information please advise.

Yours very truly,

Original signed by  
R. J. JACOBS

RJJ:br

Ronald J. Jacobs

cc-Mr. A. L. Porter, Jr.  
Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

← COPY 12



# SKELLY OIL COMPANY

P. O. Box 1650  
TULSA, OKLAHOMA 74102

*Case 3467*

## PRODUCTION DEPARTMENT

C. L. BLACKSHER, VICE PRESIDENT  
W. P. WHITMORE, MGR. PRODUCTION  
W. D. CARSON, MGR. TECHNICAL SERVICES  
ROBERT G. HILTZ, MGR. JOINT OPERATIONS  
GEORGE W. SELINGER, MGR. CONSERVATION

August 22, 1966

Re: Lovington Paddock Unit  
Lovington Paddock Pool  
Lea County, New Mexico

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

RECEIVED OFFICE 0 2

66 AUG 25 AM 7 45

Attention: Mr. A. L. Porter, Jr.

Gentlemen:

We are attaching original and three copies of our application for approval of the Lovington Paddock Unit. We are also enclosing original and three copies of our application for permission to conduct a secondary recovery project on said Unit. In addition to the Unit Agreement and exhibits mentioned in the applications, we are attaching a list of names and addresses of working interest owners, royalty interest owners, and overriding royalty interest owners within the unit area, as well as a list of names and addresses of lessees within two miles of the proposed injection wells who are not working interest owners within the unit area.

Please set this matter down for hearing for the second Examiner hearing in September, which we understand will be September 21, 1966.

Yours very truly,

RJJ:br  
Attach.

cc-Mr. L. C. White, Attorney w/ attach. (applications only)  
State Engineer, P. O. Box 1079, Santa Fe, New Mexico w/ attach.  
(applications and exhibits)

DOCKET MAILED

Date 7-15-66

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

IN THE MATTER OF THE APPLICATION OF SKELLY OIL )  
 COMPANY FOR AN ORDER AUTHORIZING THE INJECTION )  
 OF FLUID FOR SECONDARY RECOVERY PURPOSES INTO )  
 THE LOVINGTON PADDOCK POOL ON THE LOVINGTON )  
 PADDOCK UNIT, LOCATED IN PORTIONS OF SECTIONS )  
 30 AND 31, TOWNSHIP 16 SOUTH, RANGE 37 EAST, )  
 PORTIONS OF SECTIONS 25, 35 AND 36, TOWNSHIP )  
 16 SOUTH, RANGE 36 EAST, PORTIONS OF SECTIONS )  
 1, 2 AND 12, TOWNSHIP 17 SOUTH, RANGE 36 EAST, )  
 AND PORTIONS OF SECTIONS 6 AND 7, TOWNSHIP 17 )  
 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO, )  
 AND FOR THE PROMULGATION OF SPECIAL RULES )  
 GOVERNING THE OPERATION OF SAID UNIT. )

CASE NO. 3467

FILED \_\_\_\_\_

HEARING 4/28/66

W/11 OFFICE 0.0

'66 AUG 25 AM 7 45

A P P L I C A T I O N

Comes now Skelly Oil Company and alleges and states:

1. That it is the operator of the Lovington Paddock Unit containing 3,324.63 acres, more or less of federal, state and fee lands described as follows:

Township 16 South, Range 36 East

SE/4 and S/2 SW/4 of Section 25,  
 E/2 E/2 and SW/4 SE/4 of Section 35,  
 All of Section 36,

Township 16 South, Range 37 East

SE/4 SW/4 and Lots 3 and 4 of Section 30,  
 W/2 NE/4, SE/4, E/2 W/2, and Lots 1, 2, 3 and 4 of Section 31,

Township 17 South, Range 36 East

S/2, S/2 N/2, and Lots 1, 2, 3 and 4 of Section 1,  
 E/2 SE/4 and Lot 1 of Section 2,  
 NE/4 and E/2 NW/4 of Section 12,

Township 17 South, Range 37 East

S/2 NE/4, SE/4 NW/4, NE/4 SW/4, NW/4 SE/4 and  
 Lots 1, 2, 3, 4, 5, 6 and 7 of Section 6,  
 Lot 1 of Section 7,  
 All in Lea County, New Mexico.

2. That an application for approval of the Unit Agreement for said Unit has been filed with this Commission.

3. That in order to carry out the secondary recovery operations as contemplated by the Unit Agreement, to prevent waste and to recover oil and associated hydrocarbons which would not otherwise be recovered, applicant desires to inject fluid into certain wells within the unit area for injection into the Lovington Paddock Pool, pursuant to Rule 701 of this Commission.

4. That applicant proposes to convert the following 22 wells and utilize same for injection purposes:

<u>OPERATOR, LEASE, AND WELL NO.</u>	<u>UNIT LOCATION</u>	<u>SEC.</u>	<u>TWP.</u>	<u>RANGE</u>
Mobil - State "K" #4	I	25	16S	36E
Skelly - Mexico "Y" #1	A	35	"	"
Skelly - State "R" #10	C	36	"	"
Skelly - State "N" #3	A	36	"	"
Cities Service - State "AE" #3	I	35	"	"
Skelly - State "R" #2	K	36	"	"
Tidewater - State "M" #4	I	36	"	"
Texaco - Mamie Graham #3	C	31	16S	37E
Skelly - State "O" #24	G	31	"	"
Skelly - State "O" #20	I	31	"	"
Sinclair - State "182-A" #5	K	31	"	"
Lee Drlg. Co. - State "E" #5	A	2	17S	36E
Lee Drlg. Co. - State "E" #1	C	1	"	"
Amerada - State "LA" #16	A	1	"	"
Mobil - State "R" #12	I	2	"	"
Amerada - State "LA" #20	K	1	"	"



(Continued)

<u>OPERATOR, LEASE, AND WELL NO.</u>	<u>UNIT LOCATION</u>	<u>SEC.</u>	<u>TWP.</u>	<u>RANGE</u>
Mobil - State "A" #10	I	1	17S	36E
Cities Service - State "AJ" #1	C	12	"	"
McBee - State "A" #2	A	12	"	"
Ashland - C. S. Caylor #5	C	6	17S	37E
Skelly - C. S. Caylor #5	A	6	"	"
Skelly - M. E. Caylor #2	K	6	"	"

All in Lea County, New Mexico

5. That attached hereto and made a part hereof is a map, labeled Exhibit "A", which shows the location of the proposed injection wells and the location of all other wells within a radius of two miles from said proposed injection wells, and the formation from which said wells are producing, and that also indicated on said exhibit are the lessees within said two-mile radius.

6. That attached hereto and made a part hereof is Exhibit "B" which contains the diagrammatic sketches of the proposed injection wells showing the casing strings, including diameter and setting depths, quantities used and top of cement, perforated or open hole intervals, tubing strings, including diameters and setting depths, and the type and location of packers.

7. That the formation sought to be waterflooded and into which injection will be made is the Lovington Glorieta (Paddock) Formation underlying the Unit Area, the same being the heretofore established underground reservoir which has been found to occur between the depths of 6010 feet and 6838 feet in Skelly Oil Company's State "C" No. 12 well (1650' FSL, 2310' FEL Section 31-T16S-R37E, Lea County, New Mexico) as indicated by Schlumberger's E. S. Gamma Ray log, run No. 1, taken August 9, 1952, said log being measured from a derrick floor elevation of 3829 feet above sea level.

8. That the fluid sought to be injected is water, and the anticipated volumes to be injected are 9,200 barrels per day, and that the source of said injection fluid is from the Ogalalla formation. Applicant, also, contemplates re-injection of produced water.

WHEREFORE, PREMISES CONSIDERED, applicant prays that this Commission, after the giving of notice as required by law, set this matter down for hearing, and that at the conclusion of said hearing based on the evidence adduced enter its order granting the applicant permission to conduct a waterflood project on the Lovington Paddock Unit by utilizing as injection wells the wells above described, with said secondary recovery project to be governed by the provisions of Rule 701, for permission to expand or change the waterflood program by administrative means without the necessity of a separate hearing, for appropriate field rules if necessary, and for such other orders, rules and regulations as may be necessary in the premises.

Respectfully submitted,

SKELLY OIL COMPANY

By George W. Selinger  
George W. Selinger

By Ronald J. Jacobs  
Ronald J. Jacobs  
Its Attorneys

Of Counsel:

L. C. White

White, Gilbert, Koch & Kelly

P. O. Box 787

Santa Fe, New Mexico

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXHIBIT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMAS BLVD. • P. O. BOX 1073 • PHONE 243-4491 • ALBUQUERQUE, NEW MEXICO

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
September 28, 1966

EXAMINER      HEARING

IN THE MATTER OF:

Application of Skelly Oil Company for  
a unit agreement, Lea County, New Mexico.

Case No. 3466

Application of Skelly Oil Company for  
a waterflood project, Lea County,  
New Mexico.

Case No. 3467

BEFORE:      Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING



MR. UTZ: Case 3466.

MR. HATCH: Application of Skelly Oil Company  
for a unit agreement, Lea County, New Mexico.

(Whereupon, Skelly's Exhibits 1,  
A through I were marked  
for identification.)

MR. JACOBS: Ronald J. Jacobs, appearing for  
Skelly Oil Company. We would ask that the Case 3466 and Case  
3467 be consolidated for the purposes of testimony.

MR. UTZ: 3466 and 67 will be consolidated for the  
purposes of testimony only.

MR. JACOBS: We have two witnesses we would like  
to have sworn, please.

(Witnesses sworn.)

MR. UTZ: Are there any appearances? Proceed.

MR. JACOBS: We call as our first witness Mr.  
A. H. Hurley, H-u-r-l-e-y.

A. H. HURLEY

called as a witness, having been first duly sworn, was  
examined and testified as follows:

DIRECT EXAMINATION

BY MR. JACOBS:

Q That's your full, correct name, Mr. Hurley?

A Yes, sir.

Q You are employed by Skelly Oil Company?

A That's right.

Q In what capacity?

A As a unitization engineer.

Q As a unitization engineer, what generally are your duties with regard to unit agreements?

A To supervise the preparation, negotiation, final drafting of the unitization instruments.

Q And did you act in that capacity with regard to the Lovington Paddock Unit, the unit under consideration today?

A Yes, I did.

Q Have you heretofore testified before this Commission as a petroleum engineer and as a unitization engineer?

A Yes, I have.

Q I direct your attention to what has been marked as Exhibit 1, which is the Unit Agreement. Mr. Hurley, what type of a unit agreement is this?

A Basically Federal form agreement following a pattern more or less established for Federal units containing Federal acreage. This particular agreement was patterned after our East Bisti and Lovington-San Andres Units.

Q And the provisions, the general provisions contained in the Unit Agreement are very similar to those

others, is that correct?

A That's correct.

Q Have you examined the application and the Unit Agreement and does the definition of the unit area as contained in the application and the Unit Agreement, is that the correct definition of the unit area?

A Yes, sir, it is.

Q I won't ask that you read the definition word for word because it does contain a number of lots; is that because of the township correction lines, range correction lines occurring right about in the center of this unit?

A That's correct. The unit is divided by four corners in four townships and, of course, there are correction lines all along both edges of this corner.

Q I direct your attention to Exhibit A attached to the Unit Agreement. Is this a plat of the unit area?

A Yes, sir, it is.

Q And it designates the type of acreage that is included in the unit, is that correct?

A That's correct.

Q Exhibit B attached to the Unit Agreement defines each one of these individual tracts comprising the unit area and describes the necessary information pertaining to each tract, is that right?

A That is correct, yes, sir.

Q What is the total number of acres contained in the unit area?

A There are a total of 3,324.63 acres in the unit area.

Q And does the Unit Agreement contain a division of the unitized formation?

A Yes, sir, it does.

Q What is that definition?

A The formation to be unitized is the Lovington, Glos-ieta or Paddock Formation underlying the unit area, the same being the heretofore established underground reservoir which has been found to occur between the depths of 6,010 feet and 6,838 feet in Skelly Oil Company's State "O" Well No. 12, as indicated by Schlumberger's E. S. gamma ray log, run No. 1, taken August 9, 1952, said log being measured from a derrick floor elevation of 3,829 feet above sea level. The location of this well is 1650 feet from the South Line, 2310 feet from the East Line, Section 31, Township 16 South, Range 37 East.

Q Exhibit A attached to the Unit Agreement is the plat. Is that well shown on that plat, Mr. Hurley?

A Yes, sir, it is.

Q I notice you have that indicated as if it is a location. What is the reason for that?

A The well is not actually a unit well, it is completed in the Abo Formation, and one of the wells in the area which completely penetrated the Paddock pay and was used only to find the unitized formation.

Q What response have you had with regard to sign-up of this Unit Agreement and Unit Operating Agreement, Mr. Hurley?

A To date we have received ratification of 96.23% of the working interest, 95.59% of the royalty interest based on phase three unit participation.

Q Before we get into the unit participation, the various tracts that are shown on the Exhibit A, do you anticipate that all of these tracts will qualify for the inclusion into the unit area?

A Yes, sir, we do.

Q You have hopes of getting all of the remaining working interest owners signed up within the next day or two, is that right?

A That is correct. There's one outstanding working unit owner at this time.

Q And indications from that owner are that he will sign the Unit Agreement?

A That is correct.

Q I notice you mention a phase three participation,

Mr. Hurley, what is the participation formula for this unit?

A It consists of three phases, Phase One will become effective with the effective date of the unit and for the first 300,000 barrels of oil production from the unit. The formula for that period is 70% current oil production and 30% remaining primary recovery.

Phase Two becomes effective on the termination of Phase One and will remain in effect for the next 700,000 barrels of unit production. The formula for Phase Two is 70% remaining primary recovery and 30% current production.

Phase Three will become effective on the termination of Phase Two and is based 100% on ultimate primary recovery. Incidentally, Phases One and Two together cover the remaining primary period of production. Phase Three is the secondary recovery portion.

Q And that was used because I notice you said that Phase Three is 100% remaining primary, is that right?

A Hundred per cent ultimate primary.

Q And that is the figure that you anticipate will best represent the contribution of the tracts for secondary recovery purposes in that particular phase?

A That's right.

Q In your opinion, Mr. Hurley, will this Unit Agreement, is it protective of the correlative rights of all



the various interest owners within the unit?

A It is.

Q Have you received preliminary approval from any state agency for their lands involved within the unit area?

A We have received preliminary approval of the Commissioner of Public Lands of the State of New Mexico.

Q I notice there's a federal tract. Do you anticipate that the federal tract will also be qualified and ratified by the United States Geological Survey, is that correct?

A That is correct. We have not yet received their ratification, but our contact with them in Washington and Roswell indicates that they will sign probably subsequent to the effective date.

Q So that you do anticipate that the unit area will be 100% signed both as to work and royalty, is that right?

A No, that's not exactly right. There are several tracts which may have some outstanding royalty. These tracts have been qualified by vote and by procedure of Section 15-B of the Unit Agreement and will be qualified, but there are possibly one or two fee royalty owners unsigned.

MR. JACOBS: That's all the direct testimony I have of Mr. Hurley. We will have an engineering witness to go into the injection phase and waterflood phase of this

application.

MR. UTZ: Any questions in regard to the Unit Agreement? If not, the witness may be excused.

(Witness excused.)

LARRY R. HALL

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. JACOBS:

Q Will you please state your name, by whom you are employed and in what capacity?

A Larry R. Hall, H-a-l-l; employed by Skelly Oil Company, Hobbs District Office, in Hobbs, New Mexico as a production engineer.

Q Are you familiar with the proposed plan of operation for the Lovington Paddock Unit?

A I am.

Q Have you participated in the engineering sub-committee with regard to this unit, is that right?

A Yes, sir, I did.

Q Have you heretofore testified before this Commission as a petroleum engineer?

A No, sir, I have not.

Q Would you please, then, briefly outline your

educational qualifications and your experience?

A I graduated from Kansas State University in June of 1962. I have since then been employed by Skelly Oil Company. I have slightly over four years' experience. I have been in the Hobbs District Office those four years. I have dealt in phases of unitization work, secondary recovery projects, primary workovers and all phases of engineering.

Q And you have made an actual study with reference to the Lovington Paddock Pool, is that right?

A Yes, sir, I have.

Q And you prepared certain exhibits and testimony in regard to the hearing under consideration today?

A Yes, I have.

MR. JACOBS: Are there any questions as to his qualifications?

MR. UTZ: No, sir, he's qualified.

Q (By Mr. Jacobs) I direct your attention to the Exhibit A which appears to be a map of the unit area. Will you please explain that?

A Exhibit A is a map showing lessees, location of wells included in the project, all other wells within a radius of two miles from the proposed injection wells, and the formation from which said wells are producing or have produced. Also is shown the boundary outline of the

Lovington Paddock and Lovington San Andres Units. The proposed area includes all of the Lovington Paddock Unit with the exception of the Skelly C. S. Caylor No. 5 and No. 8, Skelly St. "O" 20 and 21. The C. S. Caylors are located in Section 6, 17, 37. The State 20 and 21 are located in Section 31, 16, 37. There is one undrilled tract, Pan American State "E" lease located in Section 1, 17, 36.

Q And those areas you have described are cross-hatched in green?

A Cross-hatched in green on Exhibit A.

Q What is the reason that the particular tracts or the wells contained thereon will not be in the initial project area?

A The Pan American tract located in Section 1 is an undrilled location. There is no present well committed to the Paddock Unit on that location. The four Skelly tracts on the east side of the unit will not be in the initial project area due to the fact that we will delay conversion of three injection wells pending the offset operations to the eastern side of the unit.

Q I notice that you have also indicated by a red circle around certain wells. What does the red circle indicate?

A It designates the proposed injection wells.

Q And those are the wells that are enumerated in the application as proposed injection wells, is that correct?

A That is correct.

Q Around these two wells in Section 31 and one well in Section 6 you have a dashed line around those three wells. Are those the three wells that you are referring to that will be converted at a little later time?

A That is correct.

Q You do anticipate using those wells for injection but not in the first initial phase of conversion, is that right?

A That is right.

Q You have indicated by a color code, I believe, on the map, the formations from which the wells spotted thereon are completed or have produced, is that right?

A That is correct.

Q Now, the red color is the color representing the Paddock wells, which is the reservoir we're concerned with here today?

A That is correct. Skelly proposes to inject water from the Ogallala Formation into the Glorieta Formation by the use of 19 injection wells indicated on Exhibit A. It will be used in an inverted nine-spot pattern. Our future plans include the conversion of the three wells on the east

side to inject at such time that the offset operations will permit. The injection rates are 9,000 barrels per day or an average rate of 475 barrels per day for the initial 19 injection wells. Maximum waterflood allowable oil production for the 77 project wells will be 5,725 barrels per day. Pool operators report that 7,531,829 barrels of stock tank oil have been produced from the unit area. Of this, 7,070,265 barrels have been produced from this project area. The average cumulative production per well has been 92,500 barrels. A copy of this application for the waterflood project and all attachments have been sent to the State Engineer's Office, Capitol Building, Santa Fe, New Mexico.

MR. JACOBS: Are there any of those figures that Mr. Hall gave that you would like to have him repeat?

MR. UTZ: Yes, I think I would. What was your original figure total production?

A The total production from the pool has been, now this is from the unit area as outlined on Exhibit A, 7,531,829 barrels.

Q (By Mr. Jacobs) That was as of a particular date?

A As of August 1, 1966.

MR. UTZ: I think that will be all that's necessary.

Q (By Mr. Jacobs) I direct your attention then, Mr. Hall, to the next exhibit, which is marked Exhibit B for

identification. Would you please describe that exhibit?

A Exhibit B is a primary performance graph for the Lovington Paddock Pool. Shown on this graph is the monthly oil production, cumulative oil production, and the number of producing oil wells. Included in this performance graph is data pertaining to wells outside the project area. These data are for the four wells included in the unit area, but not in the project area, plus those more recently developed wells in Sections 29, 30, 31, 32 and 33 of Township 16 South, Range 37 East and Sections 4 and 5 of Township 17 South, Range 37 East. This is immediately east of our project area.

Q I direct your attention to what has been marked for identification as Exhibit C. What does this exhibit show?

A Exhibit C is a primary performance graph for the unit area. This exhibit indicates the remaining primary oil to be 950,000 barrels as of January 1st, 1966. The Lovington Paddock Pool is located in all or parts of Sections 25, 25, 35 and 36 of Township 16 South, Range 36 East; Sections 29, 30, 31, 32 and 33 of Township 16 South, Range 37 East; Sections 1, 2, 12, Township 17 South, Range 36 East; and Sections 4, 5, 6 and 7, Township 17 South, Range 37 East, Lea County, New Mexico.

As stated in Mr. Hurley's testimony, because of the corrections along the township lines, the exact description

of the unit area is given in our Exhibits A and B of our Unit Agreement. The Paddock reservoir is the middle of three oil-producing horizons, the San Andres, Abo and Paddock. The Paddock field was discovered by the W. D. McBee State "A" No. 2 on June 11, 1952. There are presently 106 producing wells in the pool, of which 77 are located within the project area. The present monthly oil-producing rate in the project area is approximately 14,300 barrels or an average of six barrels of oil per day per producing well.

The Lovington Paddock Unit includes 82 proration units which ultimately will comprise 60 producing wells and 22 injection wells. Initially, the project area will exclude the four developed wells in the unit area and four in the undrilled location in Section 1, Township 17 South, Range 36 East. As stated earlier, our future plans are to convert three wells to injection status. The tract in Section 1 will be drilled at such time as response to injection has been noted in the area.

Q You mentioned that the average production of wells within the project area is something about six barrels per day, is that correct?

A That is correct.

Q What is the maximum and minimum range of that daily production per well?



A The minimum daily production is zero and the maximum is 17 barrels of oil per day.

Q I direct your attention now to what has been marked for identification as Exhibit D. Exhibit D contains some seven pages, is that correct?

A That is correct.

Q Would you explain this exhibit and what it purports to show?

A Exhibit D are well completion data for wells within the unit area. Shown in this tabulation are operator, the well number, the location, elevation, total depth, casing program, including the diameter, setting depth and volume of cement used, and the producing interval. Also noted under the "Remarks" column are those wells scheduled as water injectors.

Q I direct your attention now to what has been marked for identification as Exhibit E. Would you please explain this exhibit?

A Exhibit E is a supplemental well data sheet showing the completion date, the initial and current producing rates, and cumulative oil production to August 1st, 1966, per well. The 77 project area wells are currently completed in the Glorieta Formation with 50 wells producing from open hole, one well producing through both perforations and open

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO  
1203 FIRST NATIONAL BANK EAST • PHONE 246-1794 • ALBUQUERQUE, NEW MEXICO

hole, and 26 wells producing through perforations only.

Q I direct your attention now to what has been marked for identification as Exhibit F, which contains 22 pages. Would you please explain that exhibit and what it purports to show?

A Exhibit F, as you said, contains 22 pages. These are downhole diagrammatic sketches of the 22 proposed injection wells. Initially only 19 wells will be converted. Administrative approval to expand the project area to include the remaining wells will be requested as circumstances permit. Shown on the sketches are all casing strings, diameters and setting depths, quantities of cement used, tops of cement, perforated or openhole intervals, tubing strings, including diameters and setting depth, and type and location of the packer.

Q I notice that you have indicated a packer and tubing. I assume you intend to inject the water through tubing set on the packer, is that right?

A That is correct.

Q And I notice you also indicated that the tubing is to be plastic coated. What is the reason for this, Mr. Hall?

A The water source we propose to use is a fresh water, however, it contains a lot of oxygen and we have to

coat the tubing for purposes of protection.

Q In your opinion will this type of injection arrangement prevent any contamination of any other formation, including fresh water-bearing formations up the hole?

A Yes, sir, it is my opinion it will do so.

Q I direct your attention to what has been marked for identification as Exhibit G, which contains some 18 items. What is this exhibit, Mr. Hall?

A Exhibit G are the available well logs on the proposed injection wells. There are 18 logs in that exhibit.

Q These are 18 of the wells that will be converted to injection?

A That is correct.

Q I direct your attention now, Mr. Hall, to what has been marked for identification as Exhibit H. Will you please describe what this exhibit is and what it purports to show?

A The Lovington Paddock Pool is an anticlinal structure, as may be noted on Exhibit H. It produces from an intercrystalline dolomite formation at a depth of approximately 5900 to 6350 feet. The reservoir has a gross productive thickness of approximately 200 to 300 feet with the first pay encountered from 50 to 150 feet below the top of the Glorieta.

The Lovington Paddock reservoir produces

predominately by solution gas drive. Pressure data indicate original bottom hole pressure was 2,400 psi. The reservoir originally existed in an under-saturated state with the reported bubble-point of the reservoir fluid being 1695 psi.

The producing gas-oil ratio and average daily oil production per well for the unit area is approximately 2900 standard cubic feet per barrel and six barrels of oil per day, respectively. The water cut averages approximately 20 per cent.

Average rock properties of the Paddock reservoir have been determined from core analyses on eight wells. The average weighted porosity was found to be 6.3%. The weighted arithmetic average permeability was 2.8 millidarcys. The average residual oil saturation and total water saturation was 16.9 and 33.8% respectively. Ultimate primary recovery for the unit is estimated to be 8,384,252 barrels. The remaining primary life for this area is indicated to be approximately eight and one-half years.

Secondary oil reserves by waterflood of the Lovington Paddock Unit have been estimated to be 6.29 million barrels. These reserves assume that recoverable secondary oil would be equal to 75% of the estimated ultimate primary recovery. Waterflood performance is anticipated to yield a peak producing rate of 3620 barrels per day in three years.

The life of the waterflood project has been estimated to be fifteen years from the start of injection.

The injection water will be produced from the Ogallala Formation at a depth of approximately 190 feet. The two wells that will supply this fresh water currently exist and are serving the Skelly Lovington San Andres Unit.

Q I notice a number of times you have used the term Glorieta and sometimes you talk about the Paddock. We are talking about the same formation?

A That is correct.

Q I direct your attention now to what has been marked for identification as Exhibit I. Would you please explain that exhibit?

A Exhibit I are an analyses of this Ogallala supply water and the produced Paddock water. Water injection in the unit's wells will be through internally plastic coated tubing set in a tension-type packer approximately 50 feet above the casing seat or uppermost perforation. Injection rates of approximately 475 barrels of water per day per well at maximum injection wellhead pressures of approximately 1,850 psi are anticipated.

MR. UTZ: What was your pressure?

A 1850.

Q (By Mr. Jacobs) Based on your studies of

this reservoir and your studies of engineering reports, preparation, is it your opinion, Mr. Hall, that it is necessary to institute a secondary recovery project in this area in order to recover oil which would not otherwise be recovered?

A Yes, that is correct.

Q And would such a project prevent waste?

A Yes, it will.

Q In your opinion was the proposed plan of operation and the Unit Agreement, will it protect the correlative rights of all the various interest owners within the unit area?

A Yes, correlative rights are protected.

Q Will the operation of the unit in any way abuse the correlative rights or the interest of those parties who are not within the unit area?

A No, sir.

Q Were Exhibits A through H prepared by you or under your supervision and direction?

A Exhibits A through H, with the exception of Exhibit G, were prepared by me or under my supervision.

Q Now, Exhibit G is the log?

A Injection well logs.

Q And Exhibit I is merely a water, or a supply water analysis prepared by a commercial laboratory, is that right?

A Prepared by a commercial laboratory for Skelly,  
yes, sir.

MR. JACOBS: We offer into evidence Exhibit 1 in  
Case 3466 and Exhibits A through I, inclusive, in Case 3467.

MR. UTZ: The exhibits mentioned by counsel will  
be entered into the record of these cases.

(Whereupon, Skelly's Exhibits 1,  
and A through I were offered  
and admitted in evidence.)

MR. JACOBS: That's all the direct testimony we  
have of this witness.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hall, referring to your Exhibit F --

A Exhibit F?

Q Yes.

A Yes, sir.

Q -- am I correct in that all surface casing has  
been circulated?

A That is correct.

Q And that all injection will be through lined  
tubing and under a packer?

A That is correct.

Q If you said, I missed it, what do you intend to  
do with the annulus behind the tubing?

A We do not intend to load the annulus.

Q You do not?

A No, sir. That would cause undue stress within our tubing string.

Q Why would this cause undue stress?

A We would have to go down to a setdown packer rather than a tension type packer if we loaded the annulus.

Q You are using a tension packer?

A Yes, sir, that's correct.

Q You don't want the additional weight of the water on top of the packer?

A No, sir.

Q How will you determine, then, if you have any packer leakage into the annulus?

A This can be determined within two methods. We have used one and we have found two packer leaks, and you can find them readily. You can leave your annulus open and your water will come to the surface. We have found two packer leaks and we repaired almost immediately.

Q Now, this 1850 pounds will be surface pressure?

A That is correct.

MR. UTZ: Are there any other questions of the witness? He may be excused.

(Witness excused.)



MR. UTZ: Any other statements in this case?

MR. JACOBS: I believe your Commission file contains some correspondence, especially from the State Engineer, indicating his approval. We have discussed this matter with him and I think have answered all his questions. There may be some letters from other companies in support of this application.

MR. UTZ: We have a letter from the State Engineer dated September 14, in which he says he offers no objection.

MR. HATCH: We also have telegrams and letters in favor from Sunray DX, telegram dated September 26, 1966 from Amerada Petroleum Corporation in support of the application. A letter from Sunray DX Oil Company dated September 26th, 1966 also in support of the application.

MR. UTZ: Any other statements in this case?  
The case will be taken under advisement.

The hearing will be adjourned 'til 2:00 o'clock,  
at which time we will take up Tenneco's Case 3468.



I N D E X

<u>WITNESS</u>	<u>PAGE</u>
A. H. HURLEY	
Direct Examination by Mr. Jacobs	2
LARRY R. HALL	
Direct Examination by Mr. Jacobs	9
Cross Examination by Mr. Uta	22

<u>EXHIBIT</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Skelly's 1 and A through I	2	22

STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 25th day of October, 1966.

Ada Dearnley  
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is  
a true and correct record of the proceedings in  
the case of Case No. 3465-67  
of the 28th day of October, 1966.  
Ernesto J. J. J., Recorder  
New Mexico Oil Conservation Commission

LOVINGTON - PADDOCK (NMOCC HEARING)

EXHIBITS

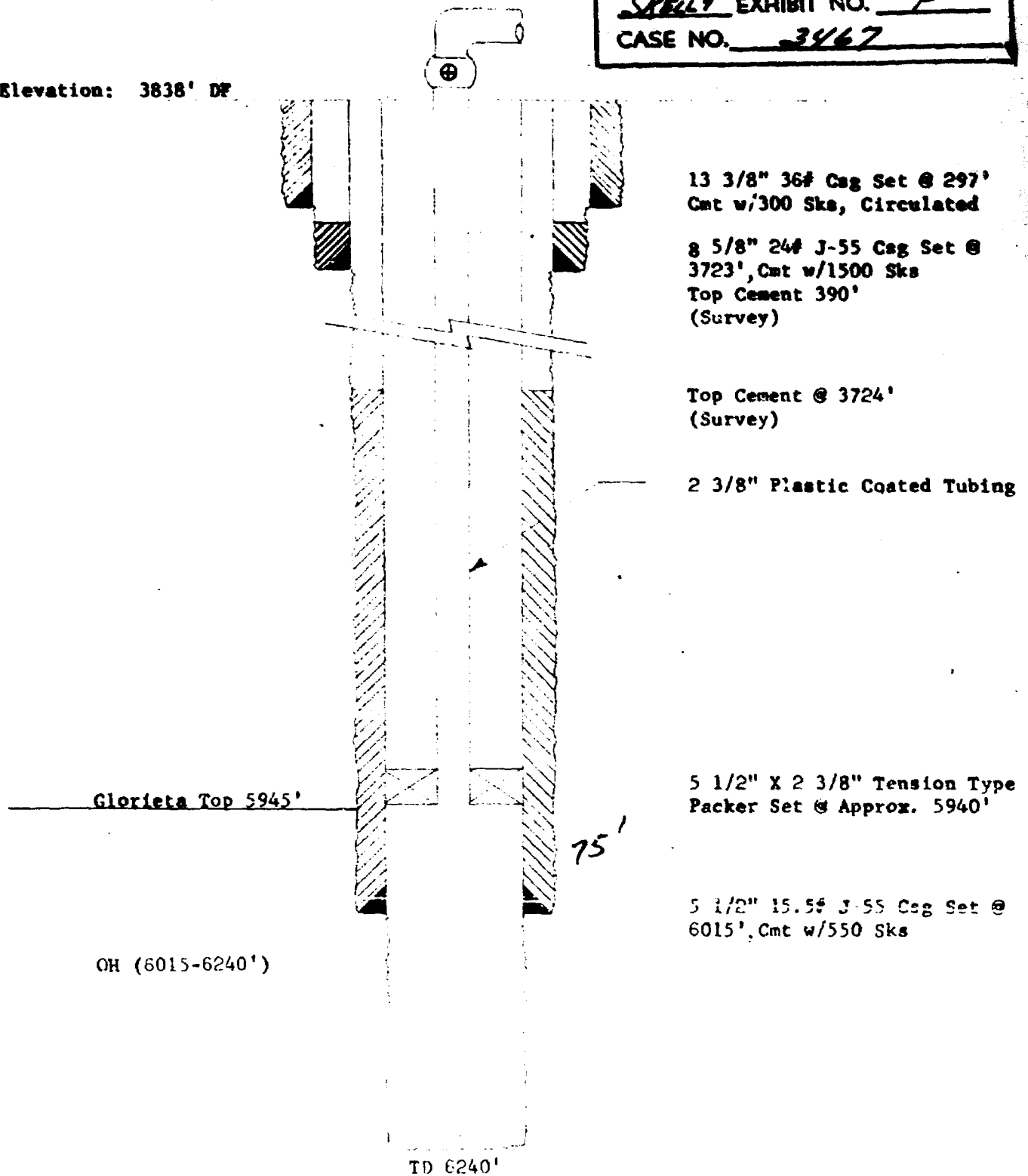
- |               |  |
|---------------|--|
| A             | AREA MAP   |
| B             | LOVINGTON PADDOCK PRIMARY PERFORMANCE GRAPH      |
| C             | LOVINGTON PADDOCK UNIT PRIMARY PERFORMANCE GRAPH |
| D             | WELL COMPLETION DATA                             |
| E             | SUPPLEMENTAL WELL DATA                           |
| F-1 THRU F-22 | DOWNHOLE DIAGRAMMATIC SKETCH OF INJECTION WELLS  |
| G-1 THRU G-18 | INJECTION WELL LOGS                              |
| H             | STRUCTURE MAP - TOP OF GLORIETA                  |
| I             | SUPPLY WATER ANALYSIS                            |

PROPOSED LOVINGTON PADDOCK UNIT WIW

AMERADA PETROLEUM CORPORATION  
STATE "LA" WELL NO. 16  
760' PNL & 660' PEL, SEC. 1, T-17-S, R-36-E  
DELAWARE COUNTY, NEW MEXICO

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
SKELLY EXHIBIT NO. F  
CASE NO. 3467

Elevation: 3838' DF



AMERADA PETROLEUM CORPORATION  
STATE "LA" WELL NO. 20  
1980' FSL & 1880' FWL, SEC. 1, T-17-S, R-36-E  
LEA COUNTY, NEW MEXICO

990'

75'

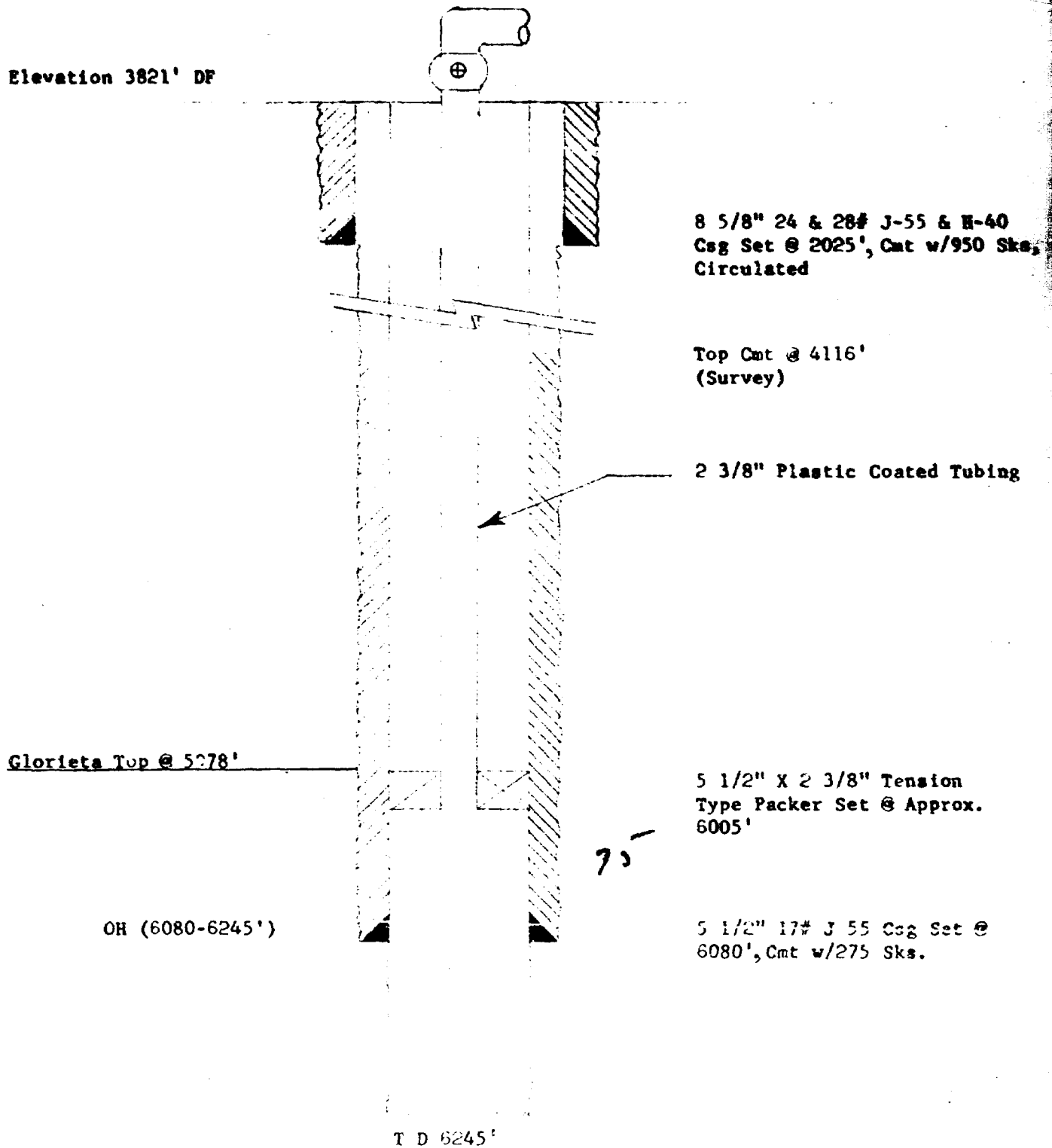
5 1/2" 15.5# J-55 Csg. Set  
@ 6064', Cmt w/550 Sks

TD 6275'

PROPOSED LOVINGTON PADDOCK UNIT WIW

ASHLAND OIL AND REFINING COMPANY  
C. S. CAYLOR WELL NO. 5  
3540' FEL & 480' FNL, SEC. 6, T-17-S, R-37-E  
LEA COUNTY, NEW MEXICO

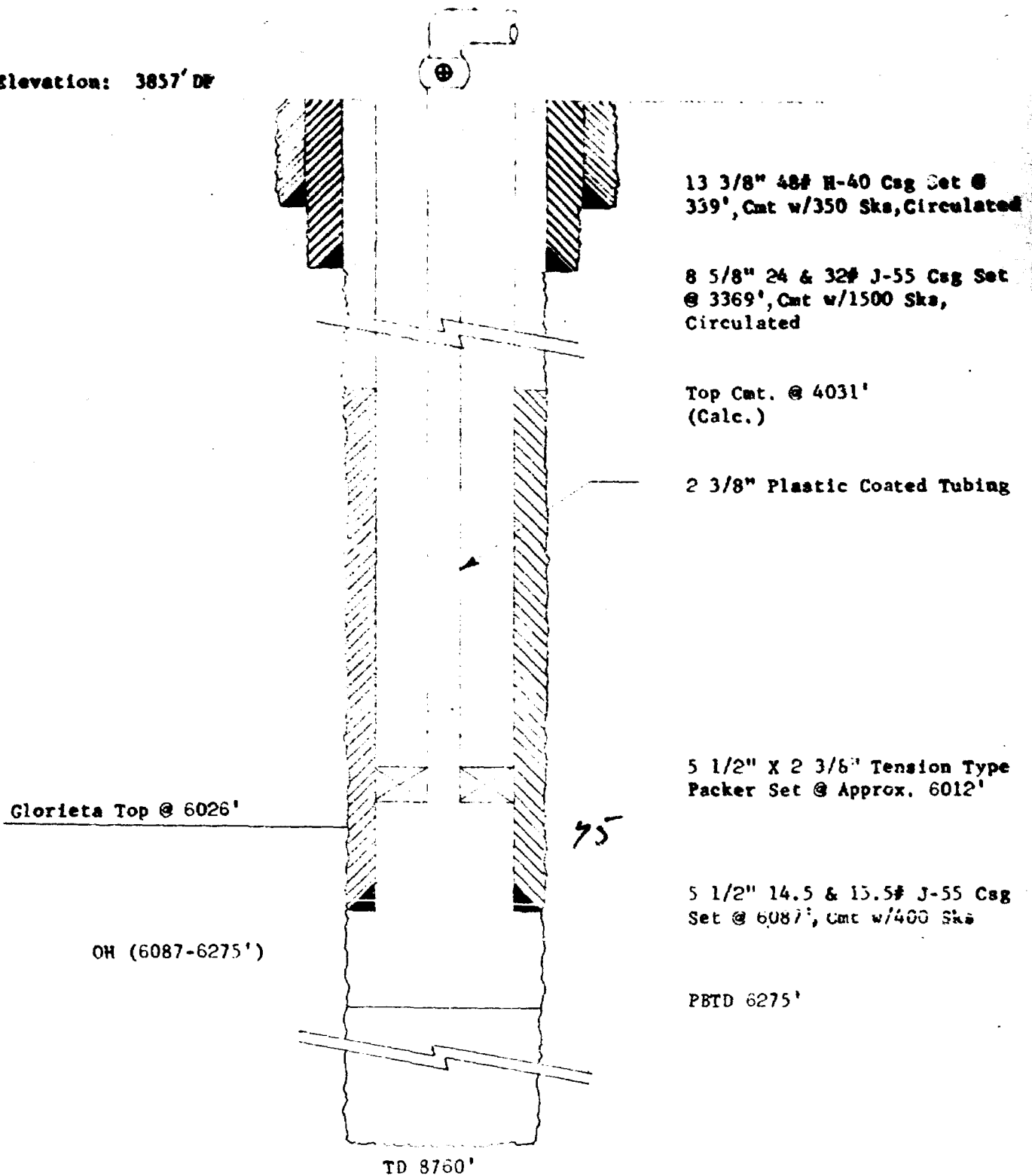
Elevation 3821' DF



PROPOSED LOVINGTON PADDOCK UNIT WIW

CITIES SERVICE OIL COMPANY  
STATE "AE" WELL NO. 3  
3630' PNL & 330' FEL. SEC. 35, T-16-S, R-36-E  
LEA COUNTY, NEW MEXICO

Elevation: 3857' DE

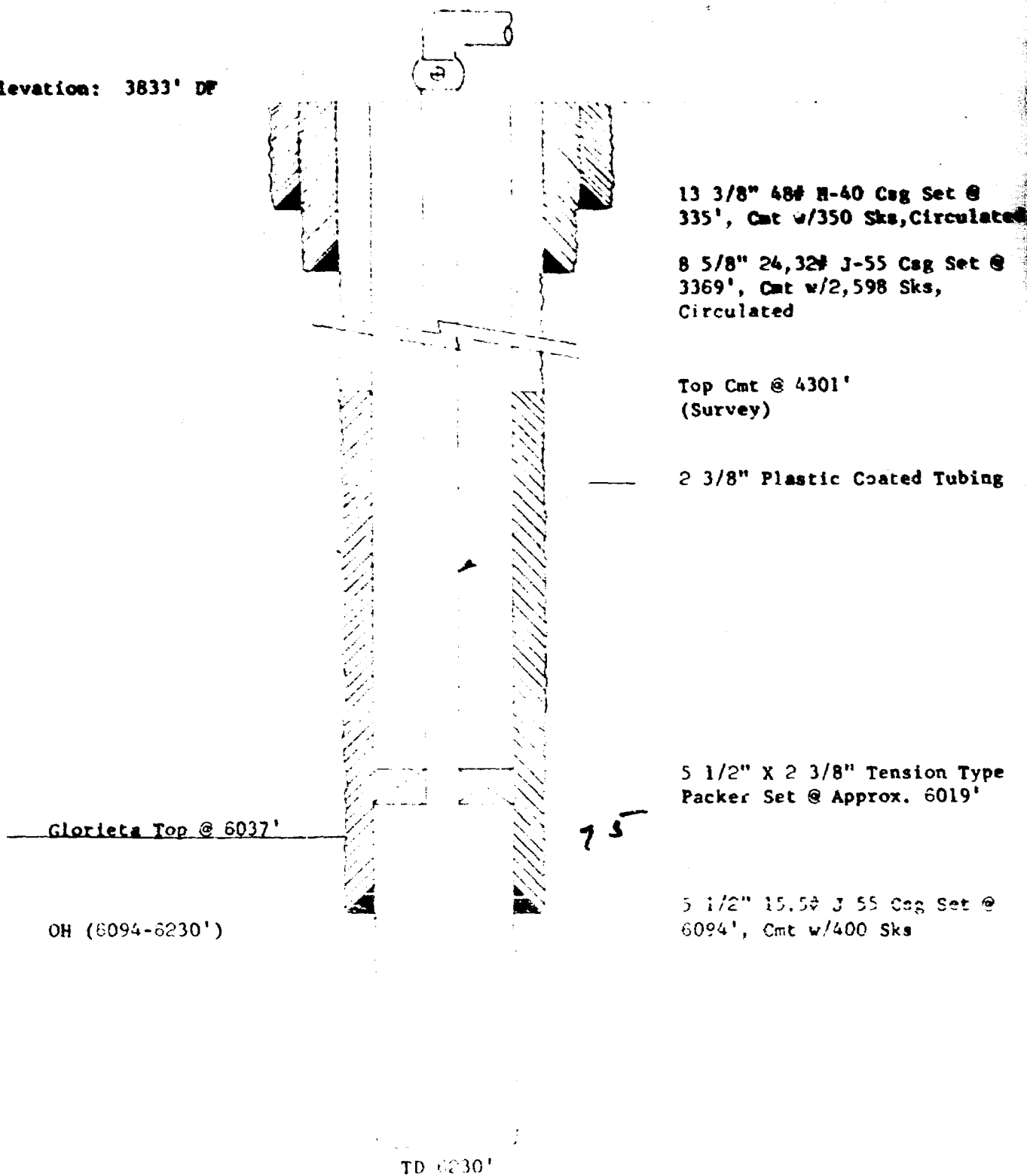




PROPOSED LOVINGTON PADDOCK UNIT WIW

CITIES SERVICE OIL COMPANY  
STATE "AJ" WELL NO. 1  
330' FNL & 2970' FEL, SEC. 12, T-17-S, R-36-E  
LEA COUNTY, NEW MEXICO

Elevation: 3833' DF



PROPOSED LOVINGTON PADDOCK UNIT WIW

LEE DRILLING COMPANY  
STATE "E" WELL NO. :  
2310' FWL & 660' FNL, SEC. 1, T-17-S, R-36-E  
LEA COUNTY, NEW MEXICO

Elevation 3847' DF

Glorieta Top @ 5930'

OH (6027-6221')

T D 6221'

8 5/8" 28# H-40 Csg. Set @  
2041', Cmt w/1,200 Sks,  
Circulated

Top Cmt @ 4174'  
(Survey)

2 3/8" Plastic Coated Tubing

5 1/2" X 2 3/8" Tension Type  
Packer Set @ Approx. 5952'

5 1/2" 15.5# J-55 Csg Set @6027'  
Cmt w/350 Sks.

75

PROPOSED LOVINGTON PADDOCK UNIT WII

LEE DRILLING COMPANY  
STATE "E" WELL NO. 5  
660' FNL & 330' FEL, SEC. 2, T-17-S, R-36-E  
LEA COUNTY, NEW MEXICO

Elevation 3850' DF

Glorieta Top @ 6008'

OH (6111-6234')

T D 6234'

8 5/8" 28# H-40 Csg Set @  
2046', Cmt w/1,350 Sks,  
Circulated

Top Cmt @ 3865'  
(Survey)

2 3/8" Plastic Coated Tubing

5 1/2" X 2 3/8" Tension  
Type Packer Set @ Approx.  
6076'

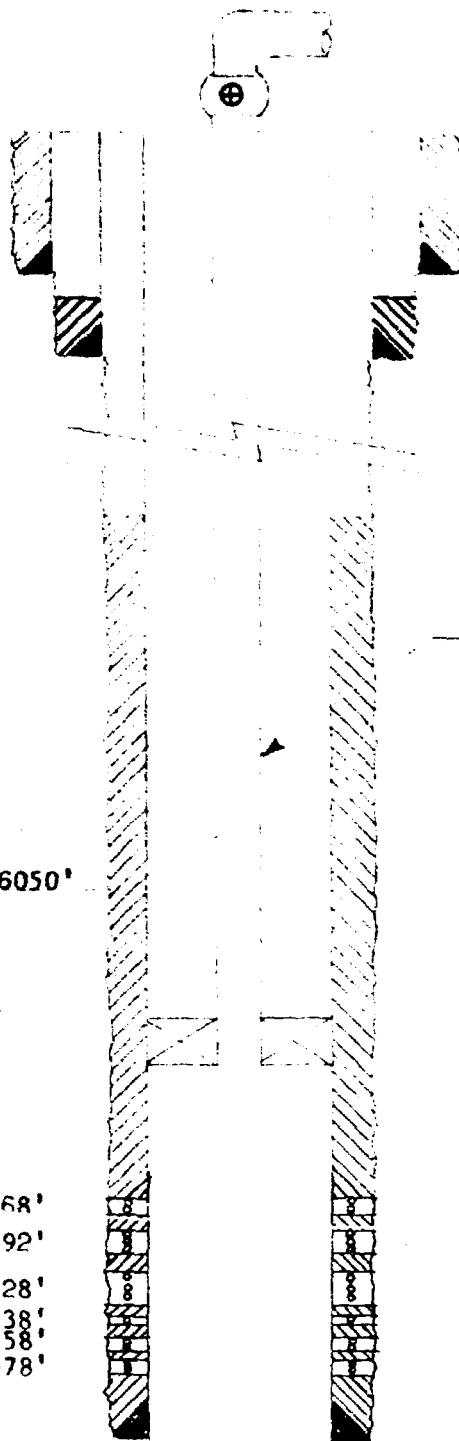
5 1/2" 15.5# J-55 Csg Set  
@ 6111', Cmt w/350 Sks

75

PROPOSED LOVINGTON Paddock UNIT WI'

W. D. MC BEE  
STATE "A" WELL NO. 2  
660' FN & E LINES, SEC. 12, T-17-S, R-36-E  
LEA COUNTY, NEW MEXICO

Elevation: 3837' DF



13 3/8" Csg Set @ 319'  
Cmt w/300 Sks, Circulated  
(Calc.)  
8 5/8" 24 & 32# J-55 Csg Set  
@ 3400', Cmt w/1,000 Sks  
Top Cmt @ 1410' (Calc.)

Top Cmt @ 4902'  
(Calc.)

2 3/8" Plastic Coated Tubing

6156  
6081  
75

Glorieta Top @ 6050'

Perforations:

6156-68'  
6172-92'  
6200-28'  
6232-38'  
6242-58'  
6264-78'

OR (6340-6363')

TD 6363'

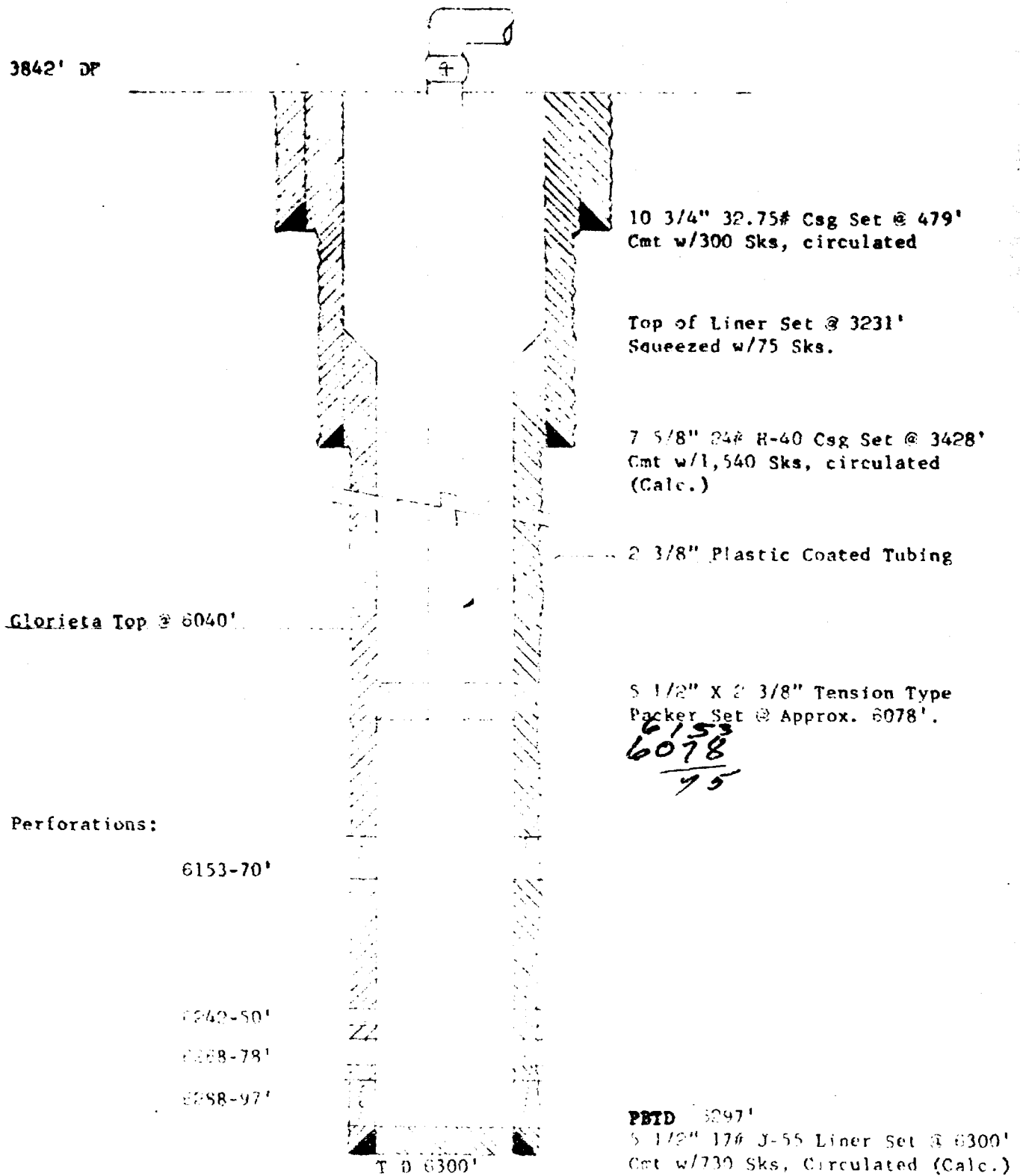
5 1/2" X 2 3/8" Tension Type  
Packer Set @ Approx. 6081'

5 1/2" 15.5# J-55 Csg Set @  
6340', Cmt w/250 Sks

PROPOSED LOVINGTON PADDOCK UNIT WIW

MOBIL OIL CORPORATION  
STATE "K" WELL NO. 4  
1650' FSL & 330' FEL, SEC. 25, T-16-S, R-36-E  
LEA COUNTY, NEW MEXICO

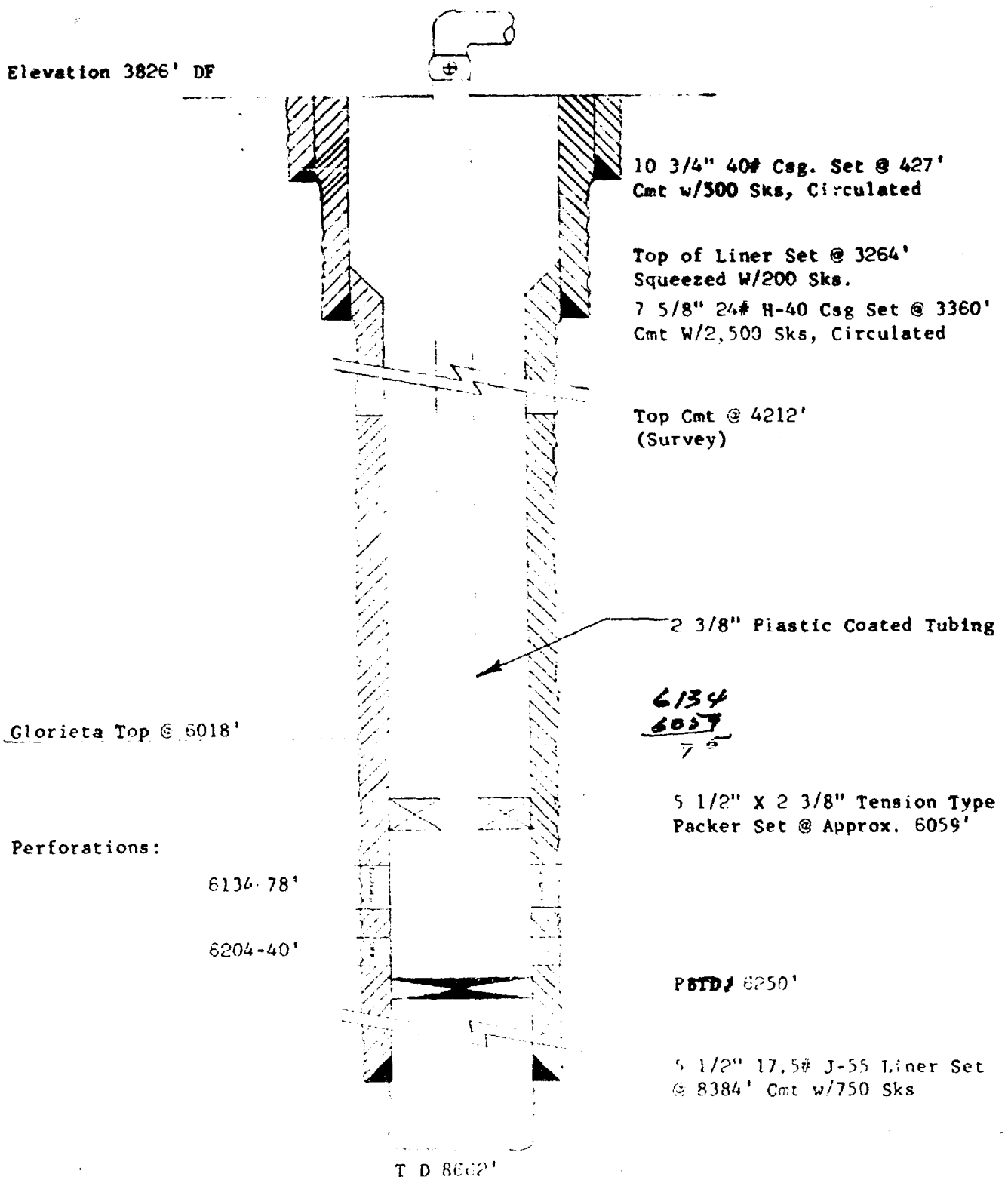
Elevation 3842' DP



PROPOSED LOVINGTON PADDOCK UNIT WIW

MOBIL OIL CORPORATION  
STATE "R" WELL NO. 10  
1980' FSL & 660' FEL. Sec. 1, T-17-S. R-36-E  
LEA COUNTY, NEW MEXICO

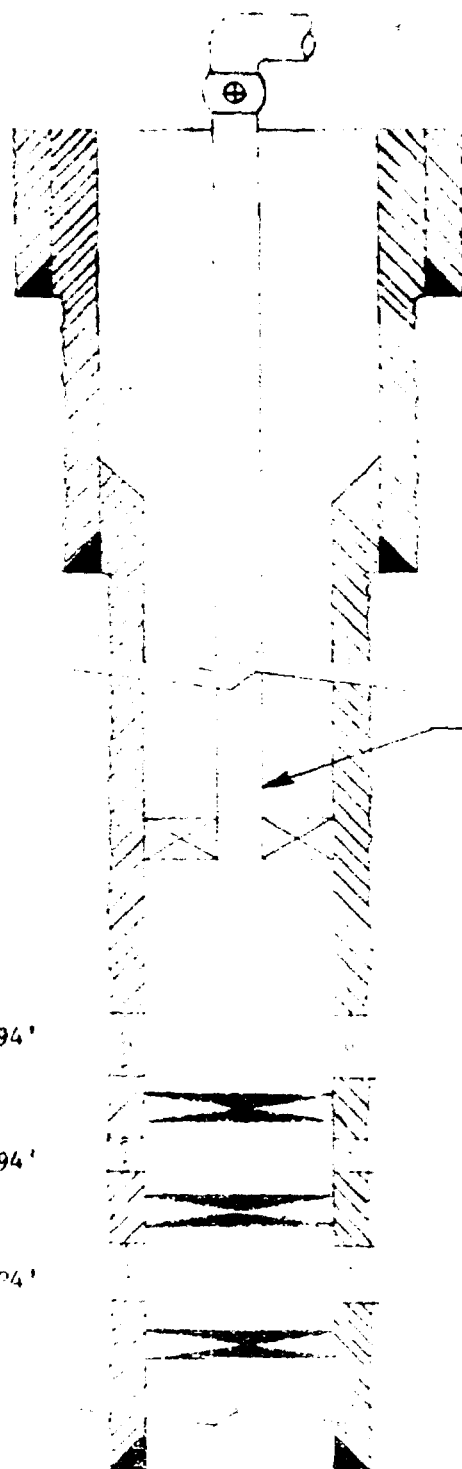
Elevation 3826' DF



PROPOSED LOVINGTON PADDOCK UNIT WIW

MOBIL OIL CORPORATION  
STATE "R" WELL NO. 12  
1980' FSL & 560' FEL, SEC. 2, T-17-S, R-36-E  
LEA COUNTY, NEW MEXICO

Elevation 3840' DF



10 3/4" 33# Csg Set @ 461'  
Cmt w/400 Sks, Circulated

Top of Liner Set @ 3258'  
Cmt Circulated

7 5/8" 24# H-40 Csg Set @  
3455', Cmt w/1491 Sks,  
Circulated

2 3/8" Plastic Coated Tubing

5 1/2" X 2 5/8" Tension  
Type Packer Set @ 6094'

6169  
6094  
75

Glorieta Top @ 6015'

Perforations:

6169-94'

6262-94'

6318-94'

PBTD. 6242'

PBTD. 6302'

PBTD. 6400'

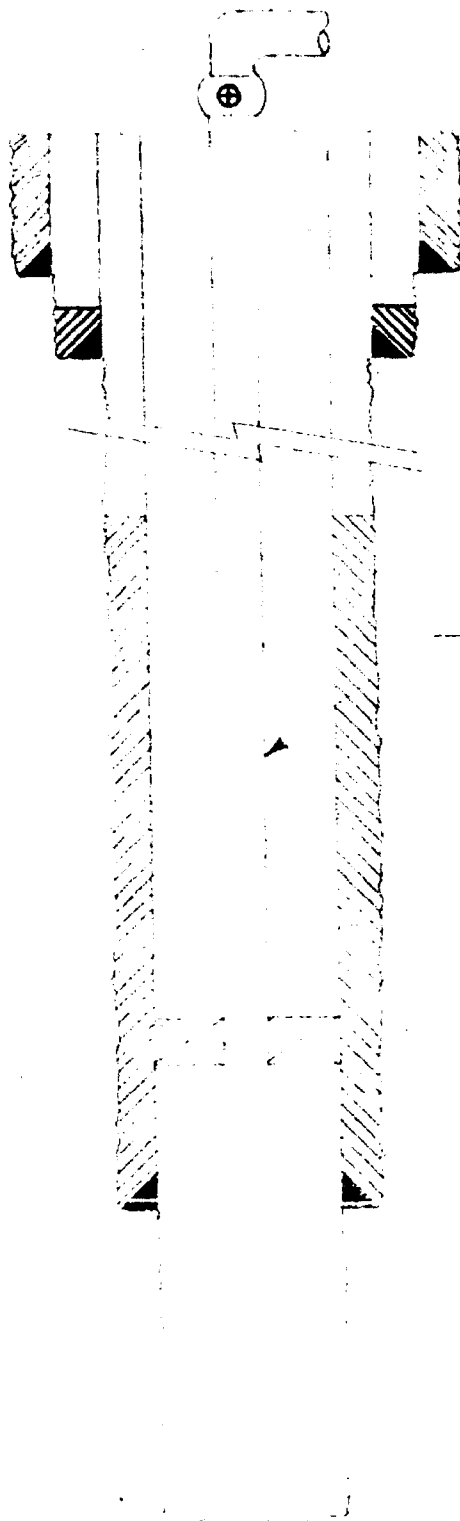
5 1/2" 17# J-55 Liner Set  
@ 8916', Cmt w/830 Sks

T D 9746'

PROPOSED LOVINGTON PADDOCK UNIT WIW

SINCLAIR OIL & GAS COMPANY  
STATE "182-A" WELL NO. 5  
1980' FSL & 1960' FWL, SEC. 31, T-16-S, R-37-E  
LEA COUNTY, NEW MEXICO

Elevation: 3830' DF



13 3/8" 48# Csg Set @ 303'  
Cmt w/350 Sks, Circulated

8 5/8" 32# Csg Set @ 3414'  
Cmt w/900 Sks  
Top Cmt @ 1611' (Calc.)

Top Cmt @ 4642'  
(Calc.)

2 3/8" Plastic Coated Tubing

Glorieta Top @ 5962'

6080  
6005  
75

5 1/2" X 2 3/8" Tension Type  
Packer Set @ Approx. 6005'

5 1/2" 15.5# J-55 Csg. Set @  
6080', Cmt w/250 sks

OH (6080-6275')

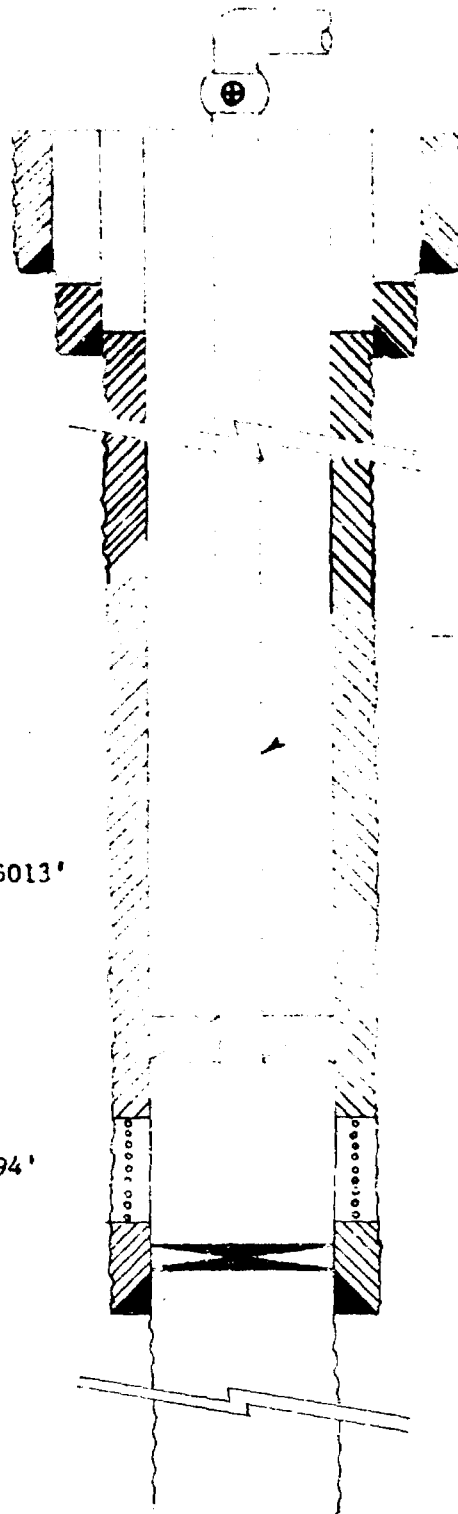
T D 6275'



PROPOSED LOVINGTON PADDOCK UNIT WIW.

SKELLY OIL COMPANY  
C. S. CAYLOR WELL NO. 5  
330' FNL & 840' FEL, SEC. 6, T-17-S, R-37-E  
LEA COUNTY, NEW MEXICO

Elevation: 3815' DF



13 3/8" 44.5# Csg Set @ 258'  
Cmt w/250 Sks, Circulated

8 5/8" 32# J-55 Csg Set @  
5010', Cmt W/2100' Sks.  
Top Cement @ 880'  
(Survey)

2 3/8" Plastic Coated Tubing

Glorieta Top @ 6013'

Perforations:

6144-94'

6144  
6069  
75

5 1/2" X 2 3/8" Tension Type  
Packer Set @ Approx. 6069'

PBTD 6231'

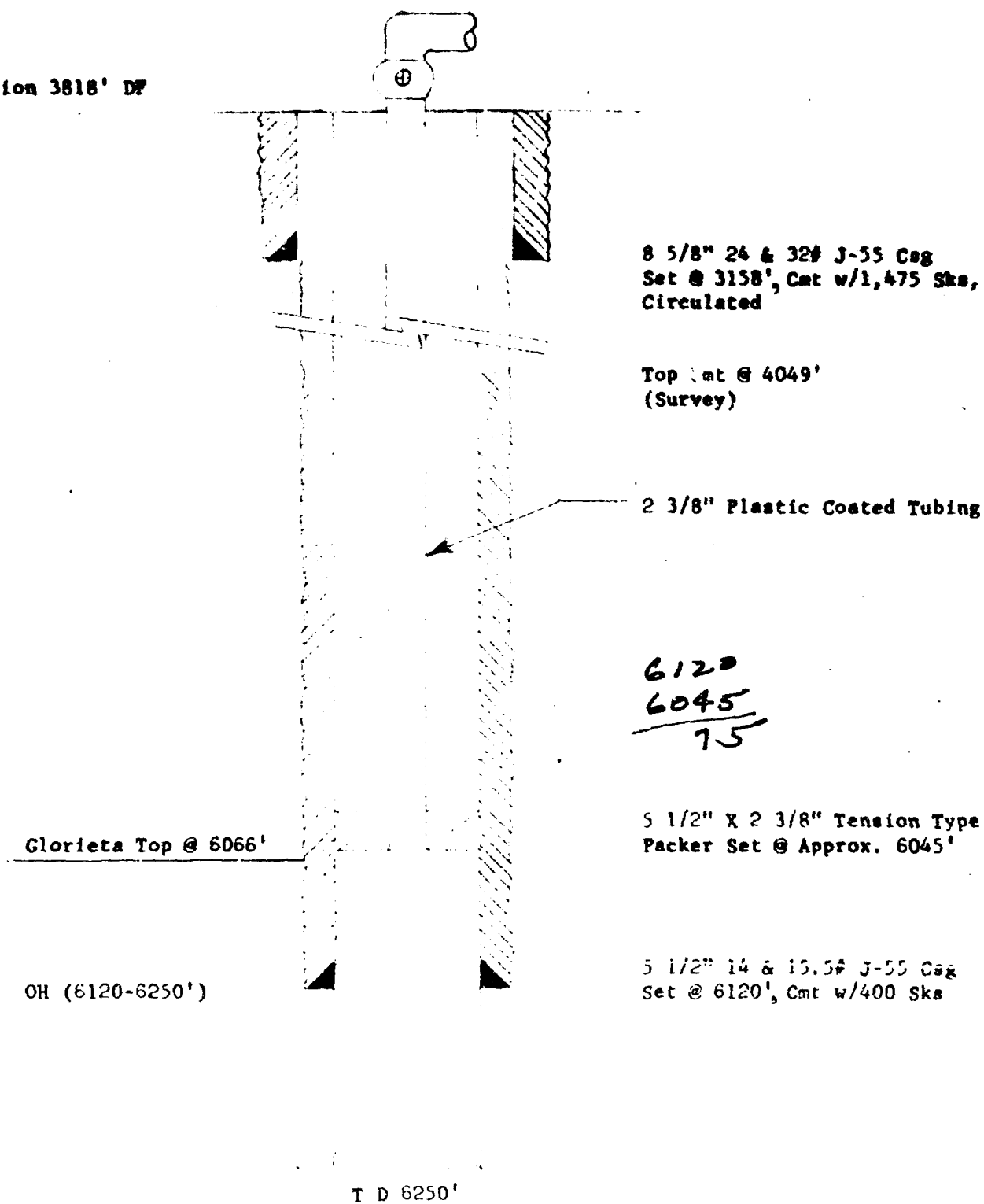
5 1/2" 17# J-55 Csg Set @  
6243', Cmt w/230 Sks, Top Cmt  
@ 4116' (Survey)

TD 14, 153'

PROPOSED LOVINGTON PADDOCK UNIT WIW

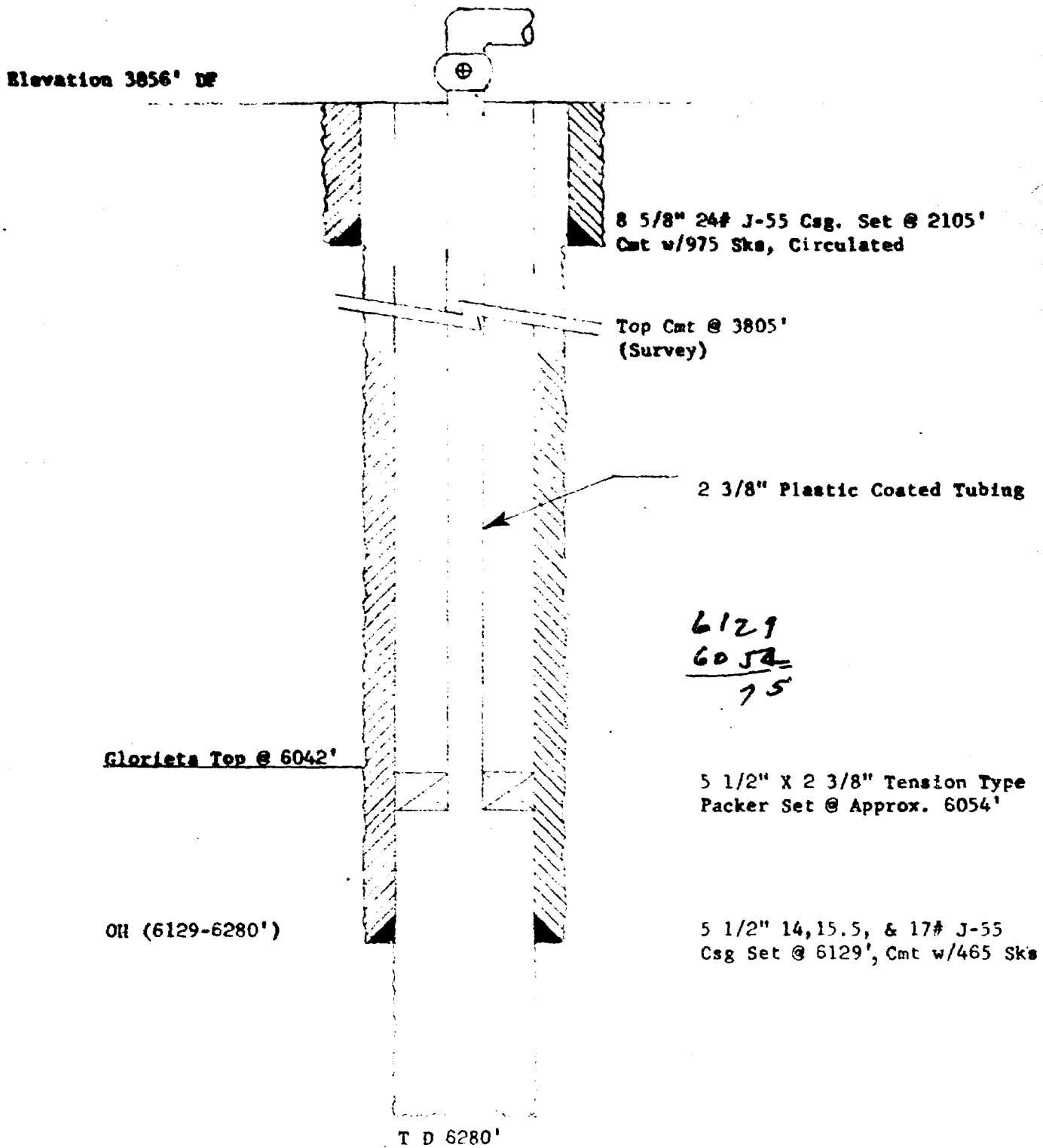
SKELLY OIL COMPANY  
M. E. CAYLOR WELL NO. 2  
1980' FSL & 1890' FWL, Sec. 6, T-17-S, R-37-E  
LEA COUNTY, NEW MEXICO

Elevation 3818' DF



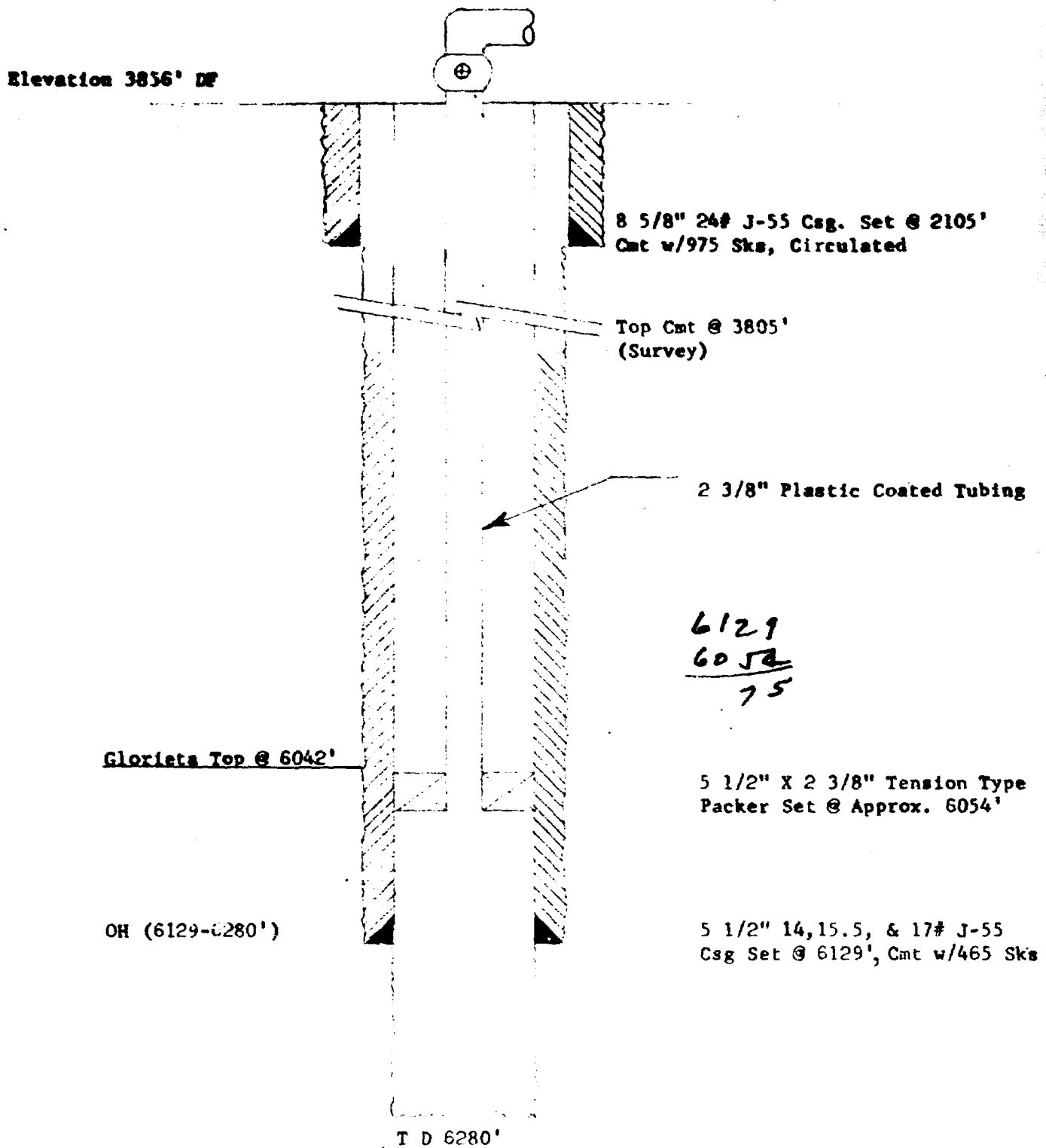
PROPOSED LOVINGTON PADDOCK UNIT WIW

SKELLY OIL COMPANY  
MEXICO "Y" WELL NO. 1  
660' FWL & 330' FEL, SEC. 35, T-16-S, R-36-E  
LEA COUNTY, NEW MEXICO



PROPOSED LOVINGTON PADDOCK UNIT WIW

SKELLY OIL COMPANY  
MEXICO "Y" WELL NO. 1  
660' FWL & 330' FHL, SEC. 35, T-16-S, R-36-E  
LEA COUNTY, NEW MEXICO



PROPOSED LOVINGTON Paddock UNIT WIW

SKELLY OIL COMPANY  
STATE "N" WELL NO. 3  
880' FNL & 330' PFL, Sec. 36, T-18-S, R-30-E  
LEA COUNTY, NEW MEXICO

Elevation 3849' DF

Glorieta Top @ 6017'

Perforations:

6148-60'

6190-6202'

6220-36'

OH(6258-79')

T D 6279'

8 5/8" 32# J-55 Csg Set @ 2115'  
Cmt w/650 Sks, Circulated  
Top Cmt @ 4874'  
(Survey)

2 3/8" Plastic Coated Tubing

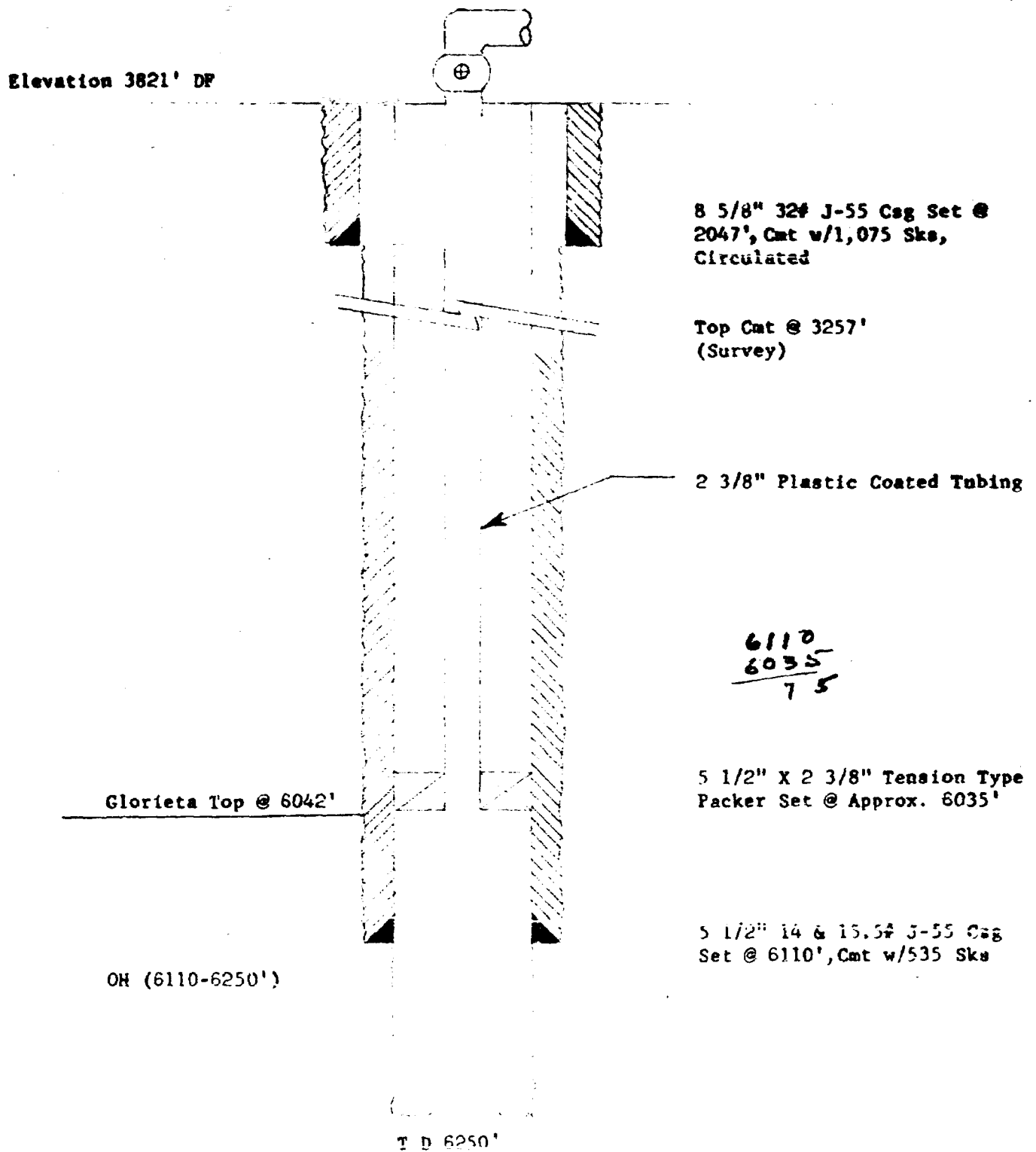
5 1/2" X 2 3/8" Tension Type  
Packer Set @ Approx. 6098'.

6148  
6098  
50

5 1/2" 15.5 & 17# J-55 Csg.  
Set @ 6258'  
Cmt w/225 Sks

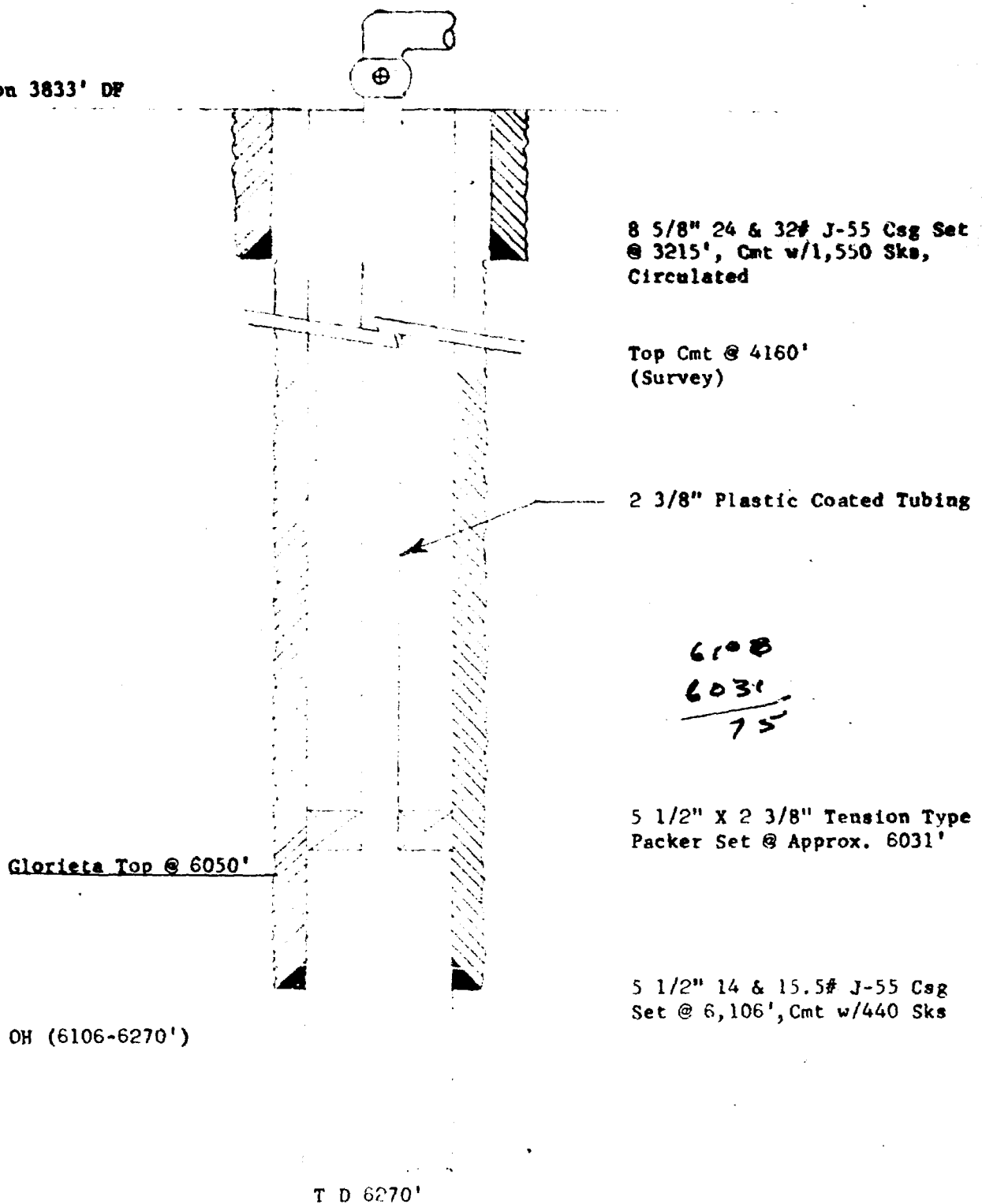
PROPOSED LOVINGTON PADDOCK UNIT WIW

SKELLY OIL COMPANY  
STATE "O" WELL NO. 20  
1830' FSL & 660' FEL, SEC. 31, T-16-S, R-37-E  
LEA COUNTY, NEW MEXICO



PROPOSED LOVINGTON PADDOCK UNIT WIW  
 SKELLY OIL COMPANY  
 STATE "O" WELL NO. 24  
 2130' FML & 1980' FEL, SEC. 31, T-16-S, R-37-E  
 LEA COUNTY, NEW MEXICO

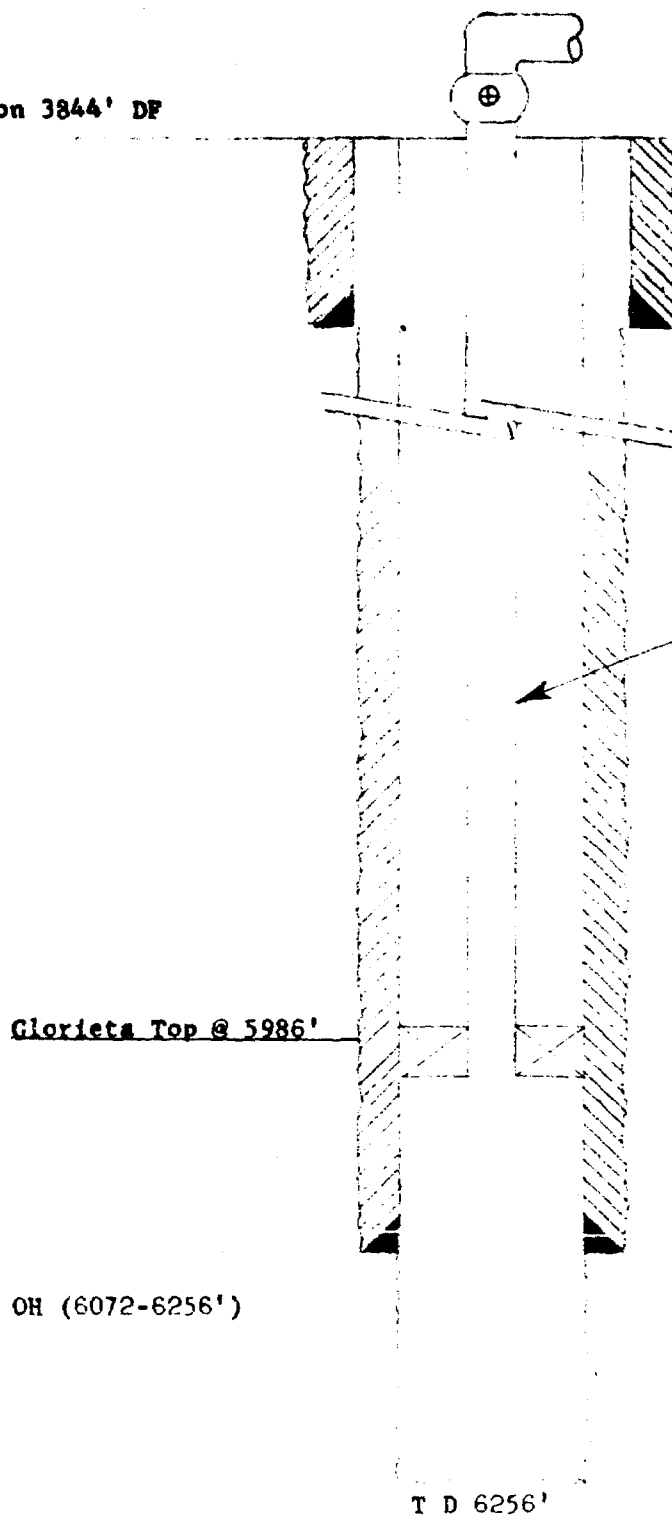
Elevation 3833' DF



PROPOSED LOVINGTON PADDOCK UNIT WIW

SKELLY OIL COMPANY  
STATE "R" WELL NO. 8  
2130' FS & W LINES, SEC. 36, T-16-S, R-36-E  
LEA COUNTY, NEW MEXICO

Elevation 3844' DF



8 5/8" 24,28 & 32# J-55, H-40  
Csg. Set @ 2080', Cmt w/950 Sks,  
Circulated

Top Cmt @ 5205'  
(Survey)

2 3/8" Plastic Coated Tubing

6072  
5997  
—  
75

5 1/2" X 2 3/8" Tension Type  
Packer Set @ Approx. 5997'

5 1/2" 15.5 #J-55 Csg. Set  
@ 6072', Cmt w/275 Sks

OH (6072-6256')

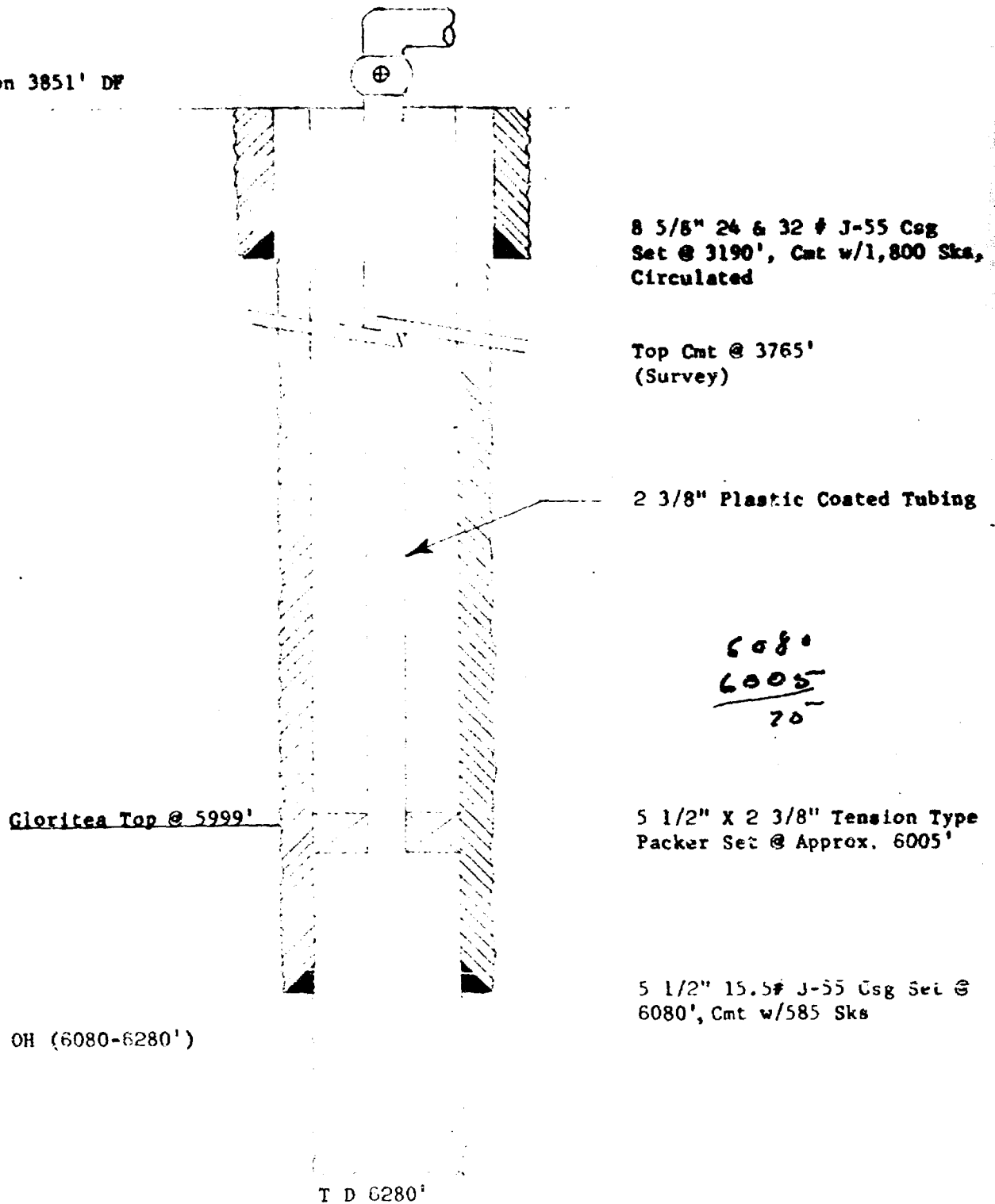
T D 6256'



PROPOSED LOVINGTON PADDOCK UNIT WII

SKELLY OIL COMPANY  
STATE "R" WELL NO. 10  
810' FNL & 2130' FWL, SEC. 36, T-16-S, R-36-E  
LEA COUNTY, NEW MEXICO

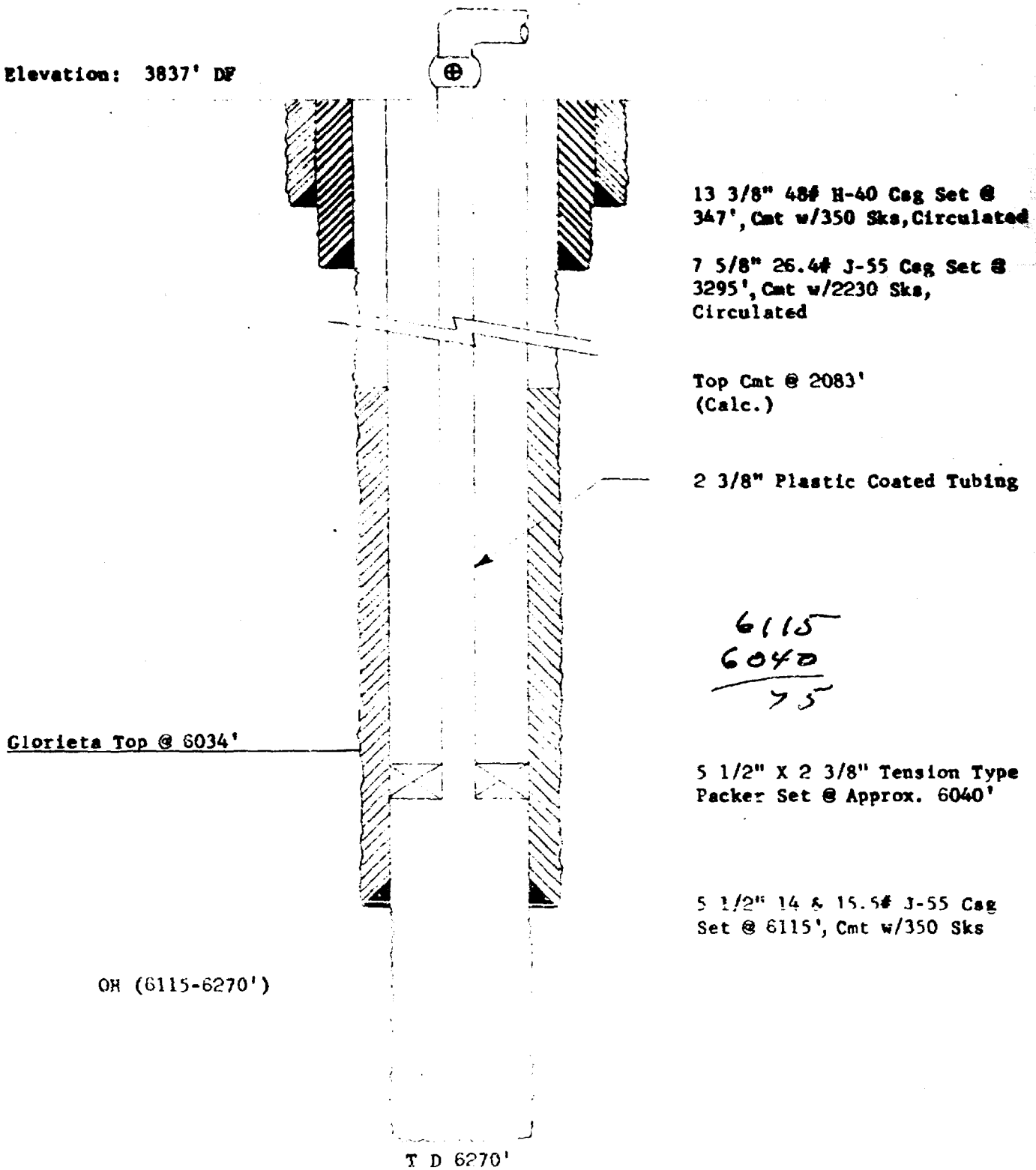
Elevation 3851' DF



PROPOSED LOVINGTON PADDOCK UNIT WIW

TEXACO, INC.  
M. GRAHAM WELL NO. 3  
940' FNL & 1980' FWL, SEC. 31, T-16-S, R-37-E  
LEA COUNTY, NEW MEXICO

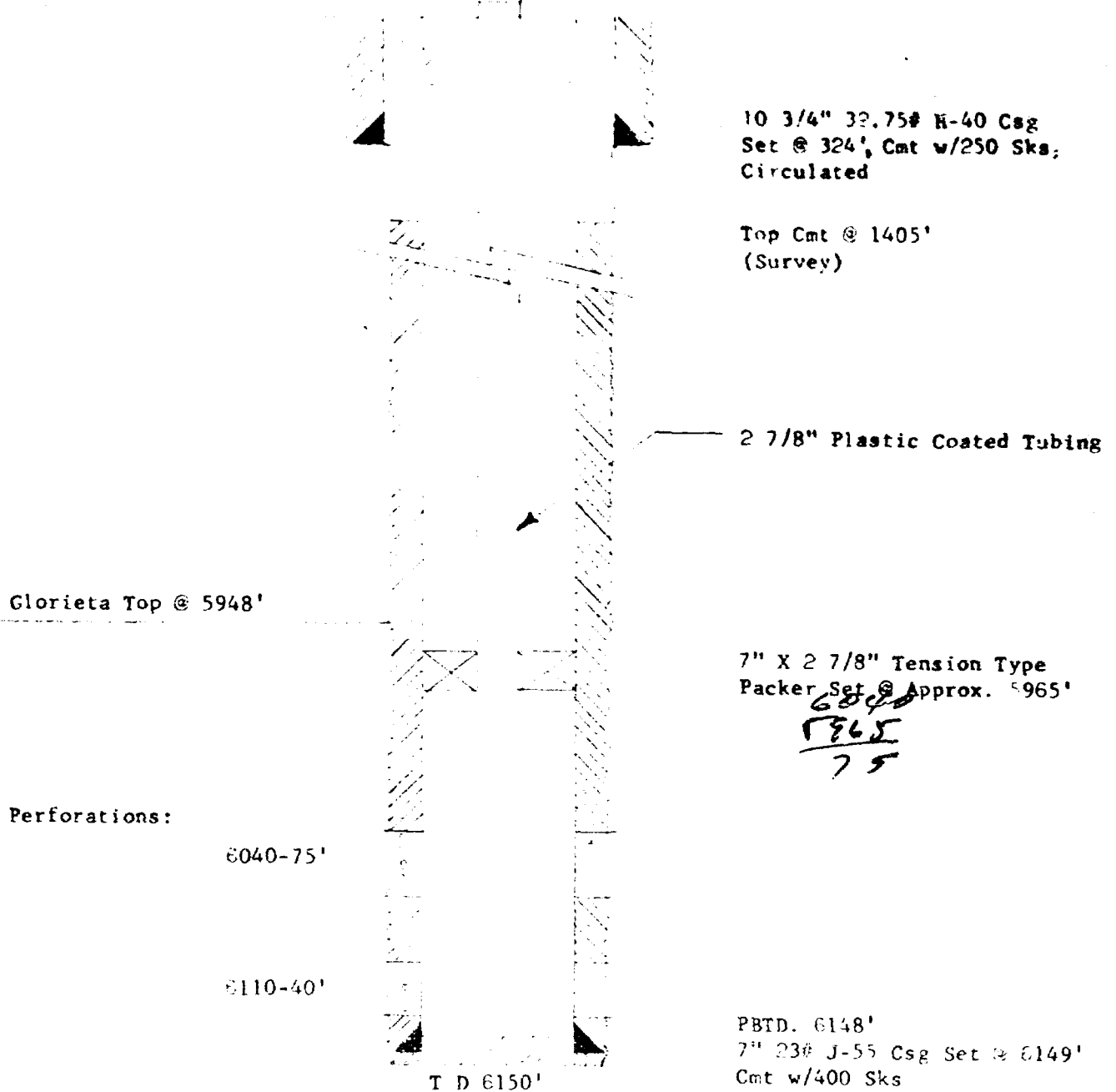
Elevation: 3837' DF



PROPOSED LOVINGTON PADDOCK UNIT WIW

TIDEWATER OIL COMPANY  
STATE "M" WELL NO. 4  
1650' FSL & 430' FEL, SEC. 36, T-16-S, R-36-E  
- LEA COUNTY, NEW MEXICO

Elevation 3831' DF



SUPPLEMENTAL  
WELL DATA

LOVINGTON PADDOCK

Operator Lease and Well Number	Completion Date	Oil Production Rate		Cumulative Oil Production to 8-1-66
		Initial	B/D Current	
Amerada				
State LA #13	5-18-53	119	8	76560
State LA #14	6-18-53	157	8	91107
State LA #15	7-24-53	163	7	61952
State LA #16	8-23-53	397	6	115055
State LA #17	9-25-53	156	6	90102
State LA #18	10-22-53	437	6	95414
State LA #19	11-16-53	490	6	90977
State LA #20	12-28-53	109	12	82680
State LB #1	5-15-53	109	5	77154
State LB #2	1-15-54	132	10	69968
Ashland				
C. S. Caylor #5	9-23-53	227	4	84826
C. S. Caylor #6	11-15-53	294	3	82322
Cities Service				
State AE #3	7-13-56	69	3	33642
State AE #4	1-29-54	180	2	106199
State AE #5	12-9-55	108	3	48226
State AE #6	5-1-56	116	3	37350
State AJ #1	7-10-53	93	3	53340
Lee Drilling				
State "E" #1	10-12-54	278	9	141551
State "E" #2	11-20-54	313	12	147224
State "E" #3	12-27-54	428	6	108051
State "E" #4	2-7-55	50	3	50204
State "E" #5	3-21-55	99	6	80450
Wm. D. Mc Bee				
State "A" #2	8-12-52	264	9	163255
State "A" #3	10-16-52	168	11	170137
State "A" #4	8-14-53	240	10	134324
State "B" #1	7-1-53	153	6	38843
Mobil Oil Company				
State "K" #4	10-28-53	143	3	40537
State "K" #5	1-4-54	120	2	37516
State "Q" #4	12-1-52	115	5	117730
State "Q" #5	9-26-53	408	6	119597
State "R" #10	4-16-53	182	0	92466
State "R" #11	10-25-53	66	4	38768
State "R" #12	4-8-54	81	4	29977
State "R" #13	3-12-54	60	4	24769
Pan American				
A. Z. Caylor #2	4-4-51	65	4	79812
State "E" -17 #1	11-11-53	8	0*	32121
Phillips Petroleum				
Kimbrough #1	3-2-53	257	16	141492
Lovington State #2	12-7-52	109	1	56782
Sinclair Oil and Gas				
State "11A" #5	6-16-56	154	0	68666
State "11B" #3	9-11-53	120	0	28928
Skelly Oil Company				
C. S. Caylor #1	8-21-56	352	9	151985
C. S. Caylor #6	12-10-53	1190	5	123959
C. S. Caylor #7	12-22-53	145	5	91323
C. S. Caylor #8	3-10-54	157	4	39299
M. S. Caylor #1	9-8-55	86	6	59038
M. S. Caylor #2	12-31-53	231	8	64889

**BEFORE EXAMINER UTZ**  
 OIL CONSERVATION COMMISSION  
 EXHIBIT NO. 3467  
 CASE NO. 3467

## Supplemental Well Data-Lovington Paddock

Operator Lease and Well Number	Completion Date	Oil Production Rate B/D		Cumulative Oil Production to 8-1-86
		Initial	Current	
Mexico "C" #2	9-5-53	88	5	123443
Mexico "Y" #1	8-15-55	185	5	58280
State "N" #3	3-18-53	180	4	98119
State "N" #4	11-21-53	310	4	86665
State "O" #15	8-2-53	508	5	145302
State "O" #16	7-8-53	494	5	132330
State "O" #13	11-22-55	50	0**	] 114414
State "O" #17	10-28-53	199	3**	
State "O" #18	11-8-53	190	3	110556
State "O" #19	12-8-53	321	3	117523
State "O" #20	3-19-54	304	9	125949
State "O" #21	5-2-54	152	2	62210
State "O" #22	9-16-54	113	7	78285
State "O" #24	12-23-54	236	4	60165
State "Q" #5	9-27-53	333	10	148342
State "Q" #6	10-14-53	343	8	154487
State "R" #7	9-12-53	352	4	126833
State "R" #8	10-11-53	487	8	150290
State "R" #9	4-28-54	442	6	100084
State "R" #10	5-19-54	336	5	107723
State "R" #11	8-3-54	297	5	117540
State "R" #12	9-18-54	309	6	115531
State "S" #3	6-24-54	265	9	120134
State "Y" #2	4-22-54	249	5	77643
State "Y" #3	10-29-54	77	2	29658
State "Y" #4	3-18-55	120	4	43601
Webb #2	7-17-52	360	3	154076
Sunray DX Oil Company				
M. Caylor #5	8-31-53	187	10	100617
M. Caylor #4	5-3-54	36	9**	] 71950
M. Caylor #6	10-3-53	301		
Tenneco				
State "Q" #1	8-25-54	96	5	54363
Texaco, Inc.				
M. Graham #1	4-11-53	293	6	112361
M. Graham #2	8-20-53	113	4	87401
M. Graham #3	10-3-53	223	6	86258
M. Graham #4	5-13-54	182	7	81458
Tidewater Oil Company				
State "R" #4	2-2-53	168	1	108805
State "R" #5	4-26-53	330	17	138992
T. E. Wright #1	8-25-53	244	7	72096

7531829

\*This well is dedicated to the Lovington San Andres Unit effective 8-1-82.  
The Paddock Zone was Shut-In during 1985 for Mechanical Reasons and was considered unusable as a Paddock Well.

\*\* Common wells contributing to cumulative production on same proration unit.

Skelly-State "O" #13 converted to Salt Water Disposal Well.

Sunray-M. Caylor #6-to be abandoned from the Paddock Zone.

**UNIT AGREEMENT**

**LOVINGTON PADDOCK  
UNIT**

**LEA COUNTY, NEW MEXICO**

DAVIS OIL CO.  
BIRMINGHAM

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
SKELLY	EXHIBIT NO. 1
CASE NO.	3466

UNIT AGREEMENT  
LOVINGTON PADDOCK UNIT  
LEA COUNTY, NEW MEXICO

Table of Contents

Index

Certification - Determination

Certificate of Approval

Preamble

Agreement Proper

Tract Map . . . . .	.Exhibit A
Tract Data . . . . .	.Exhibit B

UNIT AGREEMENT  
LOVINGTON PADDOCK UNIT  
LEA COUNTY, NEW MEXICO

I N D E X

<u>SECTION</u>		<u>PAGE</u>
1	Enabling Act And Regulations	2
2	Definitions	3
3	Exhibits	4
4	Creation And Effect Of Unit	5
5	Enlargements Of Unit Area	6
6	Unit Operator	6
7	Resignation Or Removal Of Unit Operator	7
8	Successor Unit Operator	8
9	Accounting Provisions And Unit Operating Agreement	8
10	Rights And Obligations Of Unit Operator	9
11	Equipment And Facilities Not Fixtures Attached To Realty	10
12	Plan Of Further Development And Operation	10
13	Tract Participation	11
14	Adjustment For Committed Tracts	13
15	Tracts Qualified For Participation	14
16	Allocation Of Unitized Substances	16
17	Balancing Of Production	18
18	Royalty Settlement	19
19	Rental Settlement	20
20	Conservation	21
21	Drainage	21
22	Leases And Contracts Conformed And Extended	21
23	Covenants Run With Land	23
24	Effective Date And Term	23
25	Nondiscrimination	25
26	Appearances	25
27	Notices	25
28	No Waiver Of Certain Rights	26
29	Unavoidable Delay	26
30	Loss Of Title	26
31	Nonjoinder And Subsequent Joinder	27
32	Counterparts	28
33	Joinder In Dual Capacity	28
34	Taxes	29
35	Conflict Of Supervision	30
36	No Partnership	30
37	Border Agreements	30
	Exhibit A (Map of Unit Area)	
	Exhibit B (Schedule of Ownership and Tract Participations)	



CERTIFICATION-DETERMINATION

Pursuant to the authority vested in the Secretary of Interior, under the act approved February 25, 1920, 41 Stat. 437, as amended, 30 U. S. C. secs. 181, et seq., and delegated to the Director of the Geological Survey pursuant to Departmental Order No. 2365 of October 8, 1947, I do hereby:

A. Approve the attached agreement for the development and operation of the Lovington Paddock Unit Area, State of New Mexico.

B. Certify and determine that the unit plan of development and operation contemplated in the attached agreement is necessary and advisable in the public interest for the purpose of more properly conserving the natural resources.

C. Certify and determine that the drilling, producing, rental, minimum royalty, and royalty requirements of all Federal leases committed to said agreement are hereby established, altered, changed, or revoked to conform with the terms and conditions of this agreement.

Dated \_\_\_\_\_

\_\_\_\_\_  
Director, United States  
Geological Survey

CERTIFICATE OF APPROVAL

COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO

LOVINGTON PADDOCK UNIT, LEA COUNTY, NEW MEXICO

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated \_\_\_\_\_, which has been executed, or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement, the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, and 7-11-48, New Mexico Statutes Annotated, 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed this \_\_\_\_\_ day of \_\_\_\_\_, 1966.

\_\_\_\_\_  
COMMISSIONER OF PUBLIC LANDS  
of the State of New Mexico

UNIT AGREEMENT  
LOVINGTON PADDOCK UNIT  
LEA COUNTY, NEW MEXICO

THIS AGREEMENT, entered into as of the 1st day of June, 1966, by and between the parties subscribing, ratifying or consenting hereto, and herein referred to as "parties hereto."

WITNESSETH: That,

WHEREAS, the parties hereto are the owners of working, royalty or other oil or gas interests in the land subject to this agreement; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (Sec. 3, Chap. 88, Laws 1943, as amended by Sec. 1 of Chap. 162, Laws of 1951, Chap. 7, Art. 11, Sec. 39, N.M.S. 1953 anno.) to consent to or approve this agreement on behalf of the State of New Mexico, insofar as it covers and includes lands and mineral interests of the State of New Mexico; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (Sec. 3, Chap. 88, Laws of 1943, as amended by Sec. 1, Chap. 162, Laws of 1951, Chap. 7, Art. 11, Sec. 41, N.M.S. 1953 anno.) to amend with the approval of the lessee, any oil and gas lease embracing State lands so that the length of the term of said lease may coincide with the term of such unitized development and operation of State lands; and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is authorized by law (Chap. 72, Laws of 1935, as amended by Chap. 193, Laws of 1937, Chap. 166, Laws of 1941, and Chap. 168, Laws of 1949) to approve this agreement and the conservation provisions hereof; and

WHEREAS, the Mineral Leasing Act of February 25, 1920 (41 Stat. 437, as amended, 30 U.S.C. Sections 181 et seq.)

authorizes Federal lessees and their representatives to unite with each other or jointly or separately with others in collectively adopting and operating a co-operative or unit plan of development or operation of any oil or gas pool, field or like area or any part thereof for the purpose of more properly conserving the natural resources thereof whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest; and

WHEREAS, the parties hereto hold sufficient interests in the Lovington Paddock Unit, as that term is defined hereinafter, to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to enable institution and consummation of secondary recovery operations, conserve natural resources, prevent waste and secure the other benefits obtainable through development and operation of the area subject to this agreement under the terms, conditions and limitations herein set forth.

NOW, THEREFORE, in consideration of the premises and the promises herein contained, the parties hereto commit to this agreement their entire respective interests in the Unitized Formation underlying the Unit Area (as those terms are defined hereinafter), and agree severally among themselves as follows:

1. ENABLING ACT AND REGULATIONS: The Mineral Leasing Act of February 25, 1920, as amended, supra, and all valid, pertinent regulations, including operating and unit plan regulations, heretofore issued thereunder and valid, pertinent and reasonable regulations hereafter issued thereunder are accepted and made a part of this agreement as to Federal lands, provided such regulations are not inconsistent with the terms of this agreement; and as to non-Federal lands, the oil and gas operating regulations in effect as of the effective date hereof governing drilling and producing operations, not inconsistent with the terms hereof or the laws of the State in which the non-Federal land is located, are hereby accepted and made a part of this agreement.

2. DEFINITIONS. For the purpose of this agreement, the following terms and expressions as used herein shall mean:

(a) "Commission" means the Oil Conservation Commission of the State of New Mexico.

(b) "Commissioner" means the Commissioner of Public Lands of the State of New Mexico.

(c) "Director" is defined as the Director of the United States Geological Survey.

(d) "Secretary" is defined as the Secretary of the Interior of the United States of America.

(e) "Department" is defined as the Department of the Interior of the United States of America.

(f) "Supervisor" is defined as the Oil and Gas Supervisor of the United States Geological Survey.

(g) "Royalty Interest" or "Royalty" means a right to or interest in any portion of the Unitized Substances or proceeds thereof other than a Working Interest.

(h) "Royalty Owner" means the owner of a Royalty Interest.

(i) "Tract" means each parcel of land described as such and given a Tract number in Exhibit B.

(j) "Tract Participation" means the percentages shown on Exhibit B, for allocating Unitized Substances to a Tract under this agreement.

(k) "Unit Area" means the lands shown on Exhibit A and described by Tracts in Exhibit B as to which this agreement becomes effective or to which it may be extended as herein provided.

(l) "Unit Operating Agreement" means the agreement entitled "Unit Operating Agreement, Lovington Paddock Unit, Lea County, New Mexico", of the same effective date as this agreement, and which is entered into by Working Interest Owners.

(m) "Unit Participation" of each Working Interest Owner means the sum of the percentages obtained by multiplying the Working Interest of such Working Interest Owner in each Tract by the Tract Participation of such Tract.

(n) "Unitized Formation" means the Lovington Glorieta (Paddock) Formation underlying the Unit Area, the same being the heretofore established underground reservoir which has been found to occur between the depths of 6010 feet and 6838 feet in Skelly Oil Company's State "O" No. 12 well (1650' FSL, 2310' FEL Section 31-T16S-R37E, Lea County, New Mexico) as indicated by Schlumberger's E. S. Gamma Ray log, run No. 1, taken August 9, 1952, said log being measured from a derrick floor elevation of 3829 feet above sea level.

(o) "Unitized Substances" means all oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate and all associated and constituent liquid or liquefiable hydrocarbons within or produced from the Unitized Formation.

(p) "Voting Interest" of a Working Interest Owner, unless provided otherwise hereinafter, means such Working Interest Owner's Phase III Unit Participation as same is set out in Exhibit C of the Unit Operating Agreement.

(q) "Working Interest" means an interest in Unitized Substances by virtue of a lease, operating agreement, fee title, or otherwise, including a carried interest, which interest is chargeable with and obligated to pay or bear, either in cash or out of production or otherwise, all or a portion of the cost of drilling, developing, producing and operating the Unitized Formation.

(r) "Working Interest Owner" means a party hereto who owns a Working Interest. The owner of oil and gas rights that are free of lease or other instrument conveying the Working Interest to another shall be regarded as a Working Interest Owner to the extent of seven-eighths (7/8) of his interest in Unitized Substances, and as a Royalty Owner with respect to his remaining one-eighth (1/8) interest therein.

(s) "Unit Operations" means all operations conducted by Working Interest Owners or Unit Operator pursuant to this agreement and the Unit Operating Agreement for or on account of the development and operations of the Unitized Formation for the production of Unitized Substances.

(t) "Usable Well" means a well which, in accordance with good oil field practice, is adequately equipped so that the Unitized Formation is effectively separated from other producing formations as required by the Commission, and which well is in condition to permit production of Unitized Substances to the surface by conventional production methods.

(u) Unless the context otherwise clearly indicates, words used in the singular include the plural, the plural include the singular, and the neuter gender include the masculine and the feminine.

3. EXHIBITS. The following Exhibits are incorporated herein and made a part hereof:

(a) Exhibit A attached hereto is a map showing, to the extent known to Unit Operator, the Unit Area and the boundaries and identity of Tracts and leases in said Unit Area.

(b) Exhibit B attached hereto is a schedule describing each Tract included within the Unit Area and showing the Tract Participation of each such Tract.

Whenever reference herein or in the Unit Operating Agreement is made to an Exhibit, the reference is to the Exhibit as originally attached or, if revised, to the latest revision.

The description and ownership of the respective Tracts have been established by using the best information available. If it subsequently appears that clerical errors, including errors in

Tract Ownership or mechanical miscalculations have been made, Unit Operator shall revise the Exhibits to conform with the facts. The revision shall not include any re-evaluation of engineering or geological interpretations used in determining Tract Participations. Errors and miscalculations discovered prior to the effective date of this agreement shall be corrected by Unit Operator in the first revision of Exhibits following the effective date and said first revisions shall be effective as of the effective date of this agreement. The correction of any error other than a correction of a clerical or mechanical error shall be made by Unit Operator only after first having obtained approval of Working Interest Owners and the Commissioner.

Exhibits A and B shall be revised by Unit Operator whenever changes render such revision necessary. If an Exhibit is revised pursuant to this agreement, Unit Operator shall certify and file copies of the revised Exhibit with the Commissioner and the Supervisor, and one (1) copy for record with the County Clerk, Lea County, New Mexico. Except as specified above, a revised Exhibit shall become effective on such date as may be determined by the Working Interest Owners and set forth on said revised Exhibit.

4. CREATION AND EFFECT OF UNIT. Subject to the terms and conditions of this agreement, all of the rights of the Royalty Owners, on the one hand, and of the Working Interest Owners, on the other hand, in and to the Unit Area, and all leases and lands comprising the Unit Area, and all surface rights necessary or convenient in connection with Unit Operations contemplated by this agreement, are hereby combined and unitized, insofar as such rights, leases and lands pertain to and affect the Unitized Formation as defined in Section 2 (n) of this agreement, and the Unitized Substances therein, to the same extent as if such rights, leases and lands, as so limited, were included in a single lease executed by all Royalty Owners as lessors, in favor of all Working Interest Owners as lessees, and as if said lease had been subject

to all of the terms and conditions of this agreement. The name of the Unit hereby created shall be the Lovington Paddock Unit.

5. ENLARGEMENTS OF UNIT AREA. The Unit Area may be enlarged to include therein any additional tract or tracts reasonably proved to be productive of Unitized Substances and regarded as reasonably necessary or advisable for the purposes of this agreement. The Working Interest Owner or Owners of a Tract or Tracts desiring to bring such Tract or Tracts into this Unit, may file an application therefor with Unit Operator requesting such admission. Tract Participations resulting from such enlargement shall be on a negotiated basis and, after agreement between the affected parties has been reached, such enlargement shall be effected in the following manner:

(a) Unit Operator, after approval of at least seventy percent (70%) of the then Voting Interests and after preliminary concurrence of the Commissioner, shall prepare a notice of proposed enlargement describing the contemplated changes in the boundaries of the Unit Area, the reasons therefor, and the proposed effective date thereof, preferably the first day of a month subsequent to the date of notice.

(b) Said notice shall be delivered to the Commissioner and the Supervisor, and copies thereof mailed to the last known address of each Working Interest Owner and the owners of Working and Royalty Interests in the Tract being considered for inclusion advising that 30 days will be allowed for submission to the Unit Operator of any objections.

(c) Upon expiration of the 30-day period provided in the preceding item (b) hereof, Unit Operator shall file with the Commissioner evidence of mailing of the notice of expansion and a copy of any objections thereto which have been filed with the Unit Operator, together with an application in sufficient number for approval by the Commissioner of such enlargement and with appropriate joinders.

(d) After due consideration of all pertinent information and upon the approval by the Commissioner, the enlargement shall become effective as of the date prescribed in the notice thereof.

In any approved expansion of the Unit Area, the revised Tract Participations of those Tracts which were committed prior to each such expansion shall remain in the same ratio one to another.

6. UNIT OPERATOR. Skelly Oil Company, a Delaware corporation, is hereby designated as the Unit Operator and by signature hereto as Unit Operator agrees and consents to accept the duties



and obligations of Unit Operator for the development and production of Unitized Substances as herein provided. Whenever reference is made herein to the "Unit Operator", such reference means the Unit Operator acting in that capacity and not as an owner of interest in Unitized Substances, and the term "Working Interest Owner" when used herein shall include or refer to Unit Operator as the owner of a Working Interest when such interest is owned by it.

7. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time, but such resignation shall not become effective so as to release Unit Operator from the duties and obligations of Unit Operator and terminate Unit Operator's rights as such for a period of 6 months after notice of intention to resign has been served by Unit Operator on all Working Interest Owners, the Commissioner and the Supervisor, and until all wells then drilled hereunder are placed in satisfactory condition for suspension or abandonment, whichever is required by the Supervisor as to Federal lands and the Commission as to State lands, unless a New Unit Operator shall have been selected and approved and shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by affirmative vote of at least eighty-five percent (85%) of the Voting Interests remaining after excluding the Voting Interest of Unit Operator. Such removal shall be effective upon notice thereof to the Commissioner and the Supervisor.

In all such instances of resignation or removal, until a successor Unit Operator is selected and approved, as hereinafter provided, the Working Interest Owners shall be jointly responsible for the performance of the duties of Unit Operator and shall, not later than 30 days before such resignation or removal becomes effective, appoint a common agent to represent them in any action to be taken hereunder.

The resignation or removal of Unit Operator under this agreement shall not terminate its right, title or interest as the owner of a Working Interest or other interests in Unitized Substances, but upon the resignation or removal of Unit Operator becoming effective, such Unit Operator shall deliver possession of all equipment, materials and appurtenances used in conducting the Unit Operations owned by the Working Interest Owners to the new duly qualified successor Unit Operator, or to the owners thereof if no such new Unit Operator is elected, to be used for the purpose of conducting Unit Operations hereunder. Nothing herein shall be construed as authorizing removal of any material, equipment and appurtenances needed for the preservation of any wells.

The resignation or removal of Unit Operator shall not release Unit Operator from any liability or default by it hereunder occurring prior to the effective date of its resignation or removal.

8. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender his or its resignation as Unit Operator, or shall be removed as hereinabove provided, the Working Interest Owners shall, by affirmative vote of at least seventy-five percent (75%) of the Voting Interests, select a successor Unit Operator; provided, however, that should any Working Interest Owner own a Voting Interest of more than twenty-five percent (25%), the vote of said party shall not serve to disapprove the selection of a new Unit Operator approved by eighty percent (80%) or more of the Voting Interests of the remaining Working Interest Owners and provided, further, that the Unit Operator shall not vote to succeed itself. Such selection shall not become effective until (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator, and (b) the selection shall have been approved by the Commissioner, and filed with the Supervisor.

9. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT.

All costs and expenses incurred by Unit Operator in conducting Unit Operations hereunder shall be apportioned among, borne and

paid by the Working Interest Owners, all in accordance with this agreement and the Unit Operating Agreement. Such Unit Operating Agreement shall also provide the manner in which the Working Interest Owners shall be entitled to receive their respective proportionate and allocated share of the benefits accruing hereunder in conformity with their underlying operating agreements, leases or other independent contracts and such other rights and obligations as between Unit Operator and the Working Interest Owners as may be agreed upon by the Unit Operator and the Working Interest Owners. However, the Unit Operating Agreement shall not be deemed either to modify the terms and conditions of this Unit Agreement or to relieve the Unit Operator of any right or obligation established under this Unit Agreement; in case of any inconsistency or conflict between the Unit Agreement and the Unit Operating Agreement, this agreement shall prevail. One (1) true copy of the Unit Operating Agreement shall be filed with the Commissioner and three (3) copies thereof shall be filed with the Supervisor.

10. RIGHTS AND OBLIGATIONS OF UNIT OPERATOR. Except as otherwise specifically provided herein, the exclusive right, privilege, and duty of exercising any and all rights of the parties hereto (including surface rights) which are necessary or convenient for the prospecting for, producing, storing, allocating, and distributing the Unitized Substances, are hereby granted and delegated to and shall be exercised by the Unit Operator as herein provided. Upon request therefor, acceptable evidence of title to said rights shall be deposited with said Unit Operator and, together with this agreement, shall constitute and define the rights, privileges, and obligations of Unit Operator. Nothing herein, however, shall be construed to transfer title to any land, lease, Royalty Interest, operating agreement or communitization agreement, it being understood that under this agreement the Unit Operator, in its capacity as Unit Operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

11. EQUIPMENT AND FACILITIES NOT FIXTURES ATTACHED TO REALTY.

Each Working Interest Owner has heretofore placed and used on its Tract or Tracts committed to this agreement, various well and lease equipment and other property, equipment and facilities. It is also recognized that additional equipment and facilities may hereafter be placed and used upon the Unit Area as now or hereafter constituted. Therefore, for all purposes of this agreement any and all such equipment shall be considered to be personal property and not fixtures attached to realty. Accordingly, said well and lease equipment and personal property is hereby severed from the mineral estates affected by this agreement, and it is agreed that any and all such equipment and personal property shall be and remain personal property for all purposes.

12. PLAN OF FURTHER DEVELOPMENT AND OPERATION. It is recognized and agreed by the parties hereto that the object and purpose of this agreement is to formulate and to put into effect a secondary recovery project in order to effect the optimum recovery of Unitized Substances, prevent waste and conserve natural resources. The parties hereto agree that the Unit Operator may, subject to the consent and approval of a plan of operation by the Working Interest Owners and the Commissioner, inject into the Unitized Formation, through any well or wells completed therein, brine, water, air, gas, oil, liquefied petroleum gas, or any other substance or a combination of any of said substances, whether produced from the Unitized Formation or not, and that the location of input wells and the rates of injection therein shall be governed by standards of good petroleum engineering practices and conservation methods. This agreement is and shall be subject to the conservation laws of the State of New Mexico, to the valid rules, regulations and orders of the Commissioner and the Commission and to all other applicable federal, state and municipal laws, rules, regulations and orders. The parties hereto, subject to prior rights, if any, grant to

Unit Operator the use of brine or water or both from any formation in and under the Unit Area for injection into the Unitized Formation.

A plan of operation shall be filed with the Commissioner concurrently with the filing of this Unit Agreement for final approval. Said plan of operation shall be as complete and adequate as the Commissioner may determine to be necessary for timely operation consistent herewith. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of operation.

The Unit Operator shall commence secondary recovery operations on the Unit Area within a reasonable time after the effective date of this agreement and shall carry on such operations as would a reasonably prudent operator under the same or similar circumstances.

The Working Interest Owners, the Supervisor and the Commissioner shall be furnished periodic reports on the progress of the plan of operation and any revisions or changes thereto necessary to meet changed conditions or to protect the interests of all parties to this agreement; provided, however, that any major revisions of the plan of operation involving a basic deviation from the initial plan of operation shall be subject to the consent and approval of the Working Interest Owners and the Commissioner.

13. TRACT PARTICIPATION. Tract Participations of each Tract are shown in Exhibit B, and have been computed in accordance with the following:

(a) Phase I Participation. Beginning at 7:00 A.M. on the effective date hereof and remaining in effect until 7:00 A.M. on the first day of the month next following the month in which the cumulative amount of oil produced from the Unitized Formation underlying all of the tracts described in Exhibit B from and after the effective date of this agreement equals 300,000 barrels, the Tract Participation of each Tract shall be

as shown under Phase I of Exhibit B and shall be determined from the following formula:

Tract Participation Percentage,  
Phase I equals

$$70 \frac{A}{B} \text{ plus } 30 \frac{C}{D}$$

Where: A equals total adjusted quantity of oil produced from such Tract from the Unitized Formation during the period July 1, 1964 to October 1, 1964, as agreed upon by the Working Interest Owners.

B equals the summation of the adjusted quantities of oil produced from all Tracts in the Unit Area from the Unitized Formation during the period July 1, 1964 to October 1, 1964, as agreed upon by the Working Interest Owners.

C equals the estimated remaining primary barrels of oil producible from the Unitized Formation underlying each such Tract from and after October 1, 1964, such estimated remaining primary barrels being as agreed upon by the Working Interest Owners.

D equals the summation of the estimated remaining primary barrels of oil producible from the Unitized Formation underlying all such Tracts in the Unit Area from and after October 1, 1964, such estimated remaining primary barrels of oil for each Tract being as agreed upon by the Working Interest Owners.

(b) Phase II Participation. Beginning at 7:00 A.M. on the first day of the month next following the date the 300,000 barrels referred to in (a) above shall have been produced and until 7:00 A.M. on the first day of the month next following the date when the cumulative oil produced from the Unitized Formation underlying all of the tracts described in Exhibit B from and after

termination of Phase I equals 700,000 barrels, the Tract Participation of each Tract shall be as shown under Phase II of Exhibit B, and shall be determined from the following formula:

Tract Participation Percentage,  
Phase II equals

$$30 \frac{A}{B} \text{ plus } 70 \frac{C}{D}$$

Where: A, B, C and D are as defined in (a) above.

(c) Phase III Participation. Beginning at 7:00 A.M. on the first day of the month next following the date when the 700,000 barrels referred to in (b) above shall have been produced, the Tract Participation of each Tract shall be as shown under Phase III of Exhibit B, and shall be determined from the following formula:

Tract Participation Percentage,  
Phase III equals

$$100 \frac{E}{F}$$

Where: E equals the estimated quantity of oil recoverable from the Unitized Formation underlying each such Tract by primary recovery operations as agreed upon by the Working Interest Owners.

F equals the summation of the estimated quantity of oil recoverable from the Unitized Formation underlying all such Tracts by primary recovery operations as agreed upon by the Working Interest Owners.

14. ADJUSTMENT FOR COMMITTED TRACTS. If less than all Tracts within the Unit Area are committed as of the effective date of this agreement, Unit Operator, as soon as practicable thereafter, shall file with the Commissioner and the Supervisor schedules of committed Tracts as of said effective date, which said schedules shall be designated "Revised Exhibit A" and "Revised Exhibit B", and shall be considered for all purposes as a part of this agreement. Such

revised Exhibit B shall set forth opposite each such committed Tract the revised Tract Participations therefor (which shall be calculated by using the same Tract factors and formulas which were used to arrive at the Tract Participations of each Tract as set out in original Exhibit B attached hereto, by applying the same only to the committed Tracts; it being expressly understood and agreed that the 300,000 barrels referred to in Section 13 (a) and (b) hereof shall be reduced by an amount equal to 300,000 times the total Phase I Tract Participations (expressed as a decimal) of all the tracts which fail to qualify for inclusion in the Unit Area; and the 700,000 barrels referred to in Section 13 (b) and (c) hereof shall be reduced by an amount equal to 700,000 times the total Phase II Tract Participations (expressed as a decimal) of all the Tracts which fail to qualify for inclusion in the Unit Area). Such revised Exhibits shall supersede, effective as of the effective date hereof, the Tract Participations set forth in Exhibit B attached hereto until a further revision or revisions thereof is approved by the Commissioner. The Tract Participations shown on Exhibit B attached hereto, or as may be shown on revised Exhibit B as above provided, shall govern the allocation of Unitized Substances on and after the effective date of this Unit Agreement as set forth in Section 16 hereof, and until the allocation schedule is revised pursuant to this agreement.

15. TRACTS QUALIFIED FOR PARTICIPATION. On and after the effective date hereof, and until the enlargement thereof, the Unit Area shall be composed of the Tracts listed in Exhibit B which corner or have a common boundary (Tracts separated only by a public highway or a railroad right-of-way shall be considered to have a common boundary), and that otherwise qualify as follows:

(a) Each Tract as to which Working Interest Owners owning one hundred percent (100%) of the Working Interest therein have become parties hereto and as to which Royalty Owners owning seventy-five percent (75%) or more of the Royalty Interest therein have become parties hereto.



(b) Each Tract as to which Working Interest Owners owning one hundred percent (100%) of the Working Interest therein have become parties hereto and as to which Royalty Owners owning less than seventy-five percent (75%) of the Royalty Interest therein have become parties hereto and, further, as to which:

- (i) All Working Interest Owners in any such Tract have joined in a request for the qualification of such Tract, and
- (ii) Eighty percent (80%) of the combined voting interests of Working Interest Owners in all tracts meeting the requirements of paragraph (a) have voted in favor of qualifying such Tract.

For the purpose of this paragraph (b), a Working Interest Owner's "voting interest" shall be equal to the ratio (expressed in percent) which its aggregate Phase III Unit Participation in all Tracts qualifying under paragraph (a) bears to the total Phase III Unit Participation, as shown on Exhibit B, of all Working Interest Owners in all Tracts qualifying under paragraph (a).

(c) Each Tract as to which Working Interest Owners owning less than one hundred percent (100%) of the Working Interest therein have become parties hereto, regardless of the percentage of Royalty Interest therein which is committed hereto and, further, as to which:

- (i) The Working Interest Owner operating any such Tract and all of the other Working Interest Owners in such Tract who have become parties hereto have joined in a request for qualification of such Tract and have executed and delivered an indemnity agreement indemnifying and agreeing to hold harmless the other Working Interest Owners, their successors and assigns, against all claims and demands which may be made by the owners of Working Interests in such Tract who are not parties hereto and which arise out of the qualification of such tract; and
- (ii) Eighty percent (80%) of the combined voting interests of Working Interest Owners in all Tracts meeting the requirements of paragraphs (a) and (b) have voted in favor of the qualification of such Tract and acceptance of the indemnity agreement.

For the purpose of this paragraph (c), a Working Interest Owner's "voting interest" shall be equal to the ratio (expressed in percent) which its aggregate Phase III Unit Participation in all Tracts qualifying under paragraphs (a) and (b) bears to the total Phase III Unit Participation, as shown on Exhibit B, of all Working Interest Owners in all Tracts qualifying under paragraphs (a) and (b). Upon the qualification of such a Tract, the Unit Participation which would have been attributed to the nonsubscribing owners of the Working Interest in such Tract, had they become parties to this agreement and

the Unit Operating Agreement, shall be attributed to the Working Interest Owners in such Tract who have become parties to such agreements, in proportion to their respective Working Interests in the Tract.

16. ALLOCATION OF UNITIZED SUBSTANCES. All Unitized Substances produced and saved (less, save and except any part of such Unitized Substances used in conformity with good operating practices on unitized land for drilling, operating, camp and other production or development purposes and for pressure maintenance or unavoidably lost) shall be apportioned among and allocated to the committed Tracts in accordance with the respective Tract Participations effective hereunder during the respective periods such Unitized Substances were produced, as set forth in the schedule of participation in Exhibit B. The amount of Unitized Substances so allocated to each tract, and only that amount (regardless of whether it be more or less than the amount of the actual production of Unitized Substances from the well or wells, if any, on such Tract), shall, for all intents, uses and purposes, be deemed to have been produced from such Tract.

The Unitized Substances allocated to each such Tract shall be distributed among, or accounted for to, the parties executing, consenting to or ratifying this agreement entitled to share in the production from such Tract in the same manner, in the same proportions, and upon the same conditions, as they would have participated and shared in the production from such Tracts, or in the proceeds thereof, had this agreement not been entered into, and with the same legal force and effect.

No Tract committed to this agreement and qualified for participation as above provided shall be subsequently excluded from participation hereunder on account of depletion of Unitized Substances.

If the Working Interest and the Royalty Interest in any Tract are divided with respect to separate parcels or portions of such Tract and owned severally by different persons, the Tract

Participation of such Tract shall, in the absence of a recordable instrument executed by all such owners and furnished to Unit Operator fixing the divisions of ownership, be divided among such parcels or portions in proportion to the number of surface acres in each.

The Unitized Substances allocated to each Tract shall be delivered in kind to the respective Working Interest Owners and parties entitled thereto by virtue of the ownership of Oil and Gas Rights therein or by purchase from such owners. Each Working Interest Owner and the parties entitled thereto shall have the continuing right to receive such production in kind at a common point within the Unit Area and to sell or dispose of the same as it sees fit. Each such party shall have the right to construct, maintain and operate all necessary facilities for that purpose on unitized land, provided the same are so constructed, maintained and operated as not to interfere with operations carried on pursuant hereto. Subject to Section 18 hereof, any extra expenditure incurred by Unit Operator by reason of the delivery in kind of any portion of the Unitized Substances shall be borne by the party receiving the same in kind. In the event any Working Interest Owner shall fail to take or otherwise adequately dispose of its proportionate share of the production from the Unitized Formation currently as and when produced, then so long as such condition continues, Unit Operator, for the account and at the expense of the Working Interest Owner of the Tract or Tracts concerned, and in order to avoid curtailing the operation of the Unit Area, may sell or otherwise dispose of such production to itself or to others on a day-to-day basis at not less than the prevailing market price in the area for like production, and the account of such Working Interest Owner shall be charged therewith as having received such production. The net proceeds, if any, of the Unitized Substances so disposed of by Unit Operator shall be paid to the Working Interest Owner of the Tract or Tracts concerned. Notwithstanding the foregoing,

Unit Operator shall not make a sale into interstate commerce of any Working Interest Owner's share of gas production without first giving such Working Interest Owner sixty (60) days notice of such intended sale.

Any party receiving in kind or separately disposing of all or any part of the Unitized Substances allocated to any Tract, or receiving the proceeds therefrom if the same is sold or purchased by Unit Operator, shall be responsible for the payment of all Royalty due under the lease or leases covering the Tracts contributed by it and received into the Unit, and each such party shall hold each other party hereto harmless against all claims, demands and causes of action for such Royalty on the lease or leases and Tracts contributed by it to the Unit Area.

17. BALANCING OF PRODUCTION. Unit Operator shall make a proper and timely gauge of all lease and other tanks located on each committed Tract in order to ascertain the amount of merchantable oil in such tanks, above the pipe line connections, as of 7:00 A.M. on the effective date hereof. All Unitized Substances which are a part of the prior allowable of the well or wells from which the same were produced shall be and remain the property of the Working Interest Owners entitled thereto as if the Unit had not been formed and such Working Interest Owners shall promptly remove same. Any such Unitized Substances not so removed may be sold by the Unit Operator for the account of such Working Interest Owners, subject to the payment of all royalty to Royalty Owners under the terms and provisions of the applicable lease or leases and other contracts. All such Unitized Substances which are in excess of the prior allowable of the well or wells from which the same were produced shall be regarded and treated the same as Unitized Substances produced after the effective date hereof. If, as of the effective date hereof, any Tract is overproduced with respect to the allowable of the well or wells on that Tract and the amount of such over-production has been sold or otherwise disposed of,

such over-production shall be regarded and included as a part of the Unitized Substances produced after the effective date hereof, and the amount thereof charged to such Tract as having been delivered to the persons entitled to Unitized Substances allocated to such Tract.

18. ROYALTY SETTLEMENT. The United States and the State of New Mexico and all Royalty Owners who, under existing contracts, are entitled to take in kind a share of the Unitized Substances produced from any committed Tract, shall hereafter be entitled to take in kind their share of the Unitized Substances allocated to such Tract, and Unit Operator shall make deliveries of such Royalty share taken in kind in conformity with the applicable contracts, laws and regulations. Settlement for Royalty Interests not taken in kind shall be made by Working Interest Owners responsible therefor under existing contracts, laws and regulations; provided, however, that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any royalties due under their leases except that royalties due on Unitized Substances shall be computed in accordance with the terms of this agreement.

If gas obtained from lands not subject to this agreement is introduced into the Unitized Formation for use in pressure maintenance, stimulation of production, or increasing ultimate recovery, which shall be in conformity with a plan first approved by the Commissioner, a like amount of gas, less appropriate deductions for loss from any cause, may be withdrawn from the formation into which the gas was introduced, royalty free as to dry gas, but not as to the products extracted therefrom; provided that such withdrawal shall be pursuant to such conditions and formulas as may be prescribed or approved by the Supervisor and the Commissioner; provided further, that such right of withdrawal shall terminate on the termination of this agreement. If

liquefied petroleum gases obtained from lands or formations not subject to this agreement be injected into the Unitized Formation for the purpose of increasing ultimate recovery, which shall be in conformance with a plan first approved by the Commissioner, part or all of such liquefied petroleum gases may be withdrawn royalty free pursuant to such conditions and formulas as may be prescribed or approved by the Supervisor and the Commissioner.

Royalty due the United States shall be computed as provided in the operating regulations and paid in value or delivered in kind as to all Unitized Substances on the basis of the amounts thereof allocated to unitized Federal land as provided herein at the rate specified in the respective Federal leases or at such lower rate or rates as may be authorized by law or regulation; provided, that for leases on which the royalty rate depends on the daily average production per well, such average production shall be determined in accordance with the operating regulations as though the unitized lands were one lease.

Royalty due on account of State and fee lands shall be computed and paid on the basis of all Unitized Substances allocated to such lands.

19. RENTAL SETTLEMENT. Rentals or minimum royalties due on leases committed hereto shall be paid by Working Interest Owners responsible therefor under existing contracts, laws and regulations provided that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any rental or minimum royalty in lieu thereof, due under their leases. Rental for lands of the State of New Mexico subject to this agreement shall be paid at the rate specified in the respective leases from the State of New Mexico. Rental or minimum royalty for lands of the United States of America subject to this agreement shall be paid at the rate specified in the respective leases from the United States of America, unless rental or minimum royalty is waived, suspended,

or reduced by law or by approval of the Secretary or his duly authorized representative.

20. CONSERVATION. Operations hereunder and production of Unitized Substances shall be conducted so as to provide for the most economical and efficient recovery of such substances to prevent waste as defined by State laws or regulations.

21. DRAINAGE. Unit Operator shall take appropriate and adequate measures to prevent drainage of Unitized Substances from the committed Tracts by wells on land not subject to this agreement.

22. LEASES AND CONTRACTS CONFORMED AND EXTENDED. The terms, conditions, and provisions of all leases, subleases, and other contracts relating to exploration, drilling, development, or operation for Unitized Substances in and under the Unit Area are hereby expressly modified and amended to the extent necessary to make the same conform to the provisions hereof, but otherwise to remain in full force and effect; and the parties hereto hereby consent that the Secretary as to Federal leases and the Commissioner as to State leases shall and each by his approval hereof, or by the approval hereof by his duly authorized representative, does hereby establish, alter, change or revoke the drilling, producing, rental, minimum royalty and royalty requirements of Federal and State leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this agreement, and without limiting the generality of the foregoing, all leases, subleases, and contracts are particularly modified in accordance with the following:

(a) The development and operation of lands subject to this agreement under the terms hereof shall be deemed full performance of all obligations for development and operation with respect to each and every part or separately owned Tract committed to this agreement, regardless of whether there is any development of any particular Tract or part thereof, notwithstanding anything to the contrary in any lease, operating agreement, or other contract by and between the parties hereto, or their respective predecessors in interest, or any of them.

(b) Drilling and producing operations performed hereunder upon any tract will be accepted and deemed to be performed upon and for the benefit of each and every Tract, and no lease

shall be deemed to expire by reason of failure to drill or produce wells situated on the land therein embraced.

(c) Suspension of drilling or producing operations on the Unit Area pursuant to direction or consent of the Commissioner and the Supervisor shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every Tract.

(d) Each lease, sublease, or contract relating to the exploration, drilling, development or operation for Unitized Substances, which by its terms might expire prior to the termination of this agreement, is hereby extended beyond any such term so provided therein so that it shall be continued in full force and effect for and during the term of this agreement, as to the land committed so long as such lease remains subject hereto.

(e) Any Federal lease for a fixed term of twenty (20) years or any renewal thereof or any part of such lease which is made subject to this agreement shall continue in force beyond the term provided therein until the termination hereof. Any other Federal lease committed hereto shall continue in force beyond the term so provided therein or by law as to the committed land so long as such land remains committed hereto, or in the event actual drilling operations are commenced on unitized land, in accordance with the provisions of this agreement, prior to the end of the primary term of such lease and are being diligently prosecuted at that time, such lease shall be extended for two (2) years and so long thereafter as oil or gas is produced in paying quantities in accordance with the provisions of the Mineral Leasing Act (Revision of 1960).

(f) Any lease embracing lands of the State of New Mexico which is made subject to this agreement shall continue in force beyond the term provided therein as to the lands committed hereto until the termination hereof.

(g) Any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto shall be segregated as to the portion committed and as to the portion not committed and the terms of such lease shall apply separately as to such segregated portions commencing as of the effective date hereof. Notwithstanding any of the provisions of this agreement to the contrary, any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto shall continue in full force and effect beyond the term provided therein as to all lands embraced in such lease (whether within or without the Unit Area), if oil or gas are discovered and are capable of being produced in paying quantities from some part of the lands embraced in such lease committed to this agreement at the expiration of the secondary term of such lease; or if, at the expiration of the secondary term, the lessee or the Unit Operator is then engaged in bona fide drilling or reworking operations on some part of the lands embraced therein, any such lease shall remain in full force and effect so long as such operations are being diligently prosecuted, and if they result in the production of Unitized Substances, said lease shall continue in full force and effect as to all of the lands embraced therein, so long thereafter as Unitized Substances are produced in paying quantities from any portion of said lands.

(h) The segregation of any Federal lease committed to this agreement is governed by the following provision in the fourth paragraph of Sec. 17(j) of the Mineral Leasing Act as amended by the Act of September 2, 1960 (74 Stat. 781-784): "Any [Federal] lease heretofore or hereafter committed to any such [unit] plan



embracing lands that are in part within and in part outside of the area covered by any such plan shall be segregated into separate leases as to the lands committed and the lands not committed as of the effective date of unitization; Provided, however, That any such lease as to the nonunitized portion shall continue in force and effect for the term thereof but for not less than two years from the date of such segregation and so long thereafter as oil or gas is produced in paying quantities."

23. COVENANTS RUN WITH LAND. The covenants herein shall be construed to be covenants running with the land with respect to the interests of the parties hereto and their successors in interest until this agreement terminates, and any grant, transfer, or conveyance of interest in land or leases subject hereto shall be and hereby is conditioned upon the assumption of all privileges and obligations hereunder by the grantee, transferee, or other successor in interest. No assignment or transfer of any Working Interest subject hereto shall be binding upon Unit Operator until the first day of the calendar month after Unit Operator is furnished with the original, photostatic or certified copy of the instrument of transfer; and no assignment or transfer of any Royalty Interest shall be binding upon the Working Interest Owner responsible therefor until the first day of the calendar month after said Working Interest Owner is furnished with the original, photostatic or certified copy of the instrument of transfer.

24. EFFECTIVE DATE AND TERM. This agreement shall become binding upon each party who executes or ratifies it as of the date of execution or ratification by such party and shall become effective as of 7:00 o'clock A.M. of the first day of the calendar month next following:

(a) The execution or ratification of this agreement and the Unit Operating Agreement by Working Interest Owners owning a combined Phase III Unit Participation of at least seventy-five percent (75%), and the execution or ratification of this agreement by Royalty Owners owning a combined interest of at least sixty-five percent (65%) of the Royalty Interest in the Unit Area, calculated on the basis of Phase III Tract Participations; and

(b) The approval of this agreement by the Commissioner and the Commission; and

(c) The filing of at least one counterpart of this

agreement for record in the office of the County Clerk of Lea County, New Mexico, by the Unit Operator.

Provided, further, that if (a), (b) and (c) above are not accomplished on or before January 1, 1967, this agreement shall ipso facto expire on said date (hereinafter called "expiration date") and thereafter be of no further force or effect, unless prior thereto this agreement has been executed or ratified by Working Interest Owners owning a combined Phase III Unit Participation of at least seventy-five percent (75%) and that Working Interest Owners owning at least eighty percent (80%) of the combined Phase III Unit Participation committed to this agreement have decided to extend said expiration date for a period not to exceed one year (hereinafter called "extended expiration date"). If said expiration date is so extended and (a), (b) and (c) are not accomplished on or before said extended expiration date, this agreement shall ipso facto expire on said extended expiration date and thereafter be of no further force and effect.

Unit Operator shall, within 30 days after the effective date of this agreement, file for record in the office where a counterpart of this agreement is recorded, a certificate to the effect that this agreement has become effective according to its terms and stating further the effective date.

The term of this agreement shall be for and during the time that Unitized Substances are produced in paying quantities from the Unit Area and so long thereafter as drilling, reworking or other operations (including secondary recovery operations) are prosecuted thereon without cessation of more than 90 consecutive days and so long thereafter as Unitized Substances can be produced as aforesaid, unless sooner terminated by Working Interest Owners in the manner hereinafter provided.

This agreement may be terminated at any time with the approval of the Commissioner by Working Interest Owners owning seventy-five percent (75%) of Phase III Unit Participation.

Upon termination of this agreement, the further development and operation of the Unit Area as a Unit shall be abandoned, Unit Operations shall cease, and thereafter the parties hereto shall be governed by the terms and provisions of the leases and contracts affecting the separate tracts just as if this agreement had never been entered into.

If not otherwise covered by the leases unitized under this agreement, Royalty Owners hereby grant Working Interest Owners a period of six (6) months after termination of this agreement in which to salvage, sell, distribute or otherwise dispose of the personal property and facilities used in connection with Unit Operations.

25. NONDISCRIMINATION. In connection with the performance of work under this agreement, Unit Operator agrees to comply with all of the provisions of Section 202 (1) to (7) inclusive, of Executive Order 11246 (30 F.R. 12319), which are incorporated by reference in this agreement.

26. APPEARANCES. Unit Operator, after notice to other parties affected shall have the right to appear for or on behalf of any and all interests affected hereby before the Commissioner, the Department and the Commission, and to appeal from any order issued under the rules and regulations of the Commissioner, the Department, or the Commission, or to apply for relief from any of said rules and regulations or in any proceedings relative to operations before the Commissioner, the Department, or the Commission, or any other legally constituted authority; provided, however, that any other interested party shall also have the right at his or its own expense to be heard in any such proceedings.

27. NOTICES. All notices, demands, objections or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if made in writing and personally delivered to the party or parties or sent by postpaid certified mail addressed to such party or parties at their respective addresses

set forth in connection with the signatures hereto or to the ratification or consent hereof or to such other address as any such party may have furnished in writing to party sending the notice, demand or statement.

28. NO WAIVER OF CERTAIN RIGHTS. Nothing in this agreement contained shall be construed as a waiver by any party hereto of the right to assert any legal or constitutional right or defense as to the validity or invalidity of any law of the State of New Mexico or the United States, or rules or regulations issued thereunder in any way affecting such party, or as a waiver by any such party of any right beyond his or its authority to waive; provided, however, that each party hereto covenants that during the existence of this agreement such party will not resort to any action at law or in equity to partition the Unit Area or the facilities used in the development or operation thereof and to that extent waives the benefits of all laws authorizing such partition.

29. UNAVOIDABLE DELAY. All obligations under this agreement requiring the Unit Operator to commence or continue drilling or to operate on or to produce Unitized Substances from any of the lands subject to this agreement shall be suspended while, but only so long as, the Unit Operator, despite the exercise of due care and diligence, is prevented from complying with such obligations, in whole or in part, by strikes, acts of God, Federal, State or municipal law or agencies, unavoidable accidents, uncontrollable delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not.

30. LOSS OF TITLE. If any Tract ceases to have sufficient Working Interest or Royalty Interest committed to this agreement to meet the conditions of Section 15 because of failure of title of any party hereto, such Tract shall be regarded as not committed hereto as of 7:00 A.M. on the first day of the calendar month in which such

failure of title is finally determined; provided, however, that no such Tract shall be so regarded if same can be requalified under said Section 15 within 90 days after the date on which such title failure was finally determined. If any such Tract cannot be so requalified, Unit Operator shall recompute the Tract Participation of each Tract remaining subject to this agreement so that such Tract Participation shall remain in the same ratio one to another. Thereafter, Unit Operator shall revise Exhibits A and B conformably with such recomputation. Each such revised Exhibit shall be effective at 7:00 A.M. on the first day of the calendar month in which such failure of title is finally determined.

If title to a Working Interest fails, the rights and obligations of Working Interest Owners by reason of such failure shall be governed by the Unit Operating Agreement. If title to a Royalty Interest fails, but the tract to which it relates remains committed to this agreement, the Royalty Owner whose title failed shall not be entitled to participate hereunder insofar as its participation is based on such lost Royalty Interest.

In the event of a dispute as to the title to any Working or Royalty Interest, or other interest subject hereto, payment or delivery on account thereof may be withheld without liability or interest until the dispute is finally settled; provided, that as to State or Federal land or leases, no payment of funds due the State of New Mexico or the United States of America shall be withheld, but such funds shall be deposited as directed by the Commissioner or the Supervisor, as the case may be, to be held as unearned money pending final settlement of the title dispute and then applied as earned or returned in accordance with such final settlement.

Unit Operator, as such, is relieved from any responsibility for any defect or failure of title hereunder.

31. NONJOINDER AND SUBSEQUENT JOINDER. Any oil or gas

interest within the Unit Area not committed hereto prior to the effective date of this agreement may thereafter be committed, upon compliance with the applicable provisions of this Section 31 and of Section 15 (TRACTS QUALIFIED FOR PARTICIPATION) by the owner or owners thereof subscribing or consenting to this agreement and, if such uncommitted interest is a working interest, by the owner of such interest also subscribing to the Unit Operating Agreement.

Such right of joinder subsequent to the effective date hereof shall be subject to such requirements or approvals and shall be upon such terms and conditions as may be agreed to by at least seventy percent (70%) of the then Voting Interests of the Working Interest Owners, and approval by the Commissioner, with appropriate revisions of Exhibits A and B, effective as of 7:00 A.M. on the first day of the calendar month next following such agreement by the Working Interest Owners.

After the effective date of this agreement, joinder by a non-working interest owner must be consented to in writing by the Working Interest Owners committed hereto and responsible for the payment of any benefits which may accrue hereunder in behalf of such non-working interest.

32. COUNTERPARTS. This agreement may be executed in any number of counterparts, no one of which needs to be executed by all parties, or it may be ratified or consented to by separate instrument in writing specifically referring hereto and shall be binding upon all those parties who have executed such a counterpart, ratification, or consent hereto with the same force and effect as if all such parties had signed the same document and regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands within the above described Unit Area.

33. JOINDER IN DUAL CAPACITY. Execution as herein provided by any party either as a Working Interest Owner or as a Royalty Owner shall commit all interests that may be owned or controlled by such party.

34. TAXES. The Working Interest Owners shall render and pay or cause to be rendered and paid for their account and the account of the Royalty Owners all valid taxes on or measured by the Unitized Substances in and under or that may be produced, gathered and sold from the land subject to this agreement after the effective date of this agreement, or upon the proceeds or net proceeds derived therefrom. The Working Interest Owners in each Tract may charge the proper proportion of said taxes to the Royalty Owners having interests in said Tract, and may currently retain and deduct sufficient of the Unitized Substances or derivative products, or net proceeds thereof, from the allocated share of each Royalty Owner to secure reimbursement for the taxes so paid. No such taxes shall be charged to the United States or the State of New Mexico or to any lessor who has a contract with his lessee which requires the lessee to pay such taxes.

In order to avoid title failures which might incidentally cause the title to a Working Interest or Royalty Interest to fail, the owners of (1) the surface rights to each committed Tract, (2) severed mineral or royalty interest in said Tracts and (3) improvements located in said Tracts not utilized for Unit operations shall individually be responsible for the rendition and assessment, for ad valorem tax purposes, of all such property, and for the payment of such taxes, except as otherwise provided in any contract or agreement between such owners and a Working Interest Owner or Owners. If any ad valorem taxes are not paid by such owner responsible therefor when due, Unit Operator may, at any time prior to tax sale, pay the same, redeem such property and discharge such tax liens as may arise through non-payment. In the event Unit Operator makes any such payment or redeems any such property from tax sale, Unit Operator shall be reimbursed therefor by the Working Interest Owners in proportion to their respective Unit Participations then in effect, and Unit Operator shall withhold from any proceeds derived from the sale of Unitized Substances otherwise due to said delinquent taxpayer or

taxpayers an amount sufficient to defray the costs of such payment or redemption, such withholding to be distributed among the Working Interest Owners in proportion to their respective contributions toward such payment or redemption. Such withholding shall be without prejudice to any other remedy, either at law or in equity, which may be available for exercise by the Unit Operator or by the Working Interest Owners.

35. CONFLICT OF SUPERVISION. Neither the Unit Operator nor the Working Interest Owners, nor any of them, shall be subject to any forfeiture, termination or expiration of any rights hereunder or under any leases or contracts subject hereto, or to any penalty or liability on account of delay or failure in whole or in part to comply with any applicable provisions thereof, to the extent that the said Unit Operator or the Working Interest Owners, or any of them, are hindered, delayed or prevented from complying therewith by reason of failure of the Unit Operator to obtain, in the exercise of due diligence, the concurrence of proper representatives of the United States and proper representatives of the State of New Mexico in and about any matters or things concerning which it is required herein that such concurrence be obtained. The parties hereto, including the Commission, agree that all powers and authority vested in the Commission in and by any provisions of this agreement are vested in the Commission and shall be exercised by it pursuant to the provisions of the laws of the State of New Mexico and subject in any case to appeal or judicial review as may now or hereafter be provided by the laws of the State of New Mexico.

36. NO PARTNERSHIP. It is expressly agreed that the relation of the parties hereto is that of independent contractors and nothing in this agreement contained, express or implied, or any operations conducted hereunder, shall create or be deemed to have created a partnership or association between the parties hereto or any of them.

37. BORDER AGREEMENTS. Subject to the approval of the Commissioner, and with the concurrence of Working Interest Owners owning



at least seventy percent (70%) Phase III Unit Participation, Unit Operator may enter into a border-protection agreement or agreements with the working interest owners of lands adjacent to the committed Tracts with respect to the operations in the border area for the maximum ultimate recovery, conservation purposes and proper protection of the parties and interests.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed as of the date first above written and have set opposite their respective names the date of execution and the address of each of the respective executing parties.

ATTEST:

SKELLY OIL COMPANY

\_\_\_\_\_  
Assistant Secretary

By \_\_\_\_\_  
Vice President

Date of Signature:  
\_\_\_\_\_

Appvd. as to  
Form *[Signature]*

P. O. Box 1650  
Tulsa, Oklahoma 74102

STATE OF OKLAHOMA        }  
COUNTY OF TULSA        } SS

The foregoing instrument was acknowledged before me this day of \_\_\_\_\_, 1966, by \_\_\_\_\_, Vice President of SKELLY OIL COMPANY, a Delaware corporation, on behalf of said corporation.

My Commission expires:  
\_\_\_\_\_

\_\_\_\_\_  
Notary Public

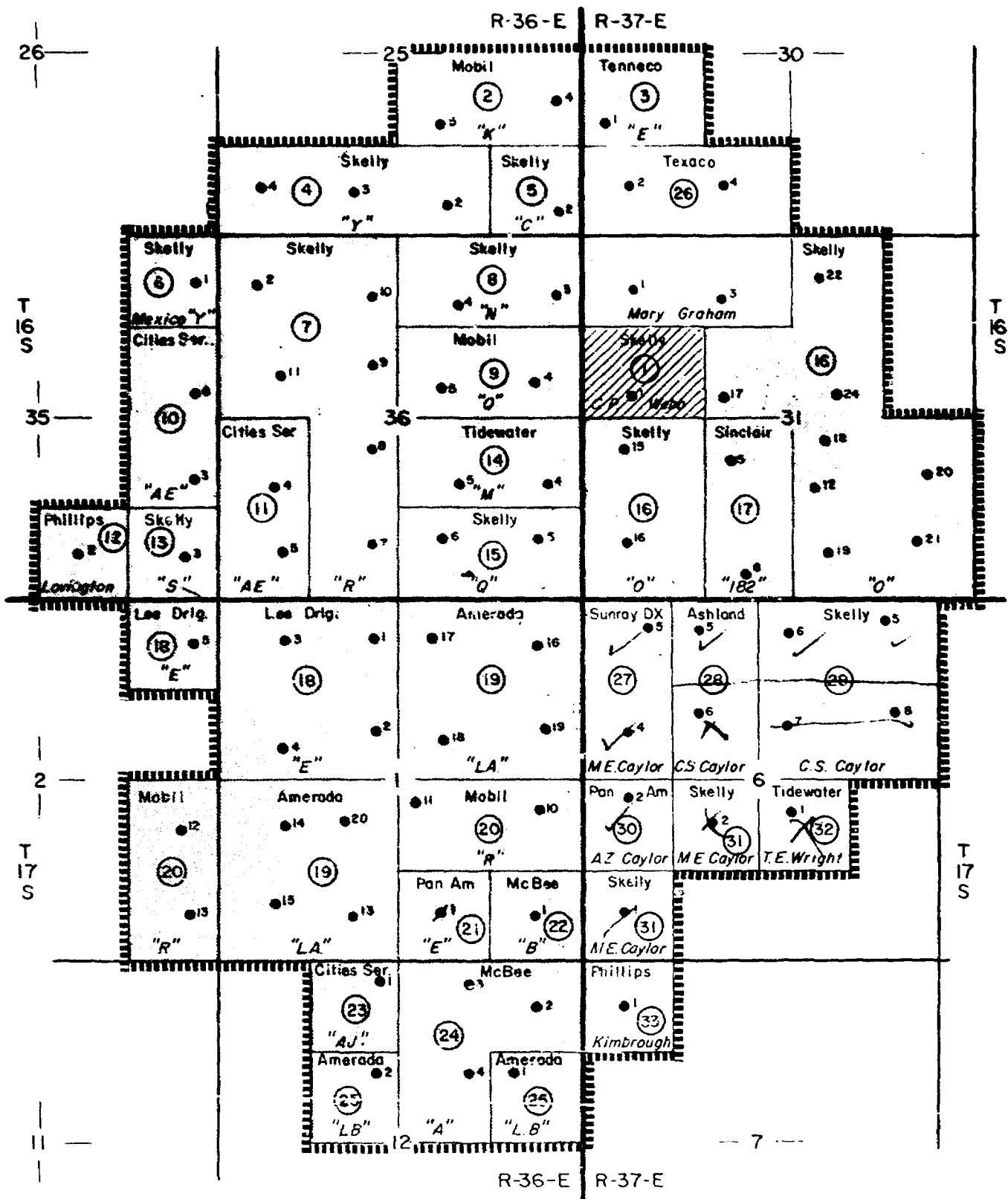


EXHIBIT "A"  
LOVINGTON PADDOCK UNIT  
LEA COUNTY, NEW MEXICO

- Legend
- UNIT AREA
  - TRACT NUMBER
  - FEE LANDS
  - STATE LANDS
  - FEDERAL LANDS

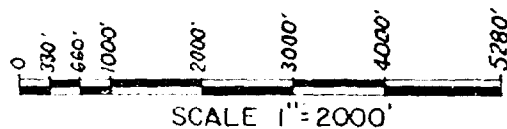


EXHIBIT "B"  
 SCHEDULE SHOWING TRACT PARTICIPATIONS AND PERCENTAGE AND KIND OF OWNERSHIP  
 OF ALL LANDS WITHIN THE LOVINGTON PADDOCK UNIT  
 TOWNSHIPS 16 AND 17 SOUTH, RANGES 36 AND 37 EAST, LEA COUNTY, NEW MEXICO

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
FEDERAL LANDS										
1	T16S-R37E Sec. 31; Lot 2	49.68	LC 058413 12-31-38 H.B.P.	United States Geological Survey Sliding Scale	Skelly Oil Company	None	Skelly Oil Company 100%	0.48689	0.33838	1.87751

One (1) Federal Tract Containing 49.68 Acres or 1.49% of Unit Area

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
STATE LANDS										
2	<u>T16S-R36E</u> Sec. 25; N/2 SE/4	80	B-1527 12-21-32 H.B.P.	State of New Mexico 12.50	Mobil Oil Corporation	None	Mobil Oil Corporation 100%	0.76141	0.58128	0.96198
3	<u>T16S-R37E</u> Sec. 30; Lot 3	50.03	B-1679-1 1-10-48 H.B.P.	State of New Mexico 12.50	Tenneco Oil Company	None	Tenneco Oil Company 100%	1.23293	1.23049	0.76597
4	<u>T16S-R36E</u> Sec. 25; SW/4 SE/4, S/2 SW/4	120	B-7893 12-10-38 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	2.17263	1.96836	1.96082
5	<u>T16S-R36E</u> Sec. 25; SE/4 SE/4	40	B-9077-2 4-10-41 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	0.87214	0.82754	1.55322
6	<u>T16S-R36E</u> Sec. 35; NE/4 NE/4	40	B-2936 9-10-49 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	0.87214	0.82754	0.76569
7	<u>T16S-R36E</u> Sec. 36; NW/4, E/2 SW/4	240	B-7766-2 B-7766-5 9-10-38 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	7.04374	6.08460	9.09402
8	<u>T16S-R36E</u> Sec. 36; N/2 NE/4	80	B-2411 1-11-34 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	1.39130	1.17572	2.30458

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
9	<u>T168-R36E</u> Sec. 36; S/2 NE/4	80	B-2894 5-10-34 H.B.P.	State of New Mexico 12.50	Mobil Oil Corporation	None	Mobil Oil Corporation 100%	1.75777	1.34706	2.92051
10	<u>T168-R36E</u> Sec. 35; SE/4 NE/4, NE/4 SE/4	80	E-1678-1 1-10-48 H.B.P.	State of New Mexico 12.50	Cities Service Oil Company	None	Cities Service Oil Company 100%	1.52451	1.16893	0.90711
11	<u>T168-R36E</u> Sec. 36; W/2 SW/4	80	B-7766-8 9-10-38 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Cities Service Oil Company 100%	0.80638	0.61832	1.89404
12	<u>T168-R36E</u> Sec. 35; SW/4 SE/4	40	B-9686 6-10-42 H.B.P.	State of New Mexico 12.50	Phillips Petroleum Company	None	Phillips Petroleum Company 100%	0.57694	0.50600	0.71762
13	<u>T168-R36E</u> Sec. 35; SE/4 SE/4	40	B-7316 11-10-37 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	1.60575	1.61064	1.59166
14	<u>T168-R36E</u> Sec. 36; N/2 SE/4	80	B-7845 11-10-38 H.B.P.	State of New Mexico 12.50	Tidewater Oil Company	None	Tidewater Oil Company 100%	1.30271	0.68290	2.85038
15	<u>T168-R36E</u> Sec. 36; S/2 SE/4	80	B-7845 11-10-38 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	3.48486	3.12931	3.88071

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
16	<u>T16S-R37E</u> Sec. 31; SE/4, W/2 NE/4, SE/4 NW/4, Lots 3 and 4	379	B-7896 12-10-38 H.B.P.	State of New Mexico 12.50	Skelly Oil Company	None	Skelly Oil Company 100%	10.82507	10.77612	12.42844
17	<u>T16S-R37E</u> Sec. 31; E/2 SW/4	80	B-1505 12-20-32 H.B.P.	State of New Mexico 12.50	Sinclair Oil & Gas Company	None	Sinclair Oil & Gas Company 100%	0.64826	0.37059	1.16908
18	<u>T17S-R36E</u> Sec. 1; Lots 3 and 4, S/2 NW/4 Sec. 2; Lot 1	198.99	B-1553 12-27-32 H.B.P.	State of New Mexico 12.50	Pan American Petroleum Corporation	None	Lee Drilling Company 50% Pan American Petroleum Corporation 50%	9.34029	9.75083	7.26165
19	<u>T17S-R36E</u> Sec. 1; Lots 1 and 2, S/2 NE/4, SW/4	319.80	B-2359-1 1-23-34 H.B.P.	State of New Mexico 12.50	Amerada Petroleum Corporation	None	Amerada Petroleum Corporation 100%	9.15222	8.33001	9.07154
20	<u>T17S-R36E</u> Sec. 1; W/2 SE/4 Sec. 2; E/2 SE/4	160	B-3009 6-11-34 H.B.P.	State of New Mexico 12.50	Mobil Oil Corporation	None	Mobil Oil Corporation 100%	3.51138	3.51850	2.57405
21	<u>T17S-R36E</u> Sec. 1; SW/4 SA 4	40	B-1553 12-27-32 H.B.P.	State of New Mexico 12.50	Pan American Petroleum Corporation	None	Pan American Petroleum Corporation 100%	0.00000	0.00000	0.52906

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
22	<u>T178-136E</u> Sec. 1; SE/4 SE/4	40	B-1553 12-27-32 H.B.P.	State of New Mexico 12.50	Pan American Petroleum Corporation	Pan American Petroleum Corporation 8.20312 (1) Henry Sweeney 2.73438	William D. McBee 50% Howard P. Holmes 50%	0.96666	1.07716	0.56792
23	<u>T178-136E</u> Sec. 12; NE/4 NW/4	40	E-388 6-11-45 H.B.P.	State of New Mexico 12.50	Cittles Service Oil Company	None	Cittles Service Oil Company 100%	0.70132	0.55987	0.67936
24	<u>T178-136E</u> Sec. 12; N/2 NE/4, SW/4 NE/4	120	B-1429-5 12-5-32 H.B.P.	State of New Mexico 12.50	W. D. McBee	None	William D. McBee 100%	10.63583	14.09519	7.47137
25	<u>T178-136E</u> Sec. 12; SE/4 NW/4, SE/4 NE/4	80	B-1429-4 12-5-32 H.B.P.	State of New Mexico 12.50	Amerada Petroleum Corporation	None	Amerada Petroleum Corporation 100%	3.12552	3.66562	2.43106

Note (1) Override becomes operative when lease production reaches 15 BOPD based on monthly production.

Twenty-Four (24) State Tracts Containing 2587.82 Acres or 77.84% of Unit Area

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC		LESSEE OF RECORD	OVERRIDING		WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION			
				ROYALTY & PERCENTAGE			ROYALTY & PERCENTAGE			PHASE I	PHASE II	PHASE III	
FREE LANDS													
26	<u>T168-R37E</u> Sec. 30; Lot 4, SE/4 SW/4 Sec. 31; Lot 1, NE/4 NW/4	179.71	Various 11-17-43 to 1-7-53 H.B.P.	R. G. Anderson 0.23149 Constance E. Byers 0.02174 Mary Louise Carson 0.62500 Glenn B. Chadwick 0.08695 George H. Cortes 0.52083 Pan American Petroleum Corporation 1.04167 C. O. Drew 0.69445 Felmont Oil Corporation 1.84028 Carey Mason Graham 0.62500 John D. Graham 0.62500 Ruth E. Graham 0.62500 Dilworth S. Hager 0.69445 Richard F. Hare 0.52083 Home-Stake Royalty Corporation 0.21737	The Texas Company	Roswell Securities Company 2.58257 Harriett E. Savage 1.29130 Elizabeth Dibrell 0.64564 Kaercher Company 0.64564	Texaco Inc. 52.35756 Sohlo Petroleum Company 11.11111 George H. Coates 2.77778 Tidewater Oil Company 1.51615 Sinclair Oil & Gas Company 0.45192 Late Oil Company 13.04019 Margaret S. Mallard 3.05630 Charles H. Strain 3.05630 Clara M. Strain 6.11259 J. N. Dunlavey 6.52010	5.09093	4.50794	4.74418			



TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III

26, CONTINUED

	Jeb Oil Company	1.38889								
	Petroleum Corporation of Texas	0.52000								
	Edna Pryor	0.62500								
	Sohio Petroleum Corporation	1.38888								
	Kirke C. Veeder	0.02174								
	R. W. Viersen Estate	0.46297								
	J. R. Woods	0.03472								
	Lydlan H. Woods	0.03472								

27      1178-R37E  
Sec. 6;  
Lots 4 and 5

74.66      4-28-38  
H.B.P.

	Amerada Petroleum Corporation	2.34375								
	R. S. Anderson	0.39063								
	J. M. Armstrong	0.48828								
	Thula M. Caylor, Executrix of Estate of C. S. Caylor	0.78125								
	Walter B. Collins	0.55062								
	J. E. Green	0.19531								
	Charles J. Hoffman	0.19531								
	Skelly Oil Company			None						
	Sunray Oil Company	100%								
					4.22570		4.15722		2.45540	

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
27, CONTINUED										
	Sarah A. Link, Executrix U/W of L. C. Link			0.39063						
	June D. Speight			0.78125						
	Roger B. Owings			0.19531						
	Skelly Oil Company			2.34375						
	Southland Royalty Company			2.73438						
	William K. Warren Foundation			0.19531						
	Ralph E. Wertz, Jr., and Royal F. Wertz, Co-Trustees of Trust Created U/W of Cora Cox Wertz			0.58594						
	W. A. Yeager			0.48828						
28	T178-R37E Sec. 6; Lot 3, SE/4 NW/4	80.12	4-28-38 H.B.P.							
	Amerada Petroleum Corporation			2.34375	Skelly Oil Company	None	Ashland Oil & Refining Company	1.20248	0.97520	2.07761
	R. S. Anderson			0.39063						
	J. M. Armstrong			0.48825						
	Thula M. Caylor, Executrix of Estate of C. S. Caylor			0.78125						
	Walter B. Collins			0.39062						

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III

28, CONTINUED

J. E. Green  
0.19525  
Charles J. Hoffman  
0.19537  
Sarah A. Link,  
Executrix U/W of  
L. C. Link  
0.39063  
June D. Speight  
0.78125  
Roger B. Owings  
0.19525  
Skelly Oil Company  
2.34375  
Southland Royalty  
Company  
2.73438  
William K. Warren  
Foundation  
0.19537  
Royal F. Wertz and  
Ralph E. Wertz, Jr.,  
Co-Trustees U/W  
of Cora Cox Wertz  
0.58600  
W. A. Yeager  
0.48825

29  
T17S-R37E  
Sec. 6;  
Lots 1 and 2,  
S/2 NE/4  
160.48  
8-14-61  
H.B.P.  
Amerada  
Petroleum  
Corporation  
2.34375  
J. M. Armstrong  
0.48828  
Thula M. Caylor,  
Executrix of Estate  
of C. S. Caylor  
0.78125  
Skelly Oil  
Company  
None  
Skelly Oil  
Company  
100%  
5.12470  
4.77586  
5.91399

0.78125

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III

29, CONTINUED

June D. Speight  
0.78125  
Sarah A. Link,  
Executrix U/W of  
L. C. Link  
0.39063  
Roger B. Owings  
0.19531  
Skelly Oil Company  
2.34375  
Southland Royalty  
Company  
2.73438  
Royal F. Wertz and  
Ralph E. Wertz, Jr.,  
Co-Trustees U/W  
of Cora Cox Wertz  
0.58594  
W. A. Yenger  
0.48828  
Charles J. Hoffman  
0.19531  
Walter B. Collins  
0.39063  
R. S. Anderson  
0.39062  
J. E. Green  
0.19531  
William K. Warren  
Foundation  
0.19531

Mary Elizabeth  
Caylor  
4.72890  
Howard Chamlee  
0.59565  
Pan American  
Petroleum  
Corporation  
None  
Amerada  
Petroleum  
Corporation  
50%  
1.37618  
1.31503  
1.07235

30  
T178-R37E  
Sec. 6;  
Lot 6

37.35  
9-29-38  
H.B.P.

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
30, CONTINUED										
31	<u>1178-R37E</u> Sec. 6; Lot 7, SW/4 SW/4	77.39	9-24-46 H.B.P.	Mary Elizabeth Caylor 4.72890 Howard Chamlee 0.59565 First National Bank of Midland, Trustee for Trust 204 1.35015 J. S. Noland 1.35015 Skelly Oil Company 0.78125 June D. Speight 2.34375 Deen Williams 1.35015	Skelly Oil Company	None	Skelly Oil Company 44.08118 June D. Speight 18.75000 Phillips Petroleum Company 37.16882	2.64091	2.68761	1.97499
32	<u>1178-R37E</u> Sec. 6; NW/4 SE/4	40	6-1-48 H.B.P.	Katherine M. Alston 0.12188 Lee Carter 0.39062 Kifle Carter 0.39063	Tidewater Oil Company	F. E. Charlier 0.17090	Tidewater Oil Company 47.75479 Skelly Oil Company 42.08896	1.69399	2.14871	1.14047

32, CONTINUED

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III
	Powhatan Carter, Jr.	0.19531					Coy S. Lowe 7.81250			
	Anderson Carter	0.19531					Gordon M. Cone 2.34375			
	Cecilia Caylor	0.52083								
	F. E. Chartler and Peggy Chartler	0.39062								
	M. W. Coll and Lillian H. Coll	0.78125								
	Gordon M. Cone	0.29297								
	Clara A. Elkins, Executrix of Estate of Seth Alston, Deceased	0.12187								
	A. N. Etz and Bonnie R. Etz	0.39062								
	George Etz and Olivia W. Etz	0.39062								
	Mrs. Ada Hinton	0.19533								
	J. R. Hinton	0.19533								
	S. P. Johnson, Jr., Trustee U/W of S. P. Johnson, Deceased	1.17187								
	Coy S. Lowe	0.97657								
	Mary Ruth McCrory and W. T. Reed, Executors of J. L. Reed Estate	0.76125								

TRACT NO.	DESCRIPTION	NO. OF ACRES	SERIAL NO. & DATE OF LEASE OR APPLICATION	BASIC ROYALTY & PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY & PERCENTAGE	WORKING INTEREST & PERCENTAGE	PERCENTAGE TRACT PARTICIPATION		
								PHASE I	PHASE II	PHASE III

32. CONTINUED

	Rachel C. Moore								
	0.52083								
	O. T. Nolan and								
	Mary Caylor Nolan								
	0.52083								
	H. Dillard Schenck and								
	L. Kirby Schenck								
	0.29297								
	Skelly Oil Company								
	3.12560								
	Grace Tyler Wright								
	0.39062								
	Beas Yearwood								
	0.14687								

33  
T1/3-R37E  
 Sec. 7;  
 Lot 1

37.42	6-4-48 H.B.P.	Ashland Oil & Refining Company	Phillips Petroleum Company	None	Phillips Petroleum Company	3.84646	5.19747	2.38646
		1.56250			87.50000			
		C. M. Selby			Tidewater Oil Company			
		10.93750			12.50000			

Eight (8) Fee Tracts Containing 687.13 Acres or 20.67% of Unit Area

LOVINGTON PADDOCK UNIT AREA TOTAL			
1	Federal Tract	49.68 Acres	1.49%
24	State Tracts	2587.82 Acres	77.84%
8	Fee Tracts	687.13 Acres	20.67%
33	Tracts	3324.63 Acres	100.00%

Application of SKELLY  
for a waterflood project, Lea  
County, New Mexico.

---