Mobil Oil Corporation

P.O. BOX 633
MIDLAND, TEXAS 79701

March 1, 1967

WFX-257

A. L. Porter, Jr., Secretary-Director - 2
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

ADMINISTRATIVE APPROVAL
PILOT WATERFLOOD EXPANSION
VACUUM (GRAYBURG-SAN ANDRES) FIELD
LEA COUNTY, NEW MEXICO

Dear Sir:

Under the provisions of Order No. R-1244 and Rule 701.E.5, Mobil Oil Corporation respectfully requests your administrative approval to expand our Vacuum Waterflood Project in the Vacuum (Grayburg-San Andres) Pool, Lea County, New Mexico. The proposed expansion will need the conversion of ten wells, State Bridges Nos. 7, 20, 21, 24, 40, 43, 46, 51, 76 and 83 to water injection.

The Vacuum Pilot Waterflood was started in December, 1958, by Magnolia Petroleum Company in the north-central part of the State Bridges lease. The original pilot consisted of two 80-acre five-spots. The initial project was expanded in 1963 by the conversion of two additional wells to water injection. A large increase in producing rate occurred in March, 1964 and continued to increase until it reached a peak of 407 BOPD. A decline trend was established in early 1965 after the peak. The current producing rate is approximately 190 BOPD.

In compliance with Rule 701.E.5, the attached material is submitted for your consideration of our request. The following comments on the attached material are furnished by way of clarification.

1. Plat of waterflood area - This map shows the existing pilot waterflood area and the location of the proposed injection wells. Application for permission to drill the additional water input well, as shown on the map, will be filed separately.

2. Logs - Attached are logs of Well Nos. 40, 76 and 83. They are the only logs available in the expansion area.

3. Graphic history of Vacuum Pilot Flood Project - This is offered as supplementary data on the performance of all wells in the project area.

4. Diagrammatic sketches of the proposed injection wells - The sketches illustrate the present wellbore conditions, name and depth of the formation for water injection and the planned setup of subsurface equipment for water injection.

5. Forms C-116 - Compilation of test data from eleven wells indicates changes in production before and after stimulation by waterflood. Well Nos. 7, 21, 24, 40 and 76 have exhibited response to water injection. They are also offset by at least one producing well having such response. Well Nos. 43, 51 and 46 have not shown evidence of response to date. However, they are situated one location either directly or diagonally offset to the producing well which has experienced response to the flood. Conversion of Well Nos. 83 and 20 is needed for completing the injection pattern at the northeast and southeast edges of the proposed extension area.

Conversion work on the proposed injection well will consist essentially of the removal of existing production equipment and tubing with subsequent installation of cement-lined tubing and packers. Adequate tests of all casing strings will be made to insure that all surface waters and other formations will not be exposed to injection water in the event of tubing or packer leaks.

Mobil holds the water right to 1200 acre-feet per year of fresh water from the Ogallala zone. Three water supply wells were drilled with a total capacity of approximately 22,000 BPD. The produced water is being re-injected into the formation and will do the same in the expansion area. Average injection rate for the proposed injection wells is estimated to be 780 BPD per well.

A copy of this letter is being submitted to each operator offsetting the proposed injection wells.

Very truly yours,

I. B. Stitt, Jr.

GCWang/bje
Attachments

cc: Phillips Petroleum Company
Texaco, Inc.
Amerada Petroleum Corporation
NMOCC - Hobbs (1)
State Engineer (1)

Mobil Oil Corporation

P.O. BOX 633
MIDLAND, TEXAS 79701

March 1, 1967

Phillips Petroleum Company
Bartlesville, Oklahoma 74003

Texaco, Inc.
P. O. Box 3109
Midland, Texas

Amerada Petroleum Corporation
P. O. Box 312
Midland, Texas

PILOT WATERFLOOD EXPANSION
VACUUM (GRAYBURG-SAN ANDRES) FIELD
LEA COUNTY, NEW MEXICO

Gentlemen:

Mobil Oil Corporation has filed with the New Mexico Oil Conservation Commission an application for approval of the proposed waterflood expansion on our State Bridges lease, Vacuum (Grayburg-San Andres) Pool, Lea County, New Mexico.

As shown on the attached map, Mobil plans at present to convert ten wells to water injection. This is a part of our expansion program on the State Bridges lease. Additional wells will be converted for water injection service upon receiving cooperation from offset operators.

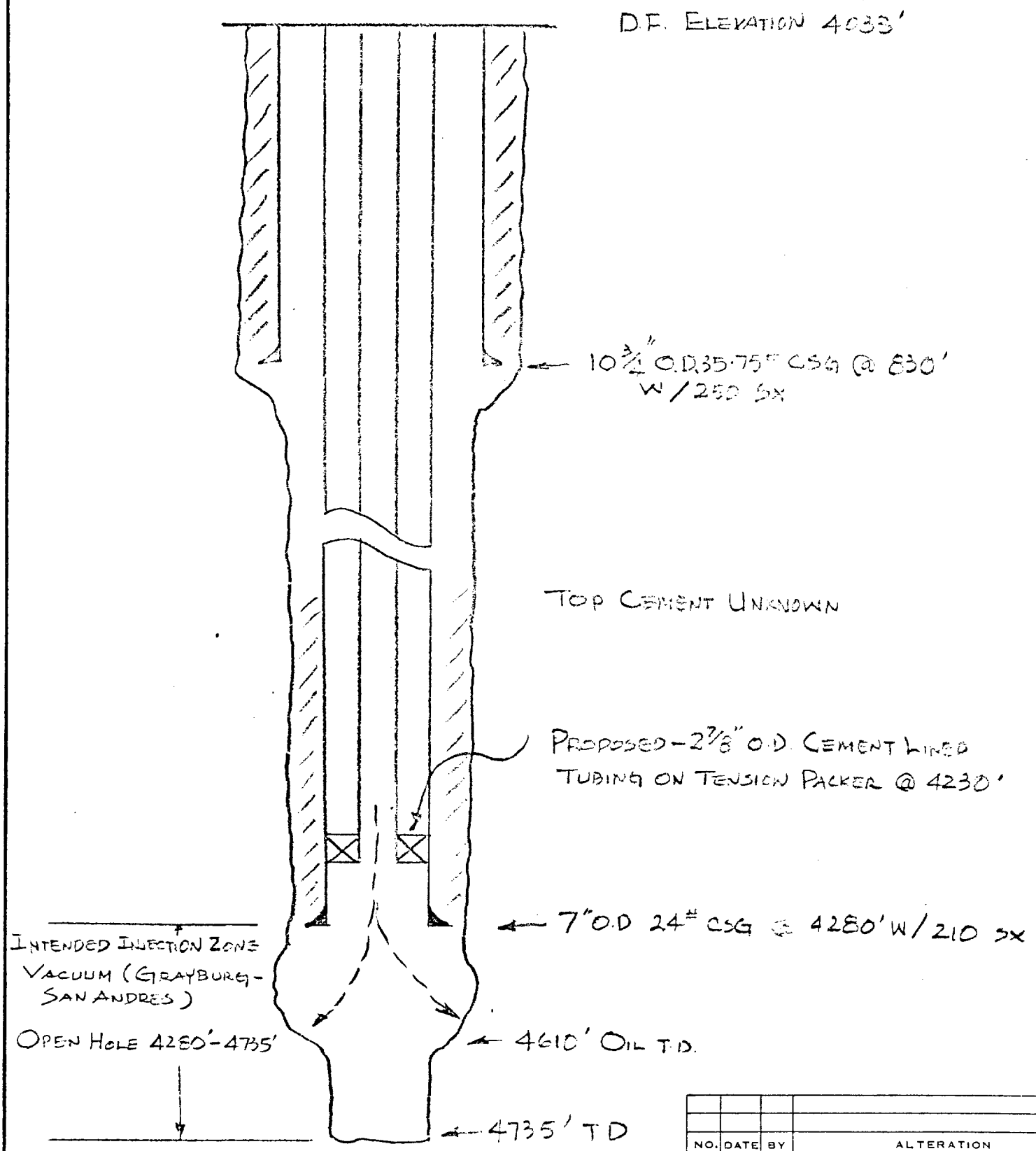
If you desire additional information regarding Mobil's application, please let us know.

Very truly yours,

for I. B. Stitt, Jr.

GCWang/bje
Attachment

cc: NMOCC - Santa Fe (2)
NMOCC - Hobbs (1)
State Engineer - Santa (1)



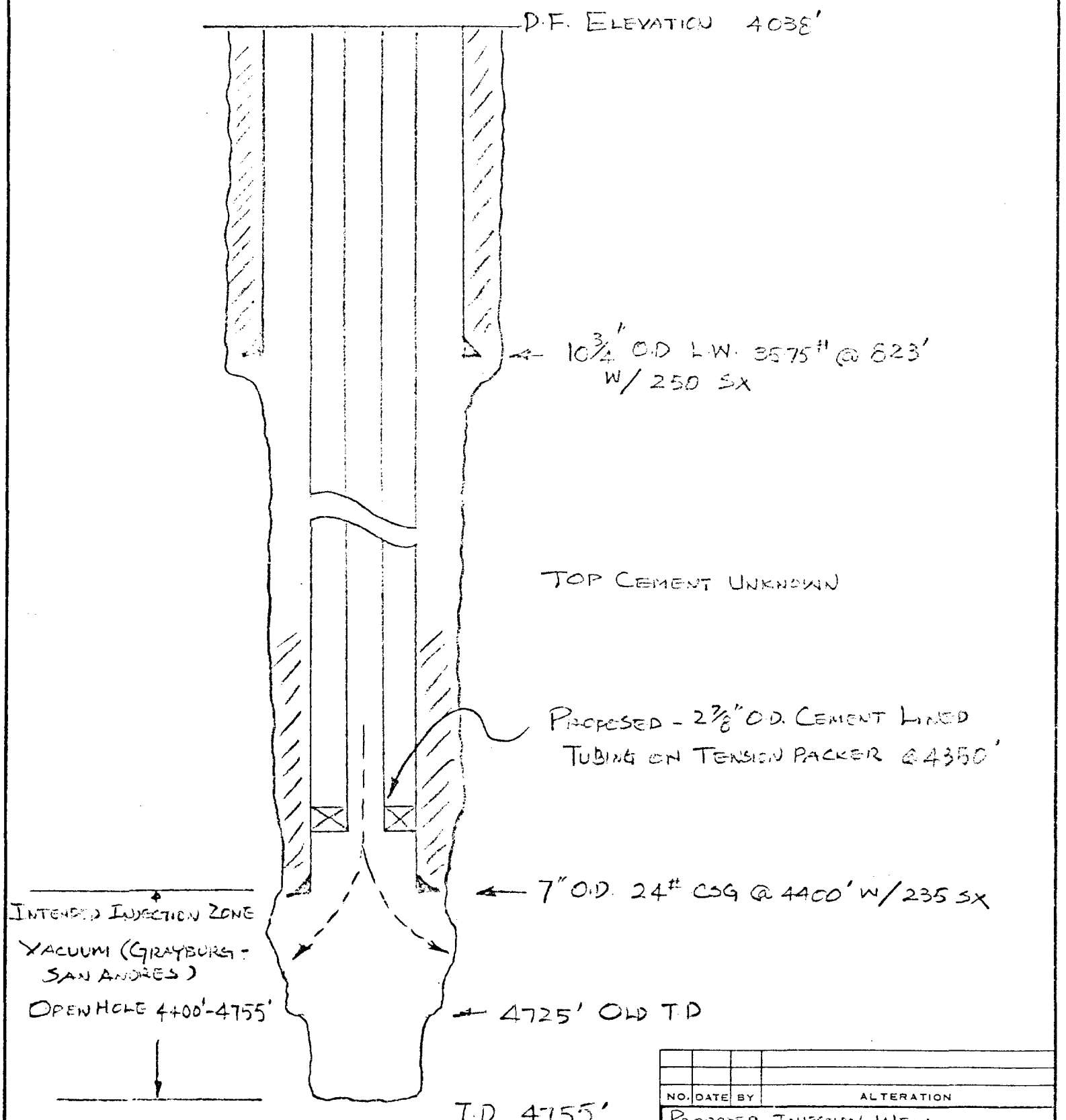
NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES-STATE NO. 43
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5454



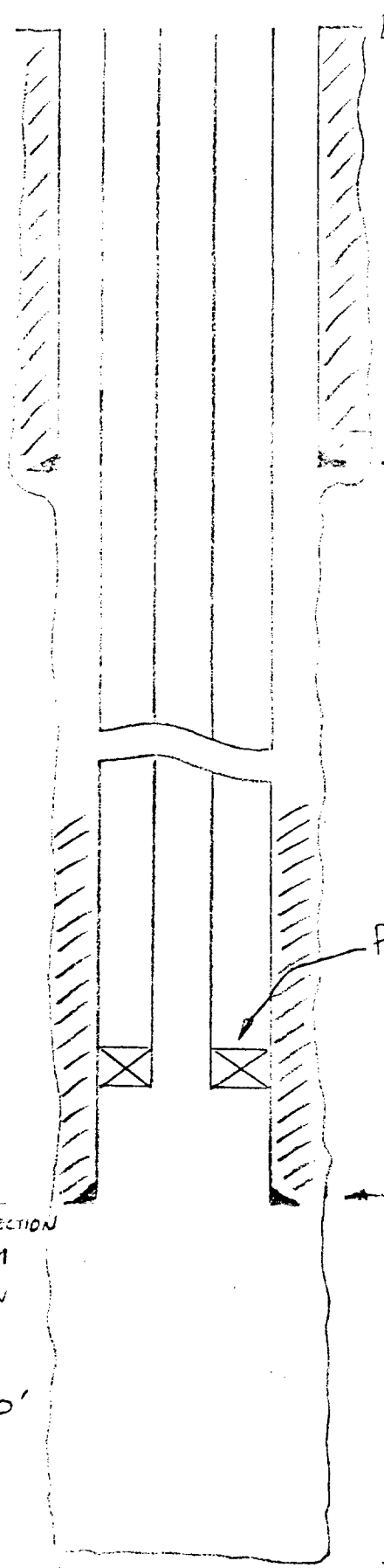
NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES-STATE NO. 40
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5454



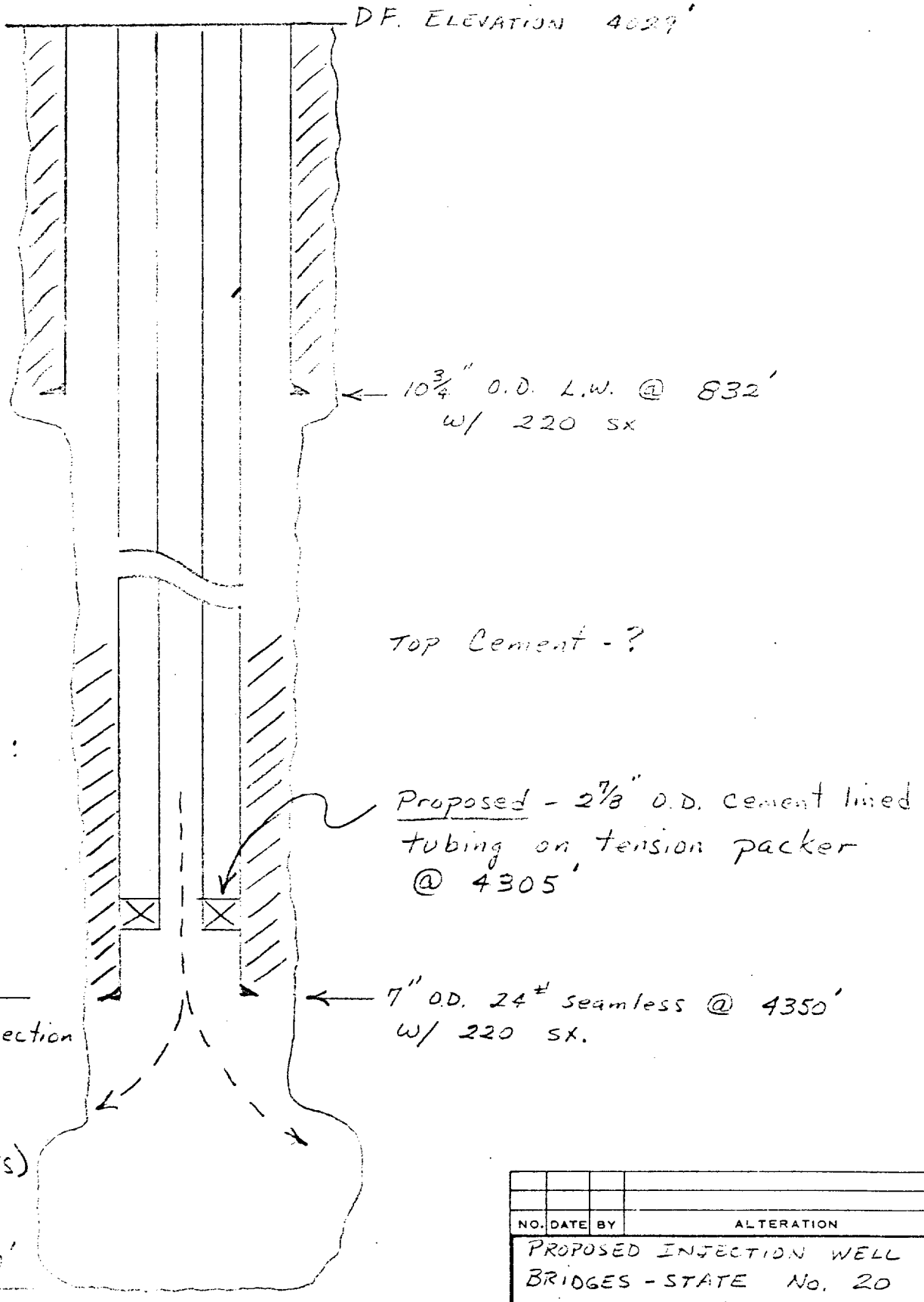
NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES - STATE No 21
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5154



NO.	DATE	BY	ALTERATION

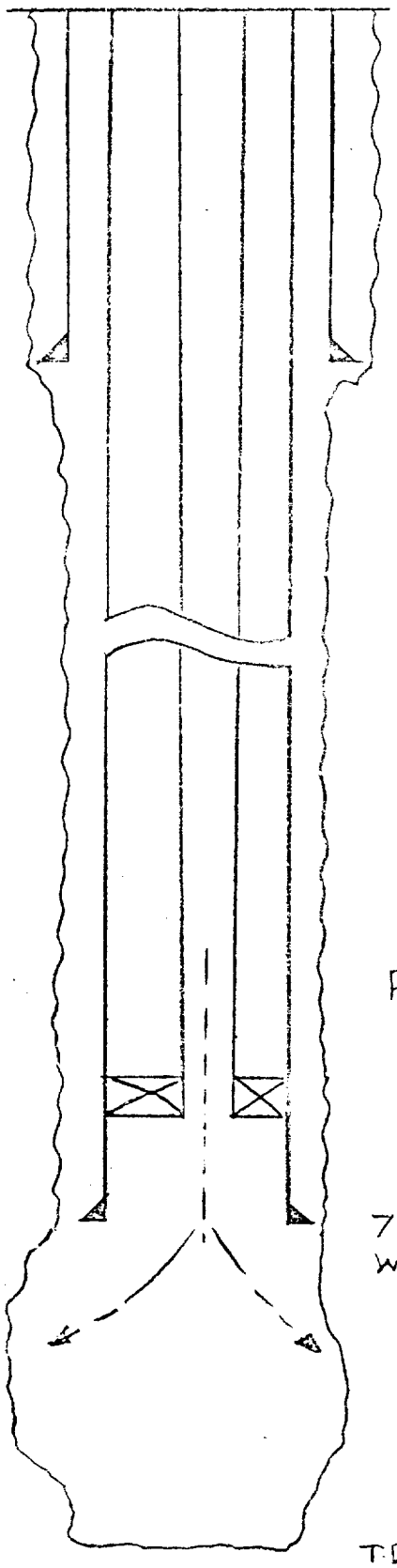
PROPOSED INJECTION WELL
BRIDGES - STATE No. 20
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5454

D.F. ELEVATION 4021'



10 3/4" OD 37.75# CSG @ 828'
W/ 220 Sx

PROPOSED - 2 3/8" O.D. CEMENT LINED TUBING
ON TENSION PACKER @ 4290'

7" OD 24# CSG @ 4344'
W/ 220 Sx

INTENDED INJ ZONE - VACUUM (GRAYBURG-SAN ANDRES) OPEN HOLE 4344'-4700'

T.D 4700'

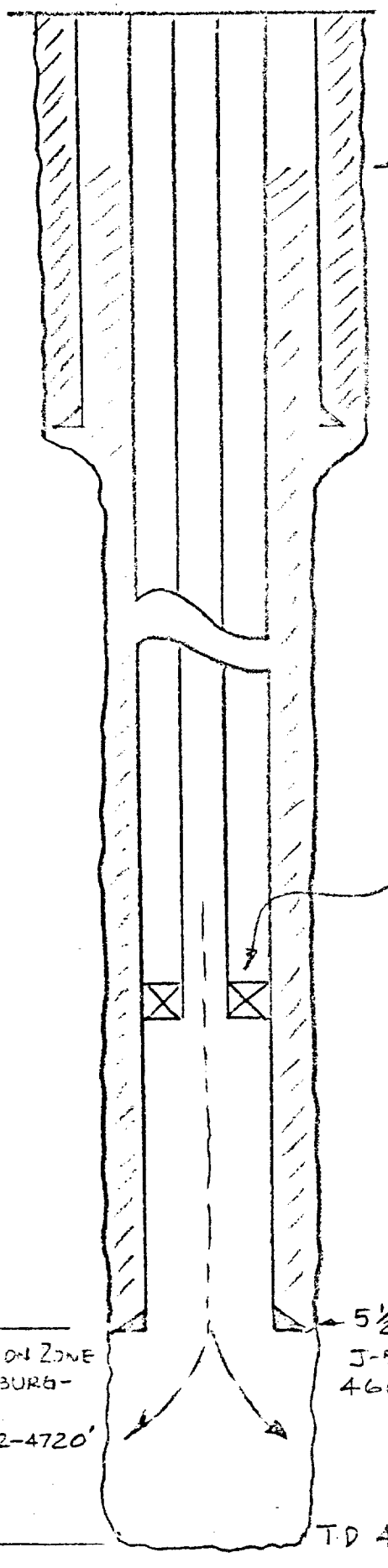
NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES-STATE NO. 24
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5454

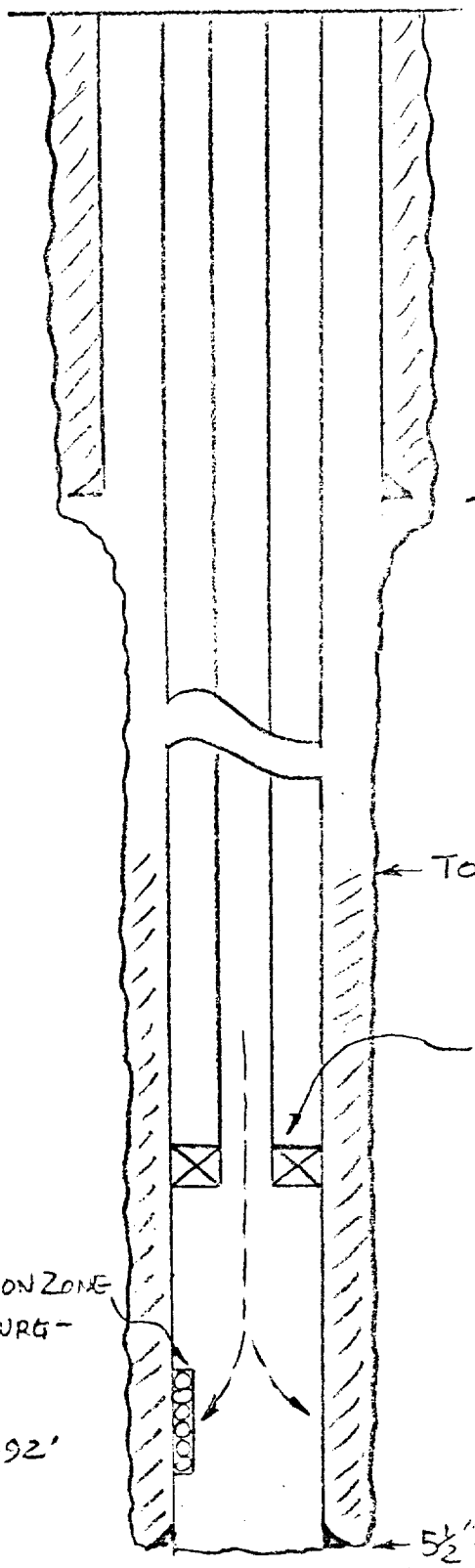


NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES-STATE NO. 83
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	



K.B. ELEVATION 4036'
G.L. ELEVATION 4024'

8 5/8" O.D. 24#, J-55 CSG @ 1642' W/ 600 SX.

TOP CEMENT 2000'

PROPOSED - 2 3/8" O.D. CEMENT LINED TUBING ON TENSION PACKER @ 4600'

INTENDED INJECTION ZONE
VACUUM (GRAYBURG-SAN ANDRES)

PERFORATIONS:
4664 - 4692'

5 1/2" O.D. 14# J-55 CSG @ 4750' W/1350 SX

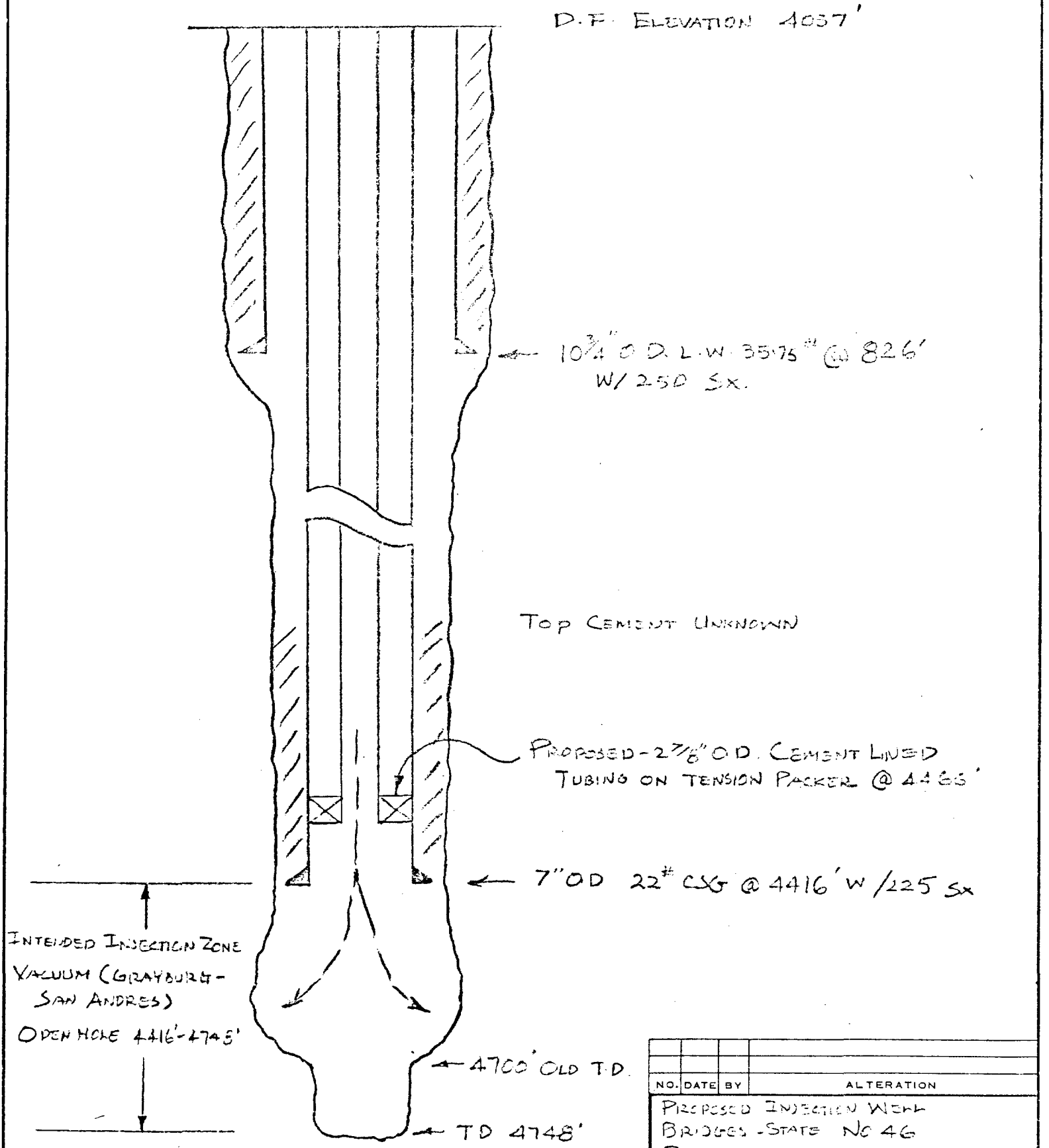
NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES-STATE NO. 76
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5454



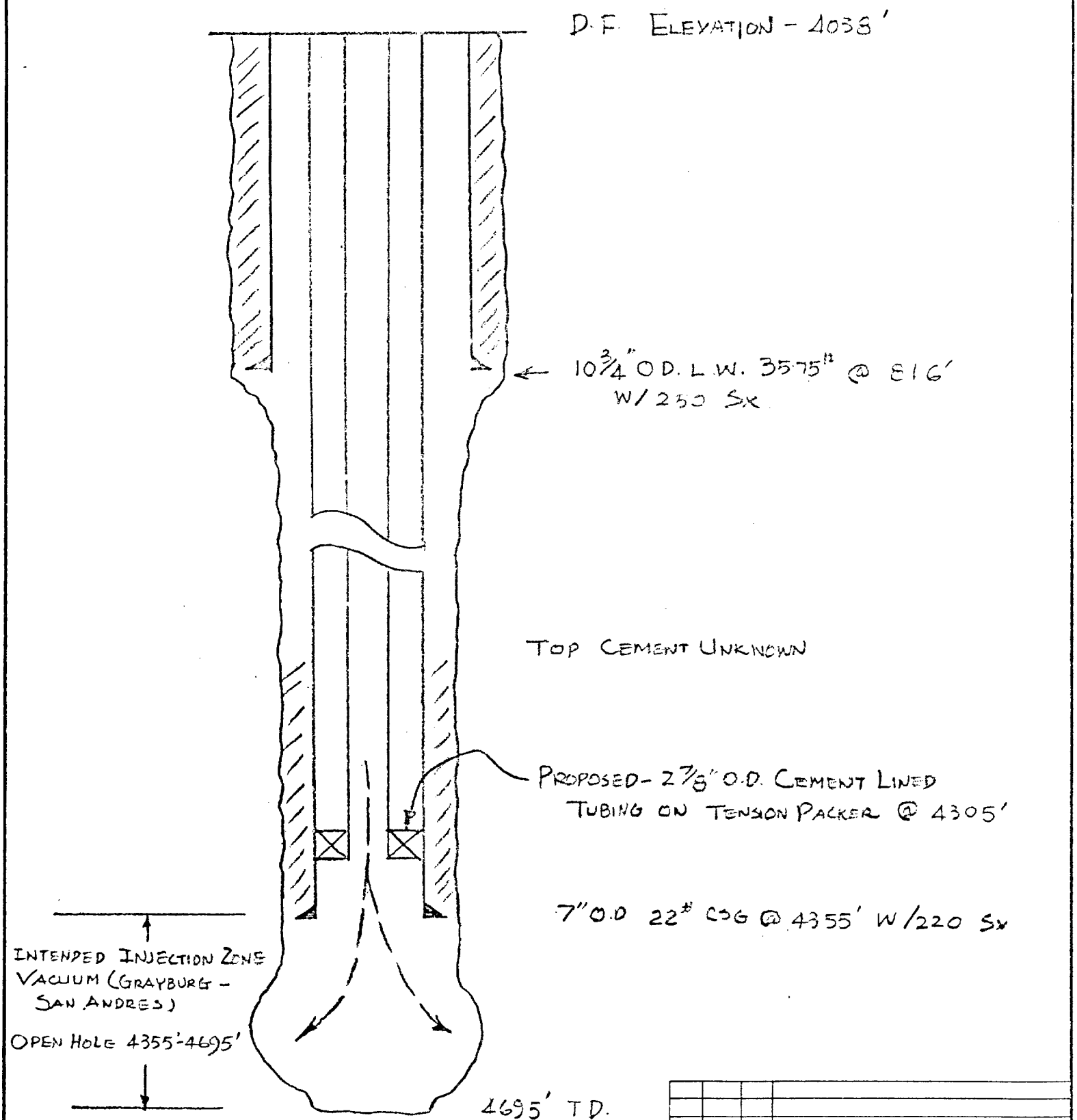
NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES-STATE NO 46
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5454



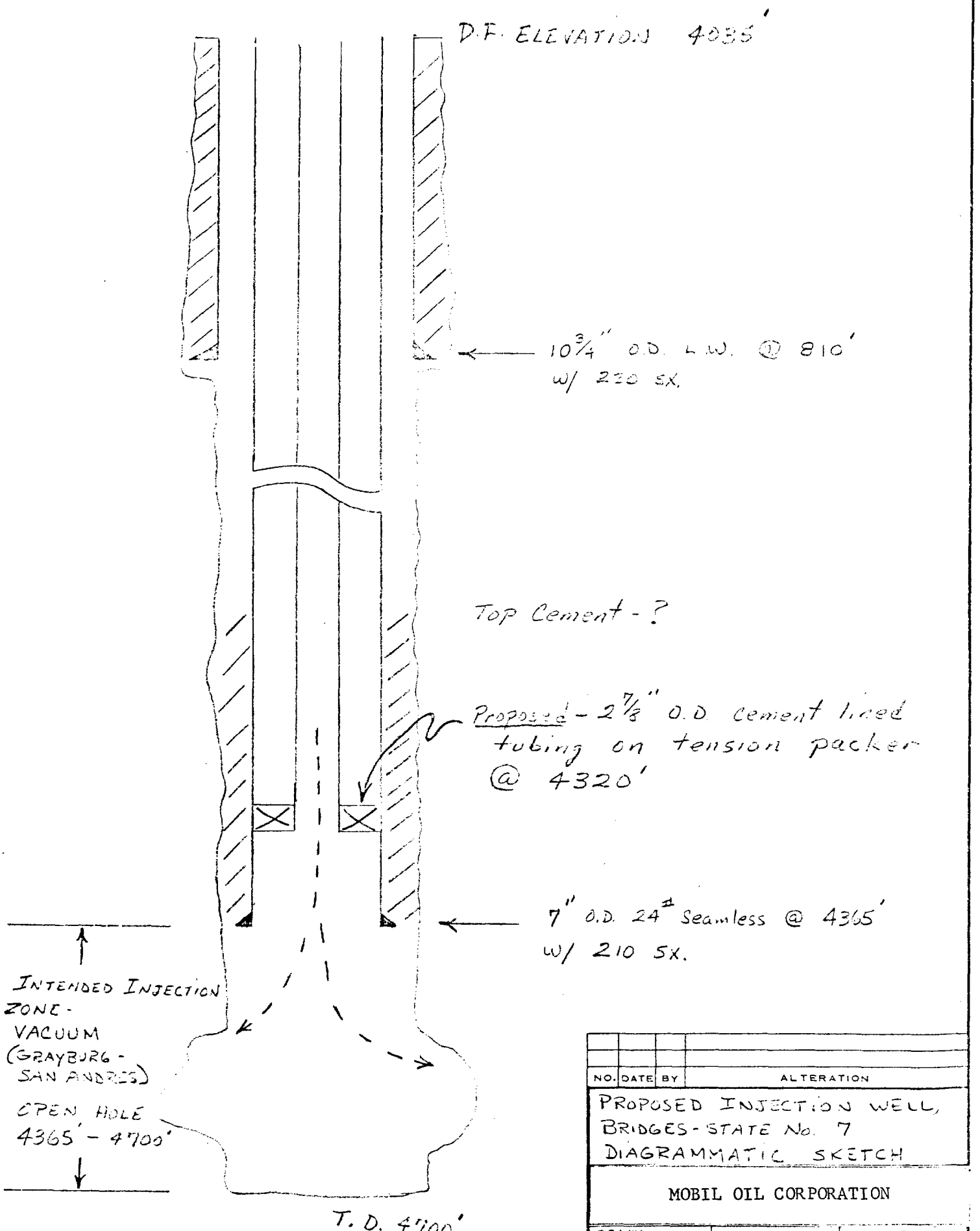
NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL
BRIDGES - STATE NO. 51
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

X-5454



NO.	DATE	BY	ALTERATION

PROPOSED INJECTION WELL,
BRIDGES-STATE No. 7
DIAGRAMMATIC SKETCH

MOBIL OIL CORPORATION

DRAWN		DWG. NO.
CHECKED	SCALE	A
	DATE	

NEW MEXICO OIL CONSERVATION COMMISSION

GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator: Mobil Oil Corporation | Pool: Vacuum (Grayburg - San Andres) Pool | County: Lea

Address: P.O. Box 633, Midland, Texas 79701 | TYPE OF TEST – (X): Scheduled ☐ Completion ☐ Special ☐ For administrative approval of flood expansion

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT/BBL
State - Bridges	7					5-5-64					24	2	37.4	4		
	"					7-28-66					"	21	"	33		
	10	West offset to #7				8-1-64					24	2	37.4	5		
	"					11-12-66					"	30	"	12		
	21					7-7-66					24	16	35.6	4		
	54	North offset to #21				10-10-63					24	3	37.4	10		
	"					1-5-65					"	29	"	34		
	55	West offset to #21				10-23-63					"	4	"	3		
	"					5-18-64					"	133	"	20		
	24					5-11-64					24	0	37.6	16		
	"					10-26-65					"	33	"	18		
	59	North offset to #24				12-1-63					"	84	37.4	6		
	"					4-13-65					"	82	"	19		
	40					10-30-63					24	5	37.4	5		
	"					8-18-65					"	25	"	4		
	415	offset E to #10				5-9-64					"	0	37.6	7		
	"					5-28-65					"	0	"	10		

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

(Signature)

(Title)

(Date)

NEW MEXICO OIL CONSERVATION COMMISSION

GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Address	TYPE OF TEST – (X)	Scheduled ☐ Completion ☐ Special ☑

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT/BBL.
State Bridges	76					11-13-63						4	37.4	4		
						5-5-65						32	"	5		
	70	South offset to #76				10-3-63						62	37.4	5		
						10-14-65						95	"	2		
	43					12-66						0	34.9	2		
	7	NW Diagonal offset to #43				5-5-64						2	37.4	4		
						7-28-66						21	"	32		
	51					12-66						0	35.3	2		
	45	South offset to #51				8-9-64						0	37.6	7		
						5-28-65						0	"	10		
						12--66						14	"	6		

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

(Signature)

(Title)

(Date)

NEW MEXICO OIL CONSERVATION COMMISSION

GAS–OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County

Address	TYPE OF TEST – (X)	Scheduled ☐	Completion ☐	Special ☑

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT./BBL.
State- Bridges	46					12- 66					24	1	37.6	3		
	45	South offset to #51				8-9-64					24	0	37.6	7		
						5-28-65					"	0	"	10		
						12- 66					"	14	"	6		
	20					12- 66					24	0	35.6	3		
	83					12- 66					24	0	35.7	2		

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

(Signature)

(Title)

(Date)

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

March 9, 1967

Mobil Oil Corporation
P. O. Box 633
Midland, Texas 79701

Attention: Mr. I. B. Stitt, Jr.

Gentlemen:

Your application dated March 1, 1967, requesting approval of expansion of your waterflood project in the Vacuum Pool was received March 8, 1967. The plat accompanying the application cannot be read with the aid of a magnifying glass; please provide this office with a legible plat of the area concerned in the application.

Very truly yours,

J. E. KAPTEINA
Engineer

JEK/og

COPY

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

March 9, 1967

Mobil Oil Corporation
P. O. Box 632
Midland, Texas 79701

Attention: Mr. [illegible], Jr.

Gentlemen:

Your application dated March 1, 1967, requesting approval of expansion of your waterflood project in the Vacuum ... was received March 6, 1967. The plat accompanying the application cannot be read with the aid of a magnifying glass; please provide this office with a legible plat of the area concerned in the application.

Very truly yours,

J. E. KAPTEINA
Engineer

JEK/og

Mobil Oil Corporation

P.O. BOX 633
MIDLAND, TEXAS 79701

March 15, 1967

Mr. J. E. Kapteina
State of New Mexico
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

PILOT WATERFLOOD EXPANSION
VACUUM (GRAYBURG-SAN ANDRES) FIELD
LEA COUNTY, NEW MEXICO

Dear Mr. Kapteina:

In response to your letter of March 9, requesting a legible plat of the subject area, we are enclosing two copies for your use.

Please accept our apology for any inconvenience this may have caused you.

Yours very truly,

Ira B. Stitt, Jr.
Division Operations Engineer

/nab

Encl. - 2

cc: NMOCC - Hobbs w/attach.
State Engineer - Santa Fe w/attach.

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

'67 MAR 28 PM 1 28

S. E. REYNOLDS
STATE ENGINEER

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

March 27, 1967

WFX
-57

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Mobil Oil Corporation for administrative approval to expand their Vacuum (Grayburg-San Andres) waterflood in Sections 11, 12, 13, 14, 23 and 24 of Township 17 South, Range 34 East.

The information indicates that all wells are to be equipped with tubing and packers with the packers set below the top of cement surrounding the production casing. No dual injectors are indicated. If the wells are completed, equipped and operated as indicated, it would appear that contamination would not result on the granting of the application.

FEI/ma
cc-Mobil Oil Corp.
F. H. Hennighausen

Yours truly,

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Div.

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

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

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

Reproduced By

West Texas Electrical Log Service

1908 Commerce Street

Dallas 1, Texas

REFERENCE Nº A 1153 -E

LANE RADIOACTIVITY LOG WELLS

COMPANY

INTERLIFE

Location of Well
9 PRINTS
10-N-50
Roswell

FILE NO.

COMPANY: MAGNOLIA PET. CO.
WELL: STATE BRIDGES NO. 40
FIELD: VACUUM
COUNTY: LEA
LOCATION:
STATE: N.M.

COMPANY: MAGNOLIA PET. CO.
WELL: STATE BRIDGES NO. 40
FIELD: VACUUM
COUNTY: LEA
STATE: N.M.
LOCATION: *

LOG MEAS. FROM TOP OLD ROTARY ELEV. *

DRLG. MEAS. FROM TOP OLD ROTARY ELEV. *

PERM. DATUM G.L. IS 10' ABOVE G. L. ELEV. *

TYPE OF LOG	G/R	N/L		
RUN NO.	1	1		
DATE	10-9-50	10-9-50		
TOTAL DEPTH (DRILLER) WIRE LINE	4750'	4750'		
EFFECTIVE DEPTH (DRILLER)	4750'	4750'		
TOP OF LOGGED INTERVAL	1500'	1500'		
BOTTOM OF LOGGED INTERVAL	4731'	4731'		
TYPE OF FLUID IN HOLE	OIL	OIL		
FLUID LEVEL	1890'	1890'		
MAXIMUM RECORDED TEMP.				
NEUTRON SOURCE STRENGTH & TYPE		600M		
SOURCE SPACING — IN.		8.25		
LENGTH OF MEASURING DEVICE — IN.	36	9		
O.D. OF INSTRUMENT — IN.	3 5/8	3 5/8		
TIME CONSTANT — SECONDS	M	M		
LOGGING SPEED FT. MIN.	26	26		
STATISTICAL VARIATION — IN.				
SENSITIVITY REFERENCE	274	275		
RECORDED BY	HUNTON	HUNTON		
WITNESSED BY	KIMBELL	KIMBELL		

CASING RECORD

RUN NO.	SIZE—IN.	WT.—LB.	INTERVAL
1	7		SURFACE TO 4384'
			TO
			TO
			TO
			TO

OPEN (BORE) HOLE RECORD

BIT SIZE—IN.	INTERVAL
11	SURF. TO 1100'
8 3/4	1100' TO 4384'
6 1/4	4384' TO T.D.
	TO
	TO

REMARKS OR OTHER DATA

* ELEVATION AND LOCATION UNAVAILABLE.

Reproduced By

West Texas Electrical Log Service

Dallas, Texas

REFERENCE **Nº A 4125 -E**

McCULLOUGH TOOL COMPANY

RADIATION LOG

86285

Location of Well: 1980' FNL - 660' FSL - SEC. 11 - 17S - 37E

ELEV. K. B. 4048' D. L. 4036.3'

COMPANY MAGNOLIA PETROLEUM COMPANY

WELL STATE BRIDGES #76

FIELD VACUUM

COUNTY LEA STATE NEW MEXICO

LOCATION

Log Meas. From 1' ABOVE ROTARY TABLE Elev.

Drlg. Meas. From SAME Elev.

Perm. Datum 11.7' ABOVE GROUND LEVEL Elev.

LOCATION — COUNTY LEA STATE N.M. — FIELD VACUUM — WELL STATE BRIDGES #76 — COMPANY MAGNOLIA PETROLEUM COMPANY

Rec. Trk. No. 955 Trk. No. Trk. Oper. JENKINS Log Ticket No. A-3889

Date 8-18-55 Maximum Recorded Temp.

Total Depth (Driller) 4750' Effective Depth (McCullough) 4742'

Type of Fluid in Hole OIL Fluid Level FULL

O.D. of Instrument 3.5" Length of Device—Overall 11'

Neutron Source # A-109 Spacing 19.5"-2.5 Setting

Recorded By MASSEY Witnessed By MR. BERGER

Type of Log	GAMMA RAY	GAMMA RAY	NEUTRON	NEUTRON
Run No.	ONE - 5"-2"		ONE - 5"-2"	
Top of Logged Interval	3000'-5" 2500'-2"		3000'-5" 2500'-2"	
Bottom of Logged Interval	4735'		4740'	
Time Constant	35-180-250CTS. (0-3)		35-208-500CTS. (0-3)	
Logging Speed Ft./Min.	20-5" 60-2"		20-5" 60-2"	
Statistical Variation				
Sensitivity-Micro-Roentgens Per. Hr. Per. Inch	2.0			

CASING RECORD (Customer)

Run No.	Size—In.	Wt.—Lb.	Interval	Bit Size	Interval
1	8 5/8		0 to 1642		to
2	5 1/2		0 to 4750	7 7/8	to
3			to		to
4			to		to
5			to		to

OPEN (BORE) HOLE RECORD

REMARKS OR OTHER DATA

GAMMA RAY → RADIATION INCREASE

NEUTRON → RADIATION INCREASE

Reproduced By

West Texas Electrical Log Service

Dallas, Texas

REFERENCE Nº A 4125 -E

McCULLOUGH
TOOL COMPANY
RADIATION LOG

#6285

Location of Well
1980' FEL - 660'
FSL - SEC. 11 -
17S - 37E

ELEV.
K. B. 4048'
D. F. 4036.3'

COMPANY MAGNOLIA PETROLEUM COMPANY
WELL STATE BRIDGES #76
FIELD VACUUM
COUNTY LEA STATE NEW MEXICO
LOCATION

COMPANY MAGNOLIA PETROLEUM COMPANY
WELL STATE BRIDGES #76
FIELD VACUUM
COUNTY LEA STATE NEW MEXICO
LOCATION

Log Meas. From 1' ABOVE ROTARY TABLE Elev.
Drlg. Meas. From SAME Elev.
Perm. Datum 11.7' ABOVE GROUND LEVEL Elev.

Rec. Tkt. No. 955 Tkt. No. Tri. Oper. JINKINS Log Ticket No. A-3689
Date 6-16-55 Maximum Recorded Temp.
Total Depth (Driller) 4750' Effective Depth (McCullough) 4762'
Type of Fluid in Hole OIL Fluid Level FULL
O.D. of Instrument 3.5" Length of Sonde—Overall 11'
Neutron Source # H-189 Spacing 18.5"-2.5" Setting
Recorded By MASSEY Witnessed By MR. [illegible]

Type of Log	GAMMA RAY	GAMMA RAY	NEUTRON	NEUTRON
Run No.	7BS - 5"-2"		ONE - 5"-2"	
Top of Logged Interval	3000'-5" 2500'-2"		3000'-5" 2500'-2"	
Bottom of Logged Interval	4735'		4760'	
Time Constant	3B-180-250CTS. (0-3)		3S-20B-50BCTS. (0-3)	
Logging Speed Ft./Min.	20-5" 60-2"		20-5" 60-2"	
Statistical Variation				
Sensitivity-Micro-Roentgens Per Hr. Per Inch	2.0			

CASING RECORD (Customer)

Size No	Size—In.	Wt.—Lb.	Interval
1	8 5/8		0 to 1662
2	5 1/2		0 to 4750
3			to
4			to
5			to

OPEN (BORE) HOLE RECORD

Bit Size	Interval
	to
3 7/8	to
	to
	to
	to

REMARKS OR OTHER DATA

GAMMA RAY → RADIATION INCREASE

NEUTRON → RADIATION INCREASE

Reproduced By

West Texas Electrical Log Service

Dallas, Texas

REFERENCE Nº W 5996 -D

SCHLUMBERGER WELL SURVEYING CORPORATION

HOUSTON, TEXAS

LATEROLOG

COUNTY LEA
FIELD or LOCATION VACUUM
WELL State Bridges # 83
COMPANY Magnolia Petroleum Company

COMPANY MAGNOLIA PETROLEUM COMPANY
WELL STATE BRIDGES # 83
FIELD VACUUM
LOCATION SEC. 12-17S-34E
COUNTY LEA
STATE NEW MEXICO

Location of Well
660' f SL
1980' f EL
Sec. 12-17S-34E

LL-GRL
(ML)

Elevation. D.F. 4032
K.B.
or G.L.

FILING No.

RUN No.	1		
Date	12-22-53		
First Reading	4650		
Last Reading	50		
Feet Measured	4610		
Cas. Schlum.	1762		
Cas. Driller	1762		
Depth Reached	4650		
Bottom Driller	4650		
Depth Datum	KB 10.6' Abv. GL		
Mud Wat.	Salt-Gel		
" Density	10.0		
" Viscosity	42		
" Resist.	.68 @ 65°F	@ °F	
" Res. BHT	.51 @ 109°F	@ °F	
" pH	8 @ °F	@ °F	
" Wtr. Loss	8.6 cc 30 min.	cc 30 min.	
Max. Temp. °F	109		
Bit Size	7 7/8"		
	11" Laterolog-7		
Csg. Rec. Time	4 Hrs.		
Truck No.	1702-Hobbs		
Recorded By	Mahaney		
Witnessed			

REMARKS

REFERENCE Nº A 4600 -E

RADIOACTIVITY LOG
WELEX JET SERVICES, Inc.

LICENSED BY: WELL SURVEYS, INC. FILE NO.

Location of Well

COMPANY	MAGNOLIA PETROLEUM COMPANY
WELL	STATE BRIDGES NO. 63
FIELD	VACUUM
COUNTY	LEA STATE NEW MEXICO
LOCATION	660' FNL & 1980' FEL OF SEC. 12, T - 17 - S R - 34 - E.

COMPANY MAGNOLIA PETROLEUM COMPANY
WELL STATE BRIDGES NO. 63
FIELD VACUUM
COUNTY LEA STATE NEW MEXICO
LOCATION 660' FNL & 1980' FEL OF SEC. 12 - T - 17 - S R - 34 - E

LOG MEAS. FROM	1' ABOVE ROTARY TABLE	ELEV. 4039'
DRLG. MEAS. FROM	1' ABOVE ROTARY TABLE	ELEV. 4033'
PERM. DATUM	DERRICK FLOOR	ELEV. 4032'

TYPE OF LOG	GAMMA RAY	NEUTRON		
RUN NO.	- 1 -	- 1 -		
DATE	12/28/55	12/28/55		
JOB NO.	[illegible] &	13[illegible]-495		
TOTAL DEPTH (DRILLER)	4720	4720		
EFFECTIVE DEPTH (DRILLER)	4720	4720		
TOTAL DEPTH (R/A LOG)	4713	4723		
TOP OF LOGGED INTERVAL	4250	4250		
BOTTOM OF LOGGED INTERVAL	4712	4721		
TYPE OF FLUID IN HOLE	OIL	OIL		
FLUID LEVEL	FULL	FULL		
MAXIMUM RECORDED TEMPERATURE				
NEUTRON SOURCE STRENGTH & TYPE		600 [illegible]		
SOURCE SPACING—IN.		1.25		
LENGTH OF MEASURING DEVICE—IN.	30	9.5		
O.D. OF INSTRUMENT—IN.	3 5/8	3 5/8		
TIME CONSTANT—SECONDS	2.5	2.5		
LOGGING SPEED FT./MIN. 2" -	20	20		
5" -	20	20		
STATISTICAL VARIATION—IN.	0.3	0.4		
SENSITIVITY REFERENCE	STD.	275		
RECORDED BY	FULLER &	HOWARD		
WITNESSED BY	MR. [illegible]			

CASING RECORD

SIZE—INS.	WT.—LB.	INTERVAL FROM WELL RECORD	INTERVAL FROM R/A LOG
8 5/8		0 To 1730'	To
5 1/2		0 To 4662'	0 To 4661'
		To	To
		To	To

BORE HOLE

BIT SIZE INS.	INTERVAL FROM WELL RECORD	INTERVAL FROM R/A LOG
11	To	To
7 7/8	To	To
4 3/4 4662'	To 4720'	4661' To 4723'
	To	To

REMARKS OR OTHER DATA

"[illegible] NEUTRON CHAMBER USED - SENSITIVITY SHOWN IS BOTTLE SENSITIVITY"

Reproduced By

West Texas Electrical Log Service

Dallas, Texas

REFERENCE Nº W 5685 -D

Halliburton

OIL WELL CEMENTING CO.

ELECTRIC WELL LOG

COMPANY MAGNOLIA PETROLEUM

COMPANY FILE

WELL STATE BRIDGES #76

FIELD Vacuum

COUNTY Lea STATE N. Mexico

SEC. 11 TWP. 17-S RGE. 37-E

SURVEY

Location: 1980' from South, 660' from East, Sec 11, Twp 17-S, Rge 37-E

ES-GR (Con Col Guard)

Elevations: D.F. 4047, K.B. 4048, Gr. 4036

Log Measured From Top drive bushing Elevation 4048'

Drilling Measured From Top drive bushing Elevation 4048'

Permanent Datum Ground level Elevation 4036'

Run No.	ONE			
Date	8-15-55			
Footage Logged	3105'			
Total Depth, Dr. Log	4747'			
Total Depth, Driller	4750'			
Total Depth, Reached	4750'			
Csg. Shoe, Dr. Log	1642'			
Csg. Shoe, Driller	1642'			
Csg. Size	8 5/8"			
Bit Size	7 7/8			
Mud-Kind	Water Base			
Treatment	Gel			
	Salt			
	Starch			
Weight	10.6			
Viscosity	35			
ph	6 @ °F	@ °F	@ °F	@ °F
Loss ml/30 min	16 @ °F	@ °F	@ °F	@ °F
Res Ohms m²/m	.043 @ 95 °F	@ °F	@ °F	@ °F
Mud Res @ M.H.T.	.038 @ 115 °F	@ °F	@ °F	@ °F
Max. Temp.	115 °F	°F	°F	°F
Source Mud Sample	Circulated			
Electrode Spacings 2 Z	10"			
Electrode Spacings M Z	17 1/2"			
Lateralog Curve Spacings	32"			
Electrode Spacings 4 Z				
Truck No.	4567			
Recorded by	J.D. Fulcher			
Witnessed by	M. Llewellin			

REMARKS: THIS LOG MADE WITH E.M. EQUIPMENT

ES TOOL # 1013 GR TOOL # 1015

RECORDED SPOTS ON LEFT INDICATE GR LOGGING SPEED

CASING COLLARS RECORDED 10' DOWN FROM TRUE DEPTH

POTENTIAL MILLIVOLTS		RESISTIVITY OHMS M²/M
− → 15 ← +		0 2Z 10" 15
GAMMA RAY		0 150
Counts / Sec. 90		