

CASE 3459: Application of PENNZOIL
CO. for a waterflood project,
Lea County, New Mexico.

CASE No.

3439

Application,

TRANSCRIPTS,

SMALL Exhibits

ETC.

OIL CONSERVATION COMMISSION

P. O. BOX 2088
SANTA FE, NEW MEXICO

October 7, 1966

C
O
P
Y
Mr. James M. Durrett, Jr.
Rhodes, McCallister & Durrett
Attorneys at Law
619 Simms Building
Albuquerque, New Mexico

Dear Sir:

Reference is made to Commission Order No. R-3129 recently entered in Case No. 3459, approving the Pennzoil Maljamar Waterflood Project.

Injection is to be through the eight authorized water injection wells, which shall be equipped with tubing and packers.

According to our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which the Phillips State portion of the project will be eligible to receive under the provisions of Rule 701-E-3 is 546 barrels per day when the Southeast New Mexico waterflood allowable factor is 42; the maximum which the Phillips Federal portion of the project will be eligible to receive is 126 barrels per day.

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.

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 701, it behooves him to promptly notify both of the aforementioned commission offices by letter of

OIL CONSERVATION COMMISSION

P. O. BOX 2088

-2-

SANTA FE, NEW MEXICO

Mr. James M. Durrett, Jr.
Rhodes, McCallister & Durrett
Attorneys at Law
Albuquerque, New Mexico

October 7, 1966

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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. PORTER, Jr.
Secretary-Director

ALP/DSN/ir

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

Oil Conservation Commission
Post Office Box 1980
Hobbs, New Mexico



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

September 27, 1966

S. E. REYNOLDS
STATE ENGINEER

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

Case 3459

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

Dear Mr. Porter:

Reference is made to the application of Pennzoil Company dated August 23, 1966 which seeks Commission approval for a water-flood project in Sections 28 and 33, T. 17 S., R. 33 E., Lea County, New Mexico.

This office offers no objection to the granting of the application provided the injection wells are completed in the manner indicated on the diagrammatic sketches which accompanied the application.

I should bring to your attention, for your consideration, the fact that the Phillips Federal Well #3 in the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Sec. 33 is described in the application as being 660' FWL of said section and is shown on the plat dated September 13, 1966 as being 660' FEL of said section. I have discussed this point with Mr. Huddleston and he states that he will take care of this correction.

FEI/ma
cc-Mr. J. M. Durrett, Jr.
K. R. Huddleston
Mrs. Marian Rhea
F. H. Hennighausen

Yours truly,

S. E. Reynolds
State Engineer

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

RHODES, McCALLISTER & DURRETT
ATTORNEYS AT LAW

JERRY D. RHODES
ORVILLE C. McCALLISTER, JR.
J. M. DURRETT, JR.

619 SIMMS BUILDING
ALBUQUERQUE, NEW MEXICO 87101
TELEPHONE 243-9746

August 23, 1966

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

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

Re: Application of Pennzoil Company for a water flood project,
Lea County, New Mexico

Gentlemen:

I am enclosing an original and two copies of the above application. Will you please docket this application for the second examiner hearing in September. A copy of the application has been forwarded to the State Engineer, the State Land Office and your Hobbs District Office for informational purposes.

Very truly yours,

Rhodes, McCallister & Durrett

By J. M. Durrett, Jr.
J. M. Durrett, Jr.

JMD/jk

Encls.

cc: State Engineer
State Land Office
Oil Conservation Commission - Hobbs

DOCKET MAILED

Date 9-15-66

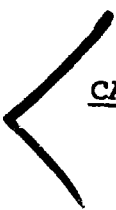
- CASE 3464: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through 13 wells located in Sections 3, 4, 9, and 10, Township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

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 3459

Heard 9-28-66

Rec. 9-28-66,

1. Approve Pengzoit Co's request for an 8 ~~well~~ injection well waterflood on their Phillips 1st & Phillips 2nd leases.
 2. The 8 injection wells are properly described on the application (#3 well is corrected).
 3. Injection shall be thru tubing and under a packer as shown on exhibit B thru F.
 4. Administrative approval for additional inj. wells.
 5. Approved by 201.
- Thistle D.

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

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

October 4, 1966

Mr. James M. Durrett, Jr.
Rhodes, McCallister & Durrett
Attorneys at Law
619 Simms Building
Albuquerque, New Mexico

Re: Case No. 3459
Order No. R-3129
Applicant:
PENNZOIL 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.
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

1003 29 AM 7

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

Application of

PENNZOIL COMPANY

for a Water Flood Project,
Lea County, New Mexico

Case No. 3459

A P P L I C A T I O N

COMES NOW the applicant, Pennzoil Company, by and
through its attorneys, Rhodes, McCallister & Durrett, and respect-
fully states:

I.

The applicant is the operator of the following described
leases in Township 17 South, Range 33 East, NMPM, Lea County,
New Mexico:

- (a) Phillips State Lease comprising the South Half,
Northwest Quarter, and Southwest Quarter Northeast
Quarter of Section 28.
- (b) Phillips Federal Lease comprising the North Half
Northeast Quarter and Southeast Quarter Northeast
Quarter of Section 33.

II.

The applicant seeks authority to institute a water flood
project in the Maljamar pool by the injection of water into the Grayburg-
San Andres formation through the following described wells:

Section 33

- (a) Phillips Federal Well No. 2Y located 330 feet from
the North line and 650 feet from the East line.
- (b) Phillips Federal Well No. 3 located 1980 feet from
the North line and 660 feet from the ~~West~~ line.

Section 28

- (a) Phillips State Well No. 2 located 1980 feet from the South line and 660 feet from the West line.
- (b) Phillips State Well No. 4 located 330 feet from the North line and 330 feet from the West line.
- (c) Phillips State Well No. 6 located 1980 feet from the West line and 2310 feet from the North line.
- (d) Phillips State Well No. 8 located 660 feet from the South line and 1980 feet from the West line.
- (e) Phillips State Well No. 10 located 1650 feet from the East line and 1650 feet from the South line.
- (f) Phillips State Well No. 13 located 660 feet from the South line and 660 feet from the East line.

III.

The applicant proposes to inject between 300 and 400 barrels of water per day into each injection well through plastic lined tubing installed in a packer with injection pressure of approximately 2500 pounds.

IV.

The applicant proposes to utilize Ogallala water for injection and to purchase said water from Double Eagle Water Company.

V.

A plat showing the location of the proposed injection wells, the location of all other wells within a radius of 2 miles, the formation from which said wells are producing or have produced, and lessees within a 2 mile radius is attached hereto as Exhibit "A" and incorporated herein by reference.

VI.

A diagrammatic sketch and log of each injection well is attached hereto as Exhibits "B" through "I" and incorporated herein by reference.

VII.

The wells within the proposed project area have reached an advanced state of depletion and should be classified as "stripper wells."

VIII.

The proposed water flood project should be governed by Rule 701E of the Commission Rules and Regulations.

IX.

The proposed water flood project will result in greater ultimate recovery of oil, prevent waste, and protect correlative rights.

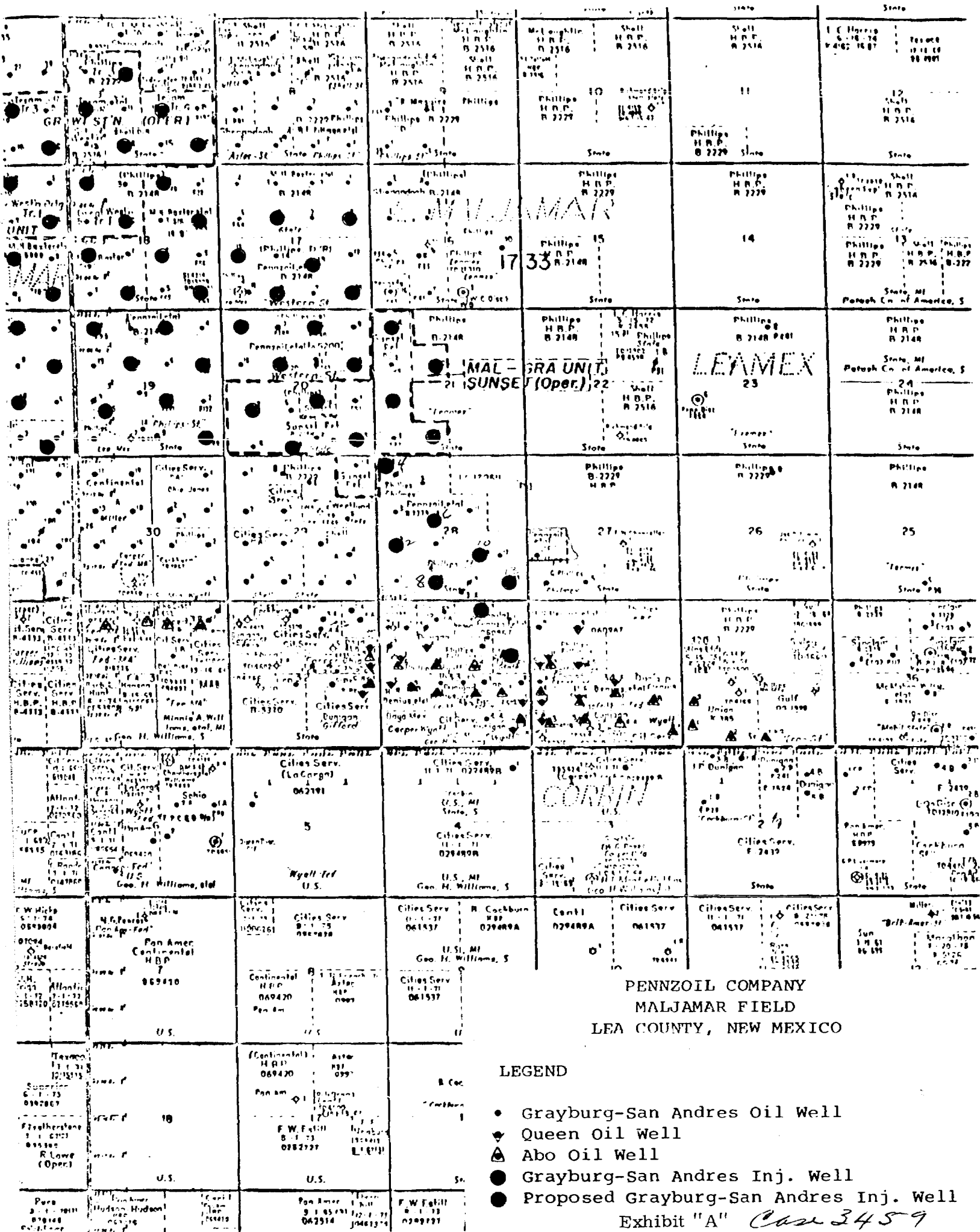
WHEREFORE, the applicant requests the Commission to enter its order approving the proposed water flood project.

Rhodes, McCallister & Durrett

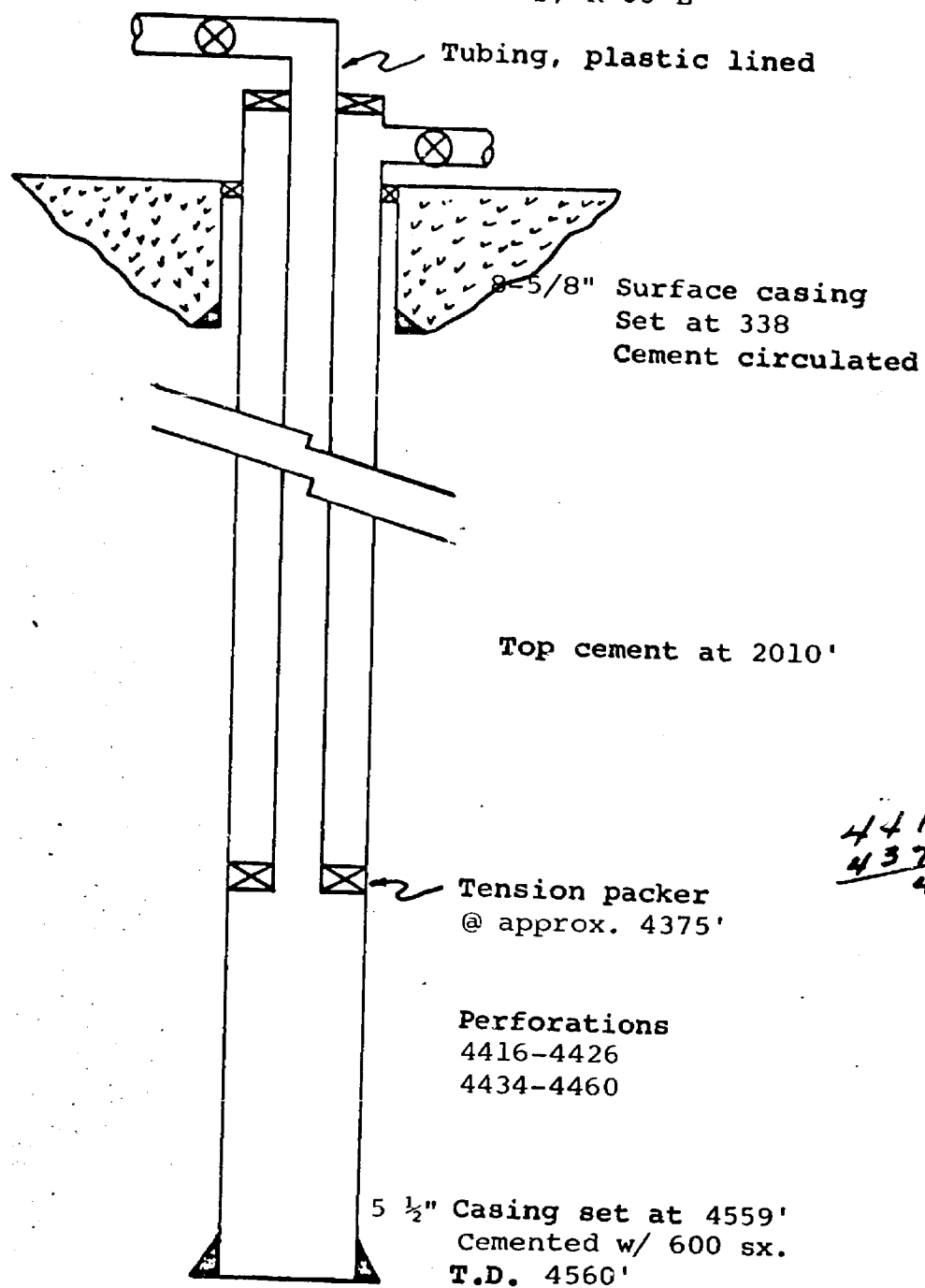
By JM Durrett

I certify that a copy of the foregoing application complete with all attachments has been mailed to the State Engineer, Capital Building, Santa Fe, New Mexico, this 26th day of August, 1966.

By JM Durrett

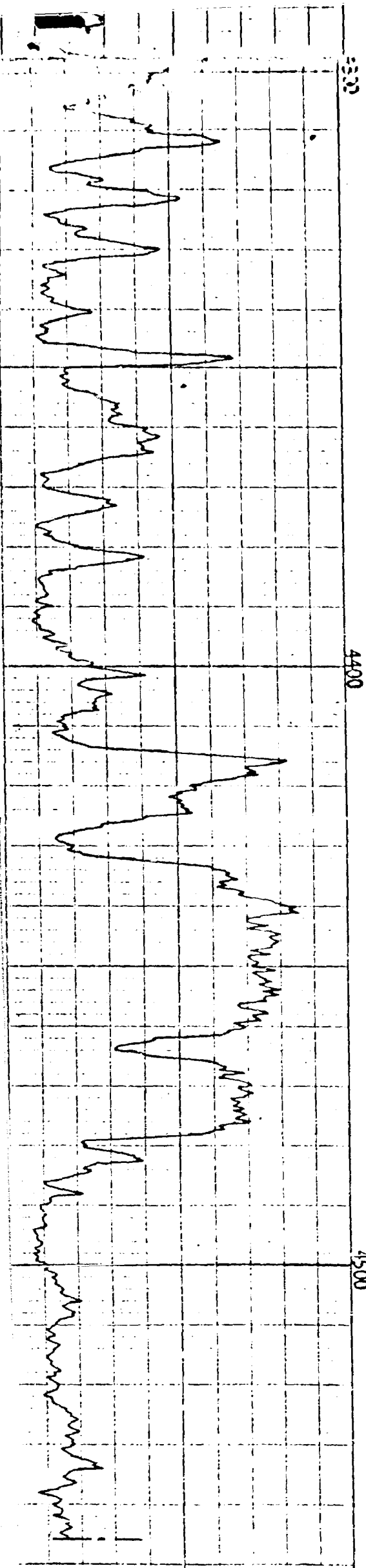


PENNZOIL COMPANY
"WATER INJECTION WELL SCHEMATIC"
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO
Phillips Federal No. 2Y
330' FNL, 1650' FEL, Sec. 33, T-17-S, R-33-E



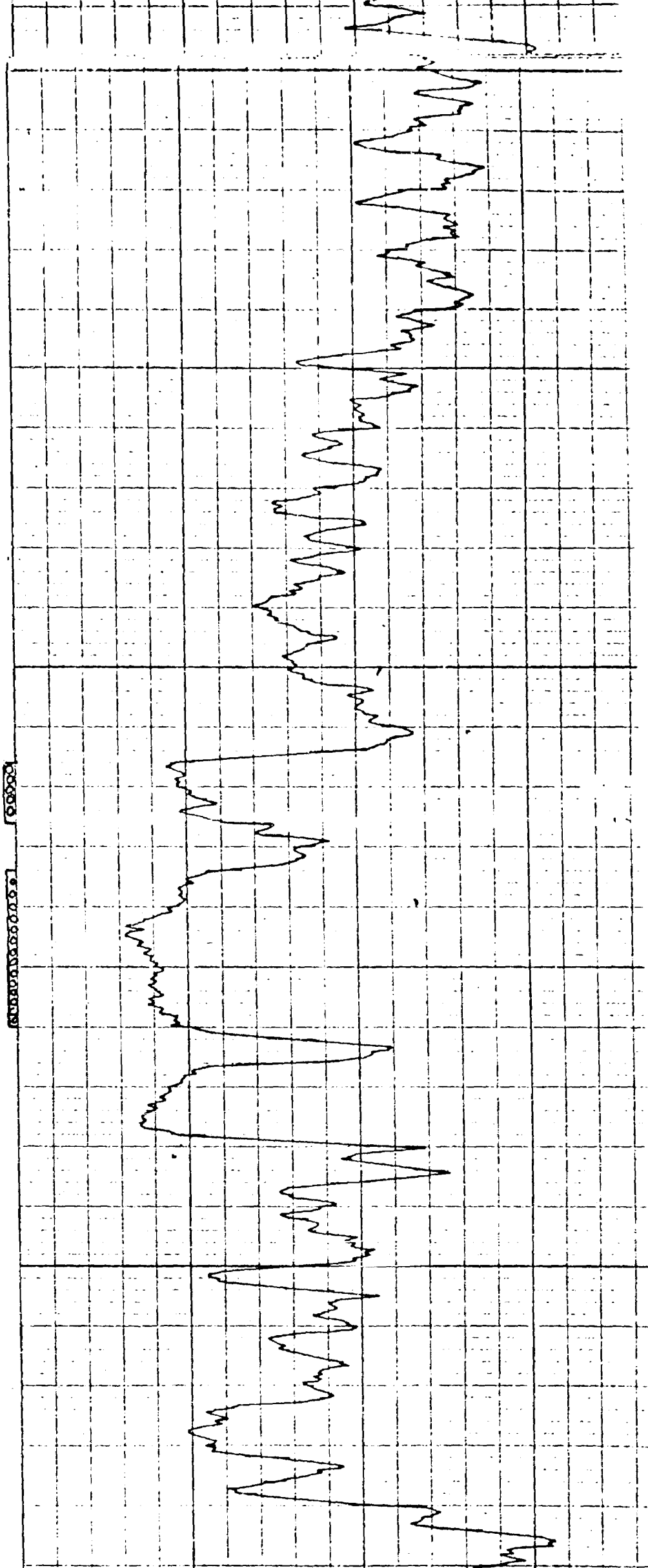
4416
4372
41

Exhibit "B"



Pennzoil Co.

R.D. 4546
T.D. 4550



5 1/2" Phillips Federal 2-Y

R.D. 4558
T.D. 4560

PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO
 Phillips State No. 2
 1980' FSL; 660' FWL, Sec. 28, T-17-S, R-33-E

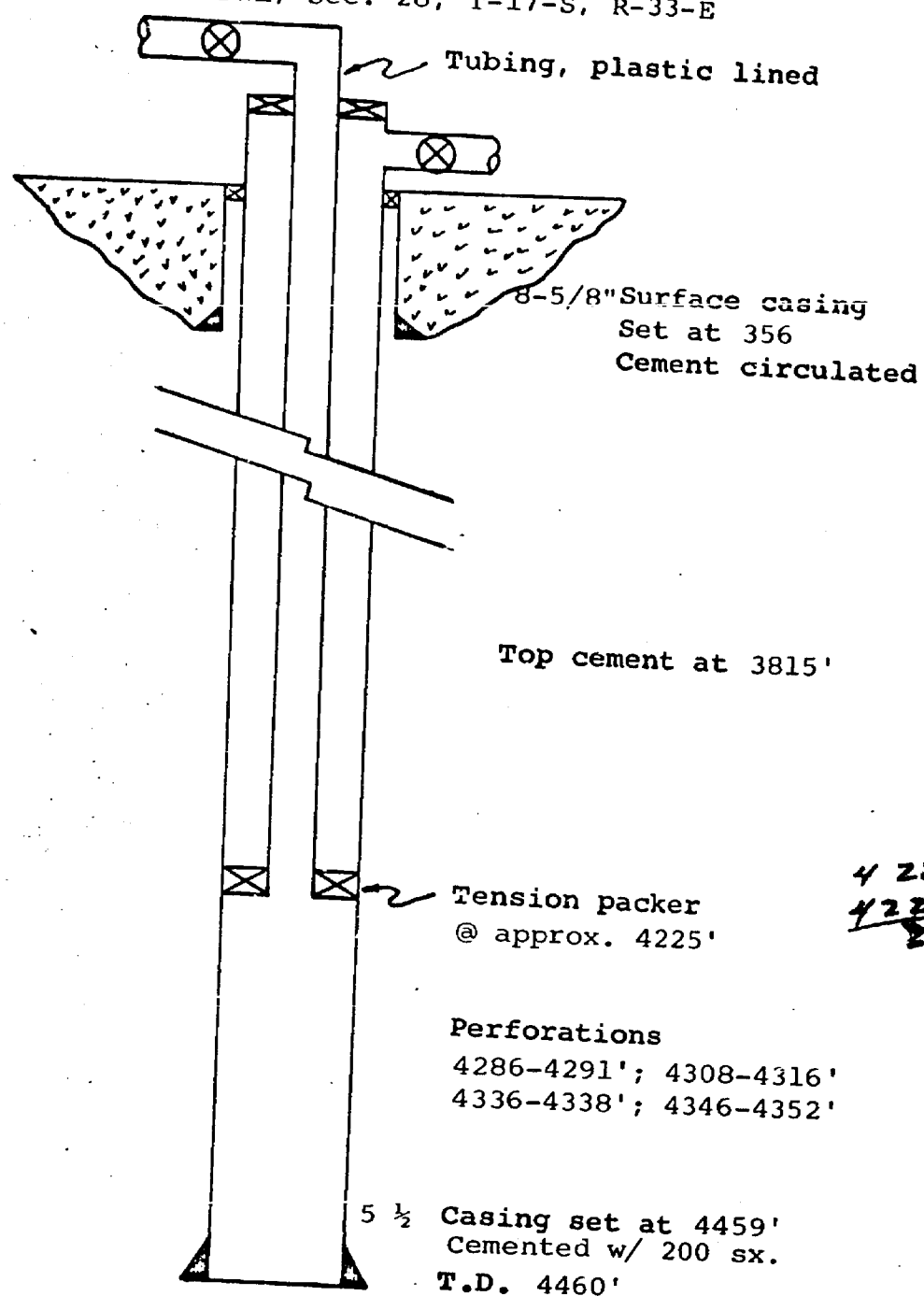
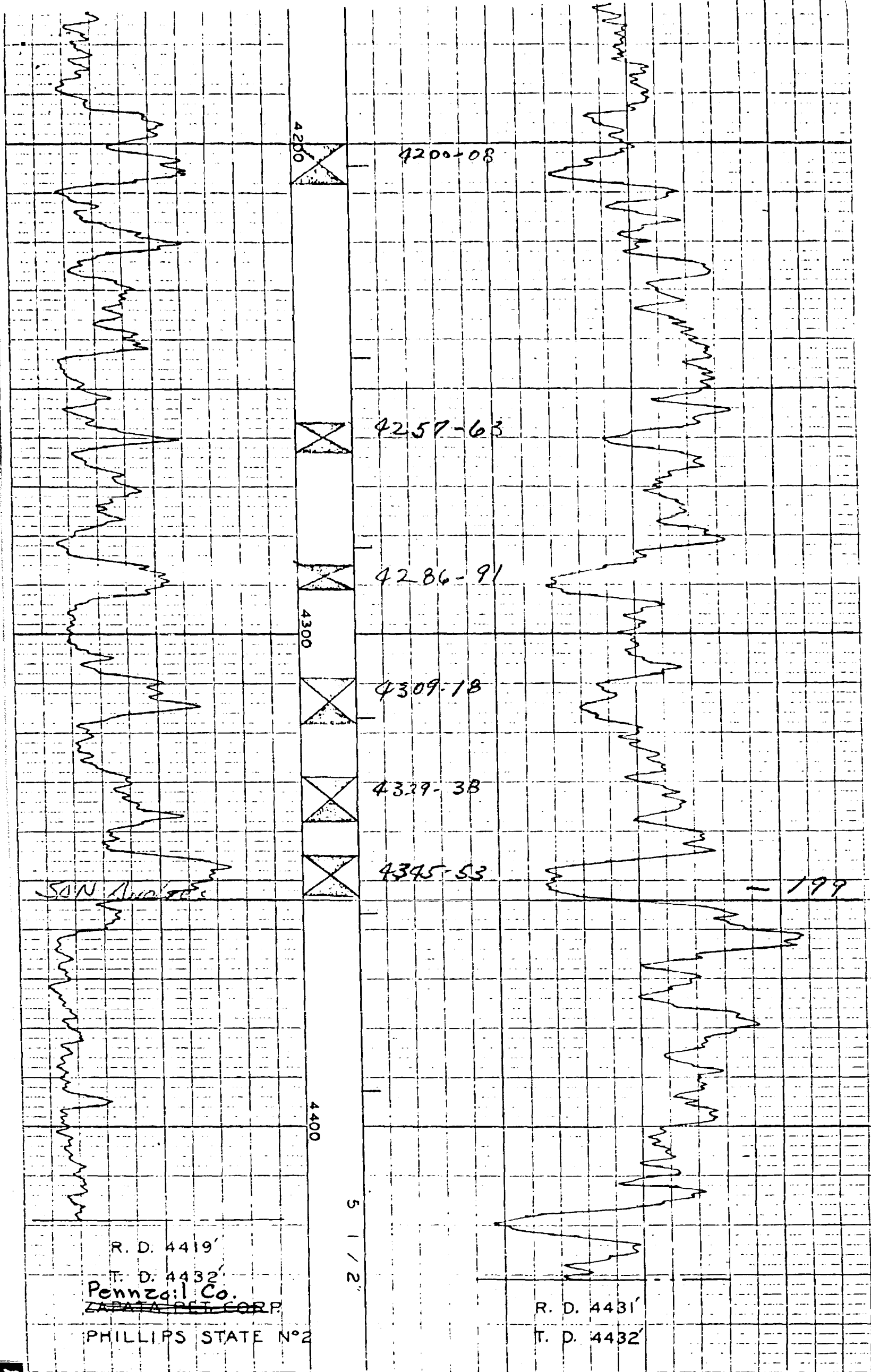
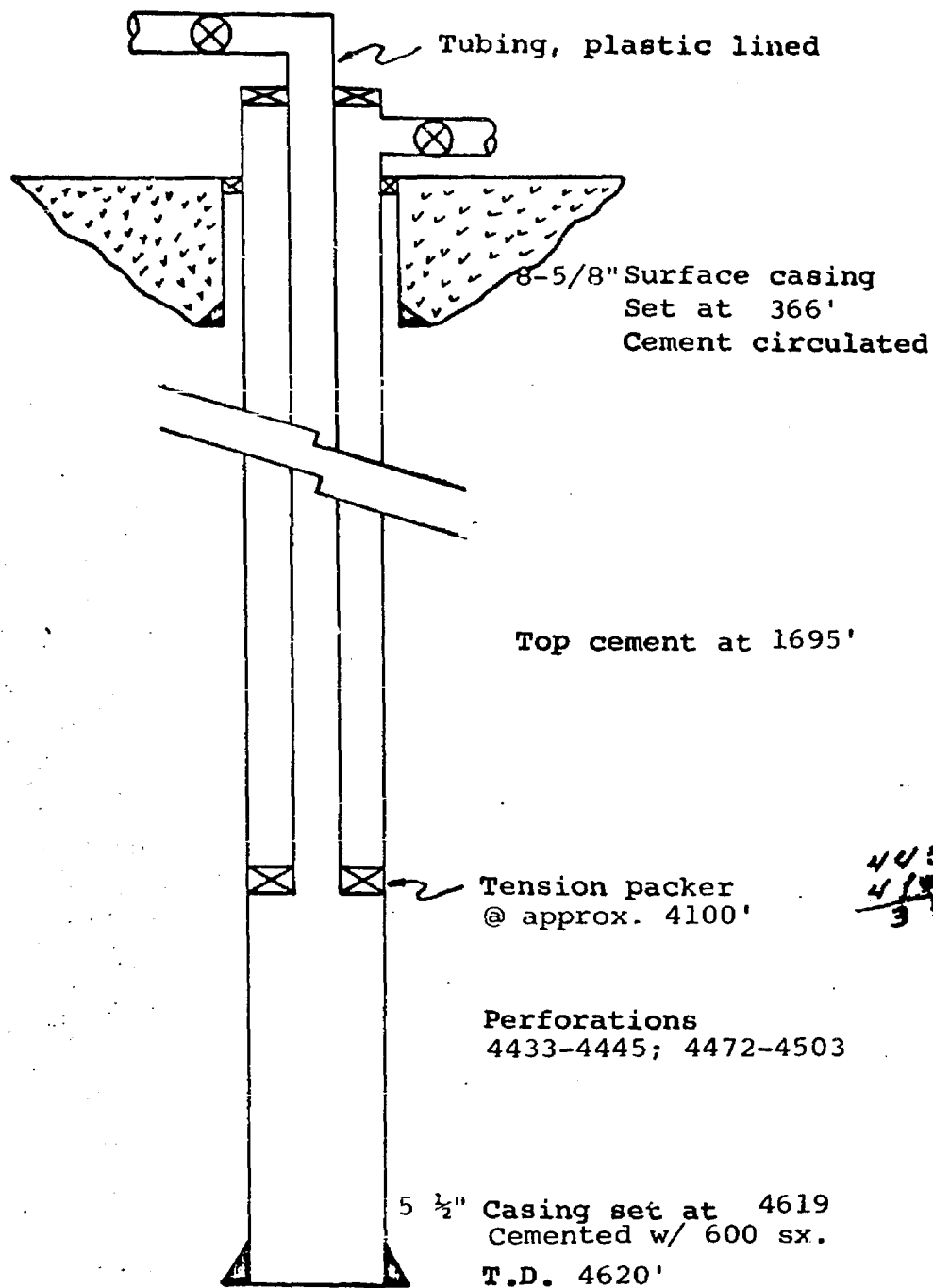


Exhibit "D"



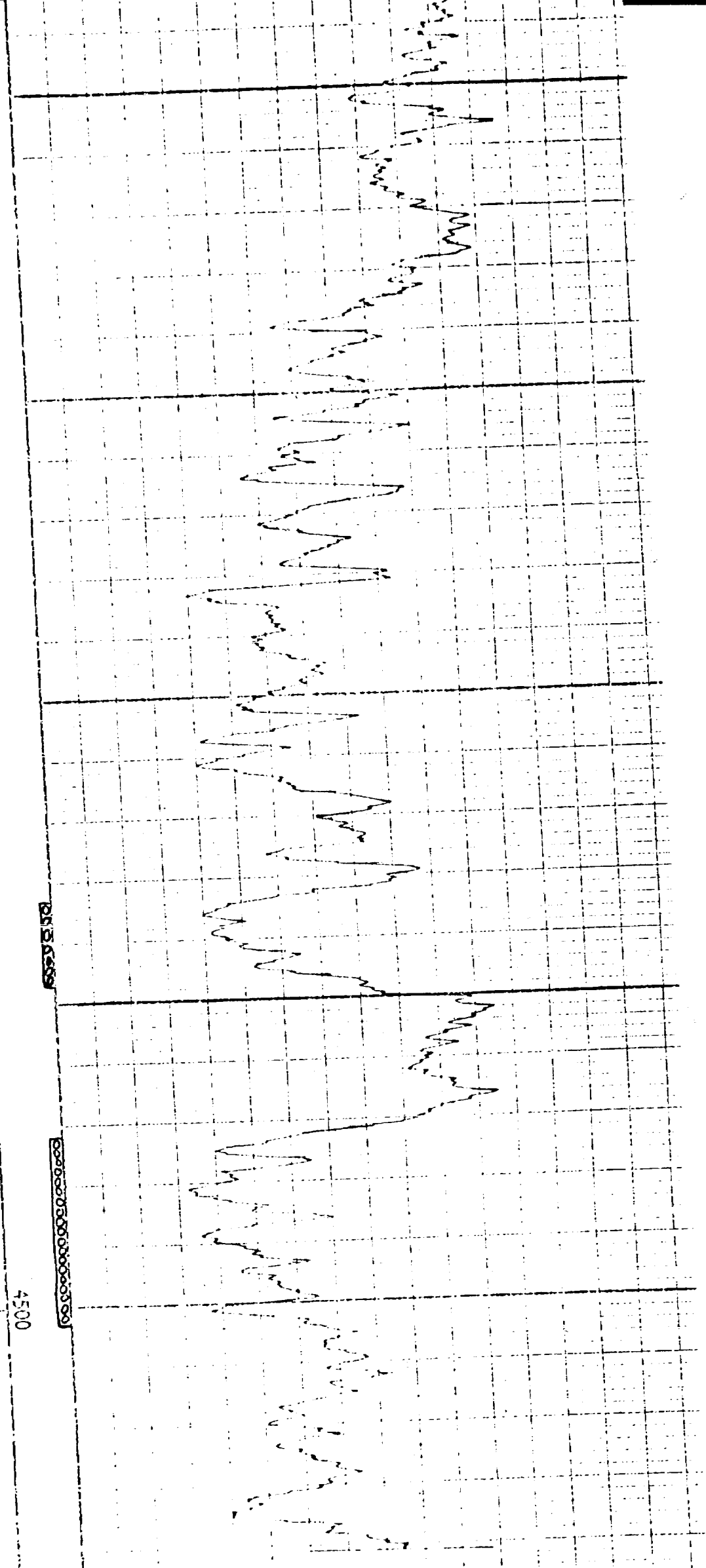
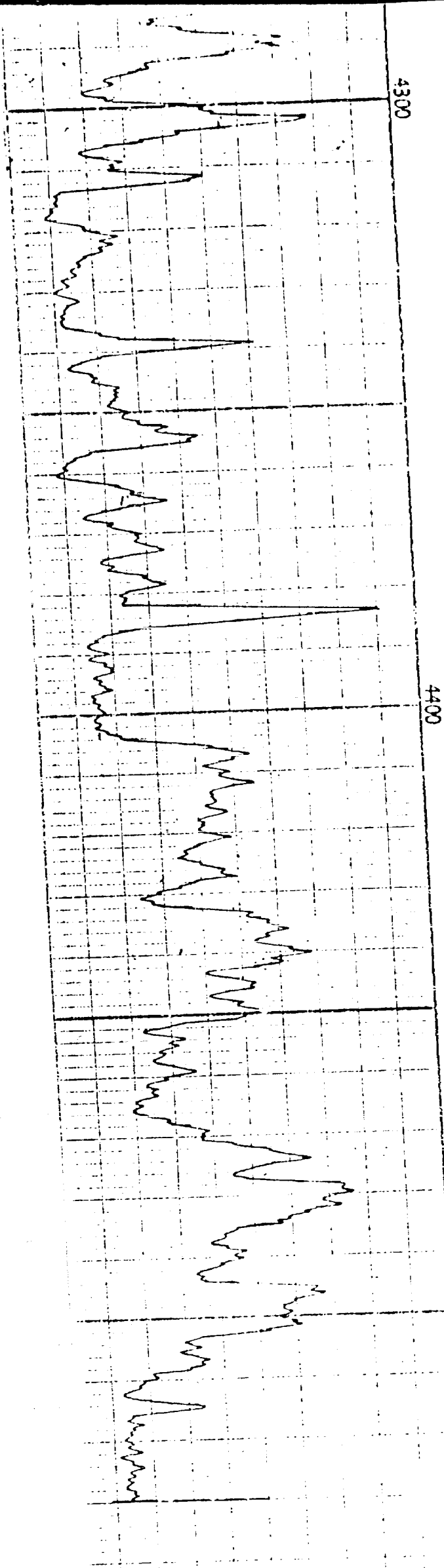
PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO

Phillips Federal No. 3
 1980' FNL, 660' FWL, Sec. 33, T-17-S, R-33-E



4433
 4100
 353

Exhibit "C"



Pennzoil Co. Phillips Federal No 3.
 R. D. - 4530' R. D. - 4541'
 T. D. - 4543'

PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO
 Phillips State No. 4
 330' FN&WL, Sec. 28, T-17-S, R-33-E

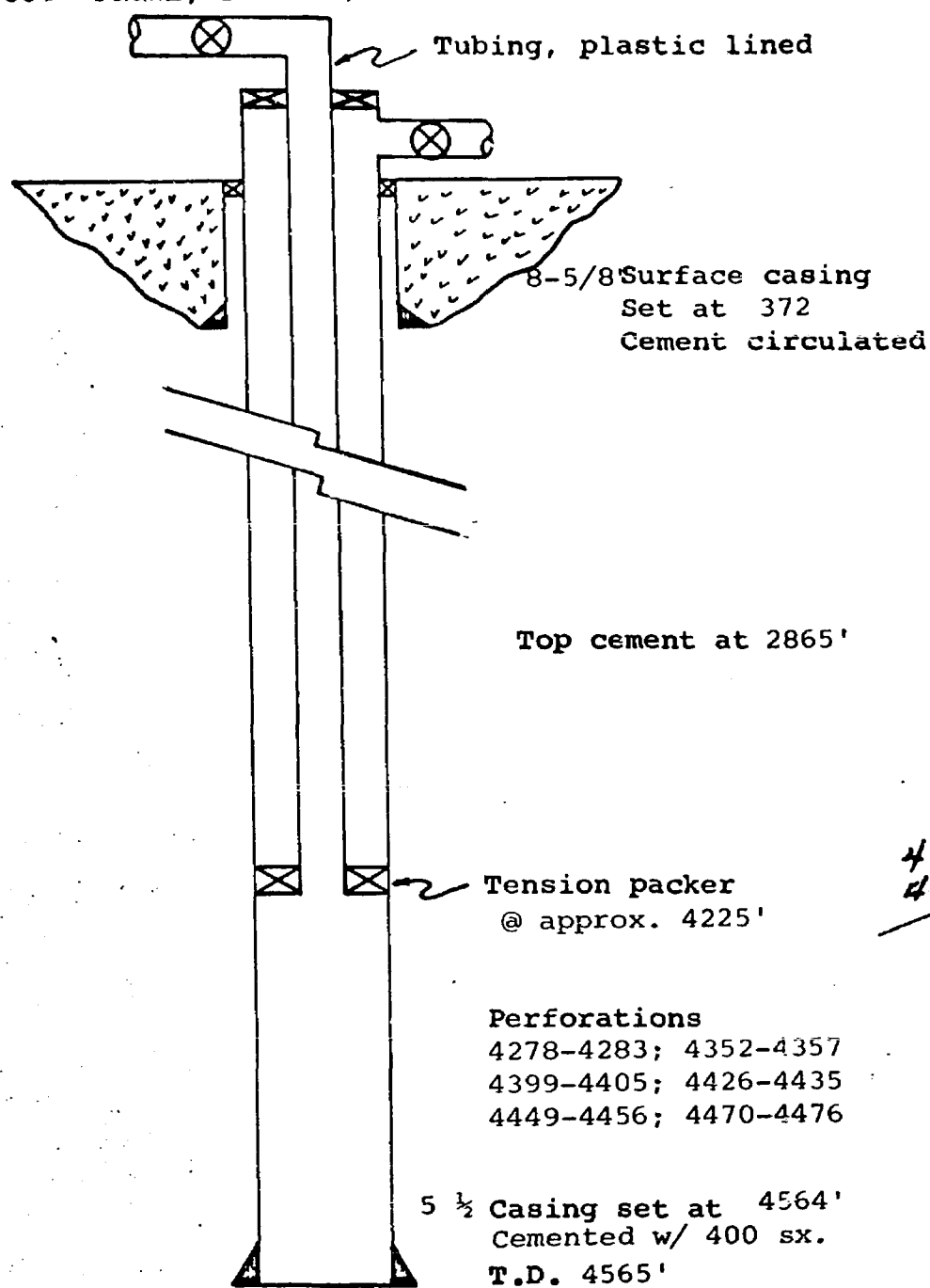
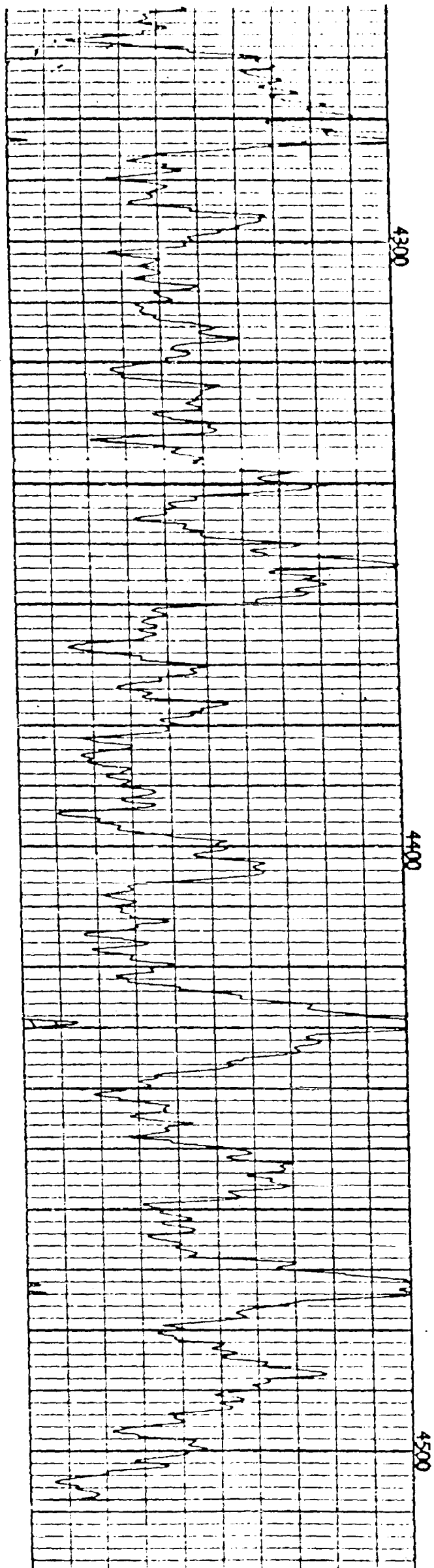
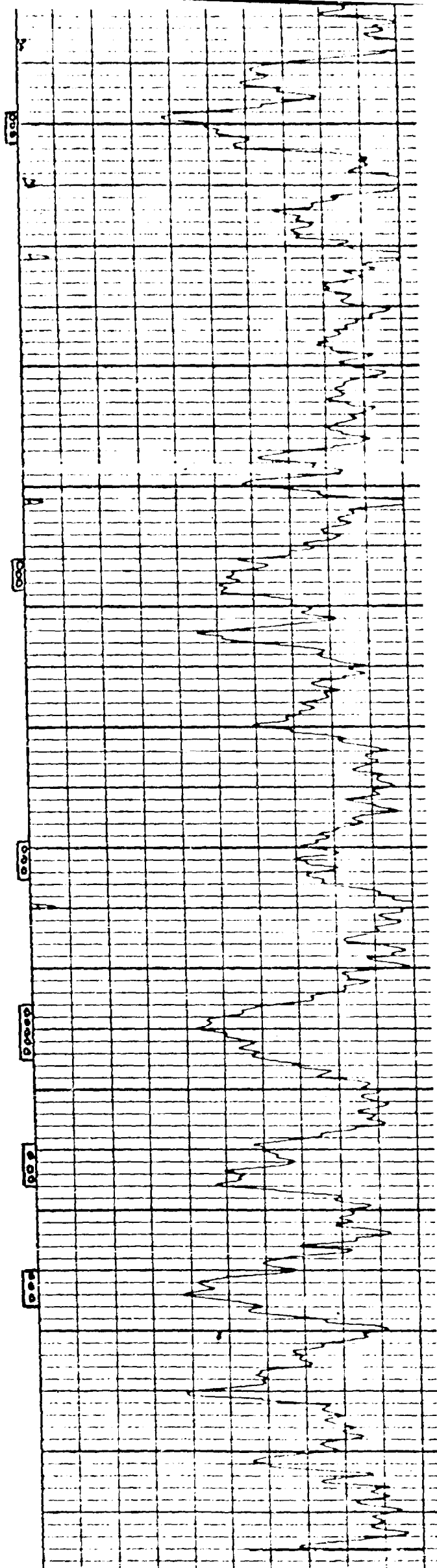


Exhibit "E"



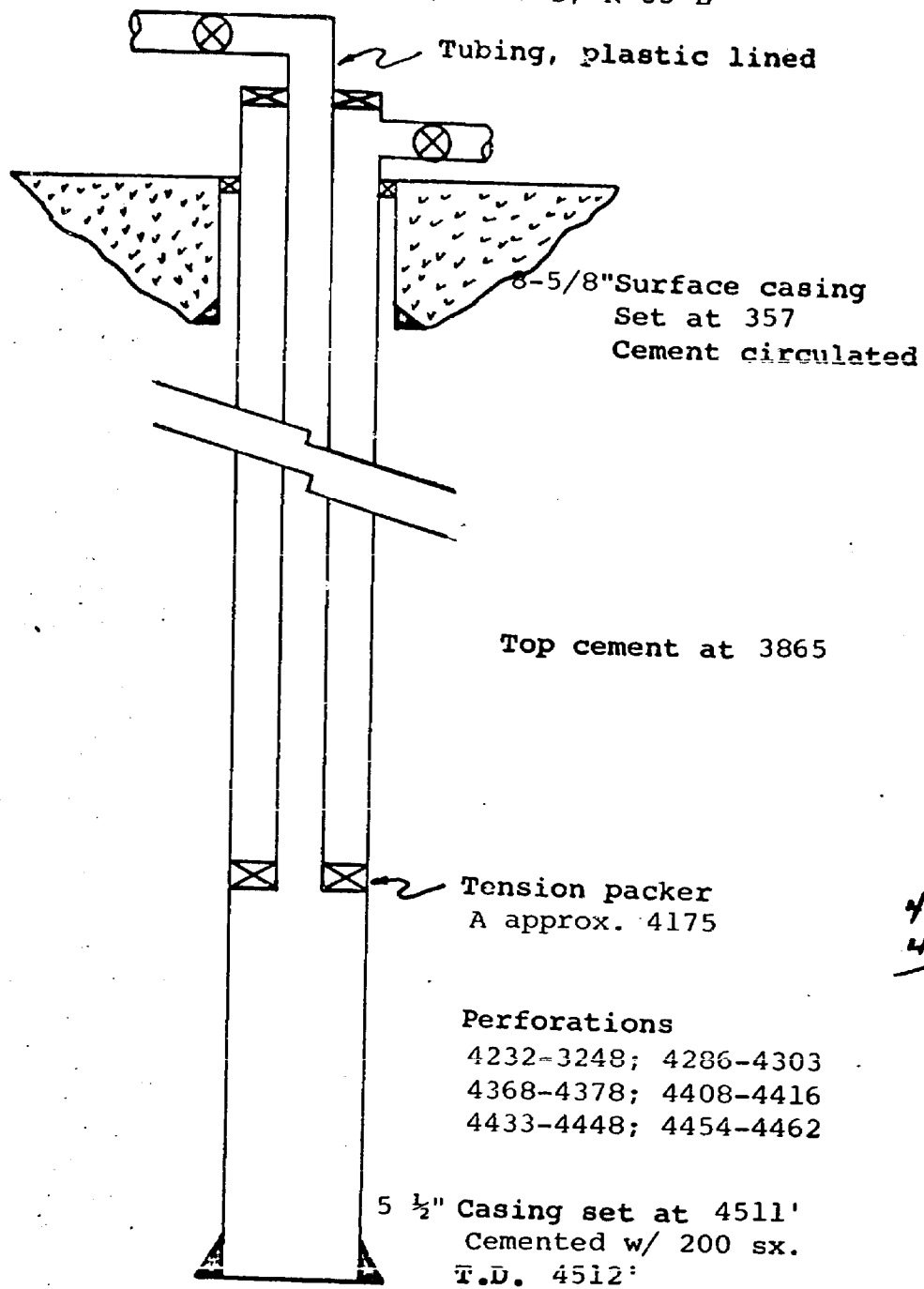
R.D. 4508
Pennzell Co.
Phillips State No. 4



R.D. = 4516
L.D. = 4518

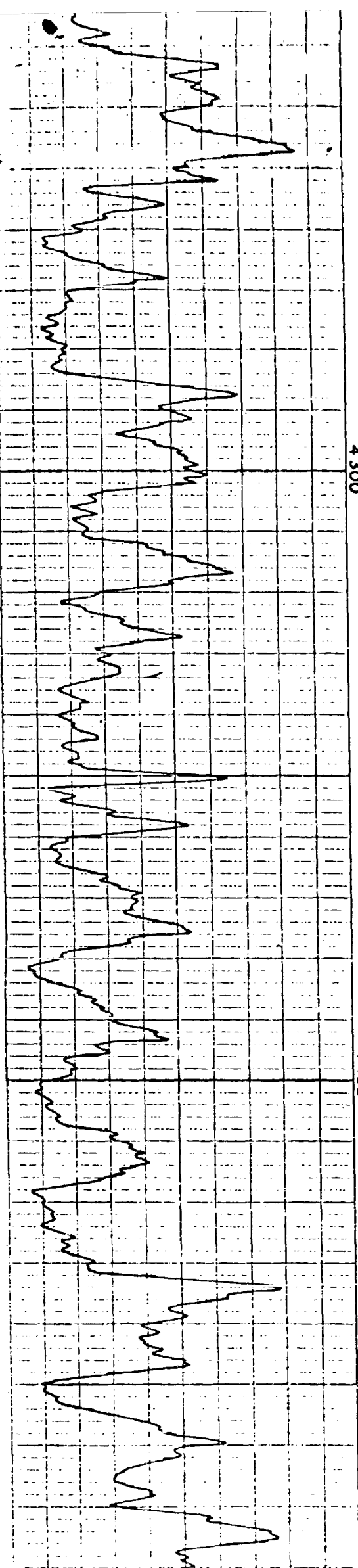
PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO

Phillips State No. 6
 1980' FWL, 2310' FNL, Sec. 28, T-17-S, R-33-E



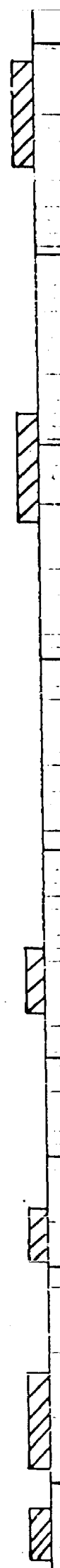
4232
 4175
 57

Exhibit "F"



4300

4400



4232-48

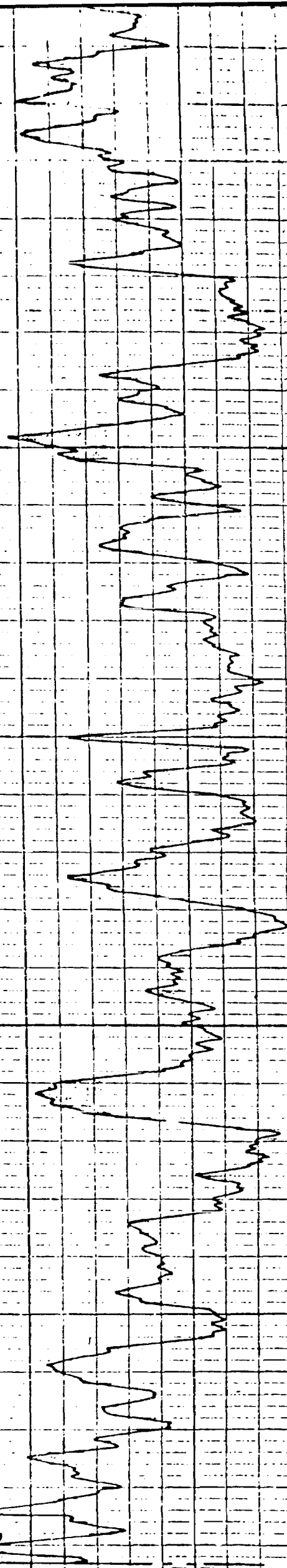
4286-7303

4368-78

4408-16

4433-48

4454-62



4496
413
1709

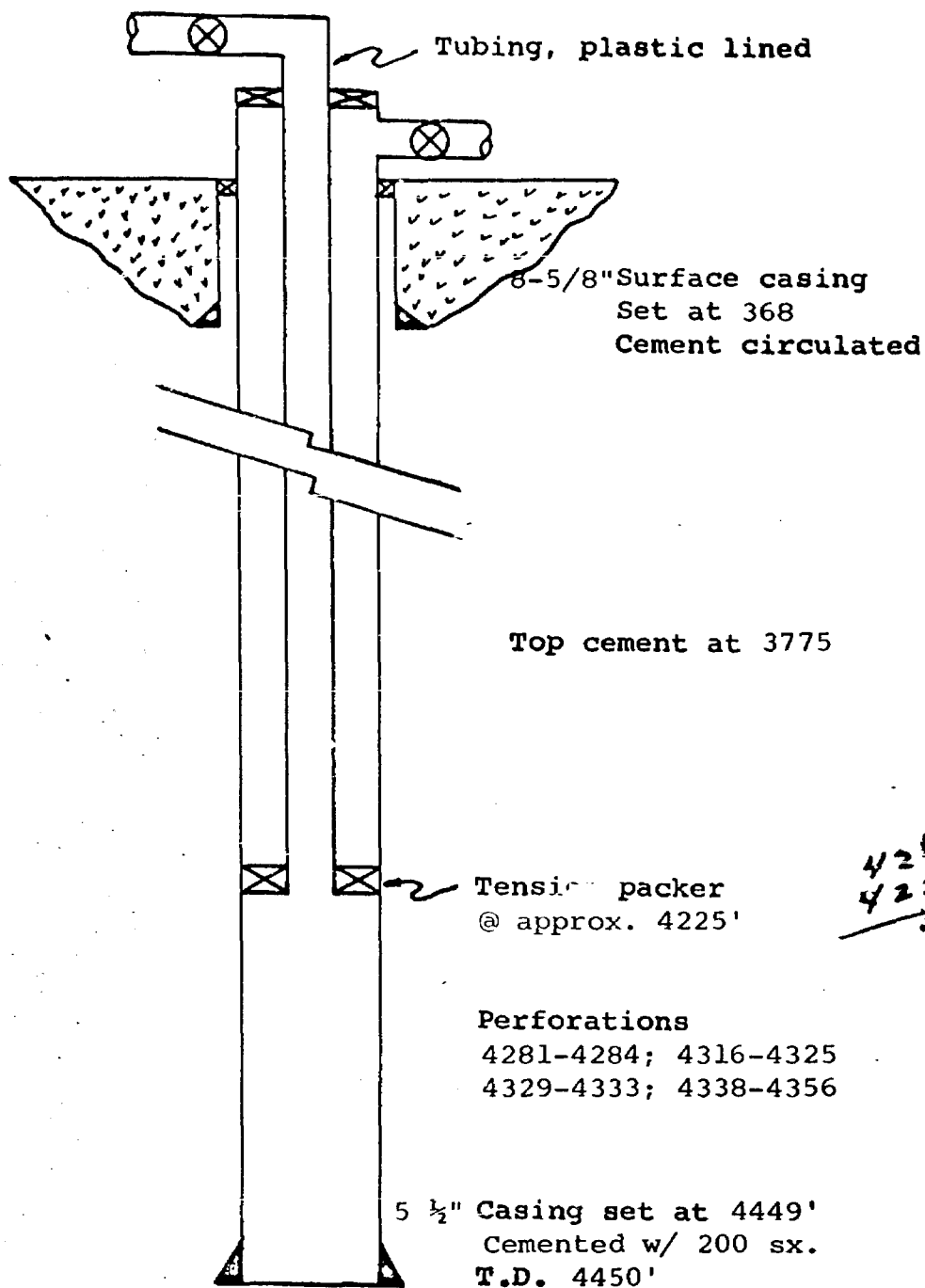
R. D. 4481 Pennzoil Co Phillips State No 6

T. D. 4494 - SAN ANDREAS - 309

ZAPATA PETROLEUM CORP.

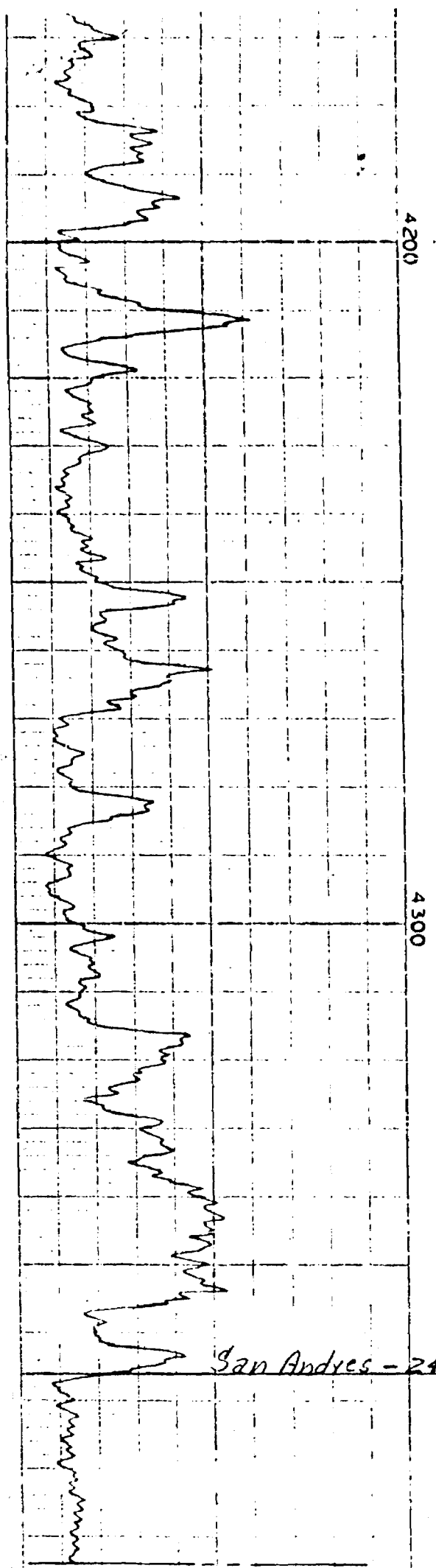
R. D. 4493

PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO
 Phillips State No. 8
 660' FSL, 1980' FWL, Sec. 28, T-17-S, R-33-E

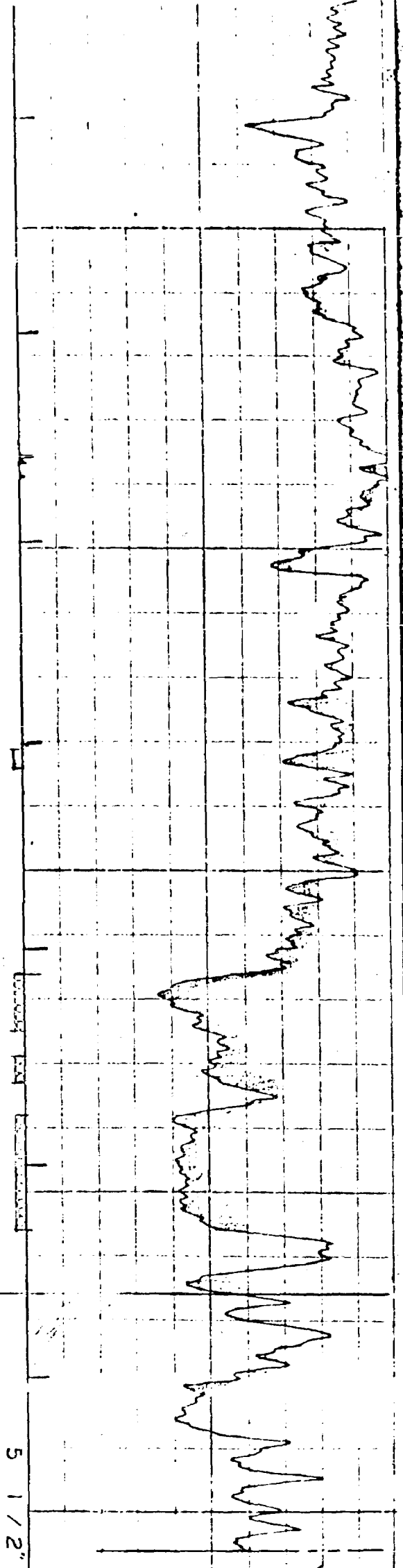


4281
 4225
 76

Exhibit "G"



R. D. 4394'
T. D. 4407'
~~Pennzoil Co.~~
~~ZAPATA PET. CORP.~~
PHILLIPS STATE N° 8
EAST MALJAMAR



R. D. 4406'
T. D. 4407'

PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO
 Phillips State No. 10
 1650' FE&SL, Sec. 28, T-17-S, R-33-E

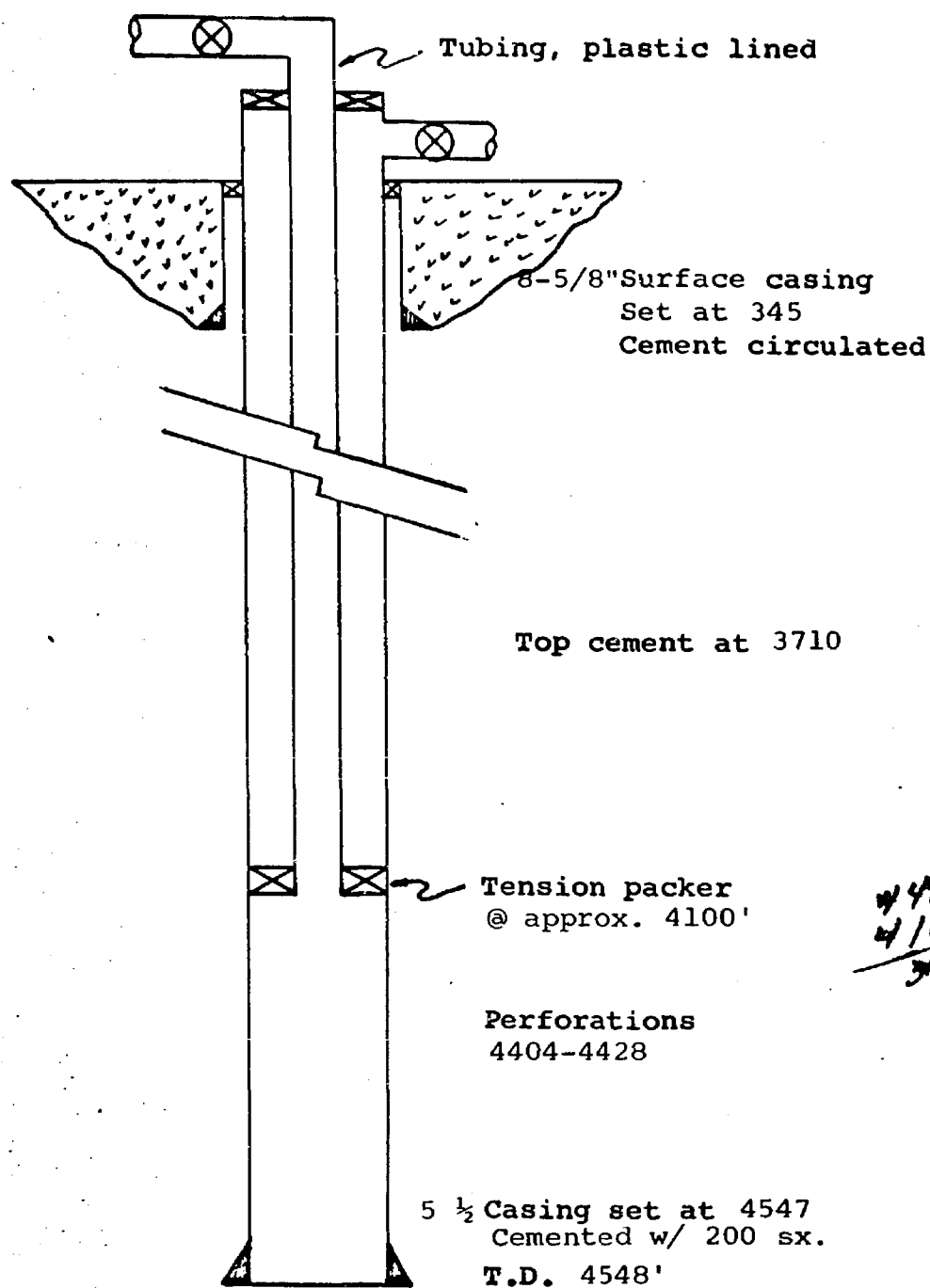
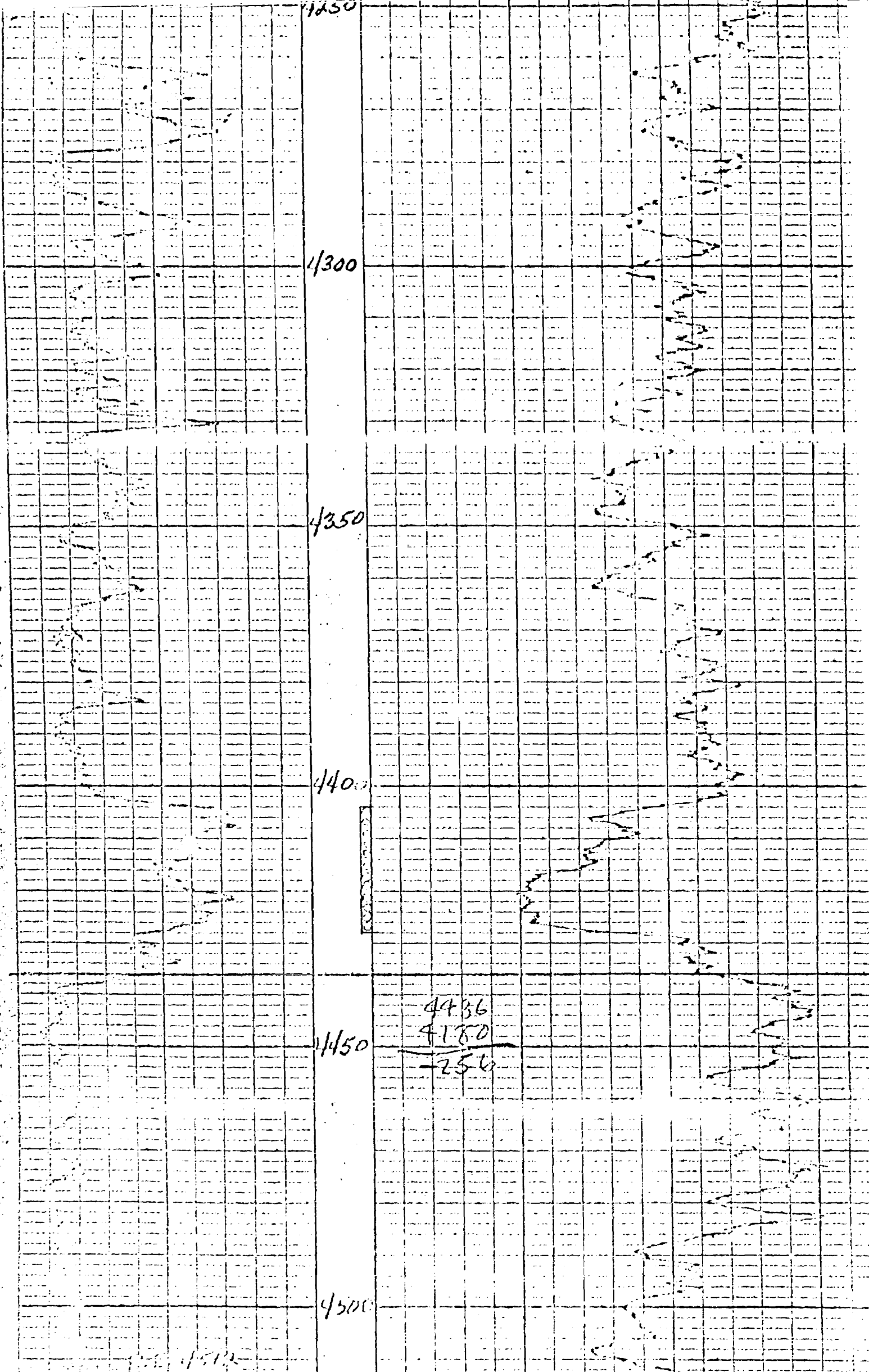


Exhibit "H"



PENNZOIL COMPANY
WATER INJECTION WELL SCHEMATIC
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

Phillips State No. 13
660' FS&EL, Sec. 28, T-17-S, R-33-E

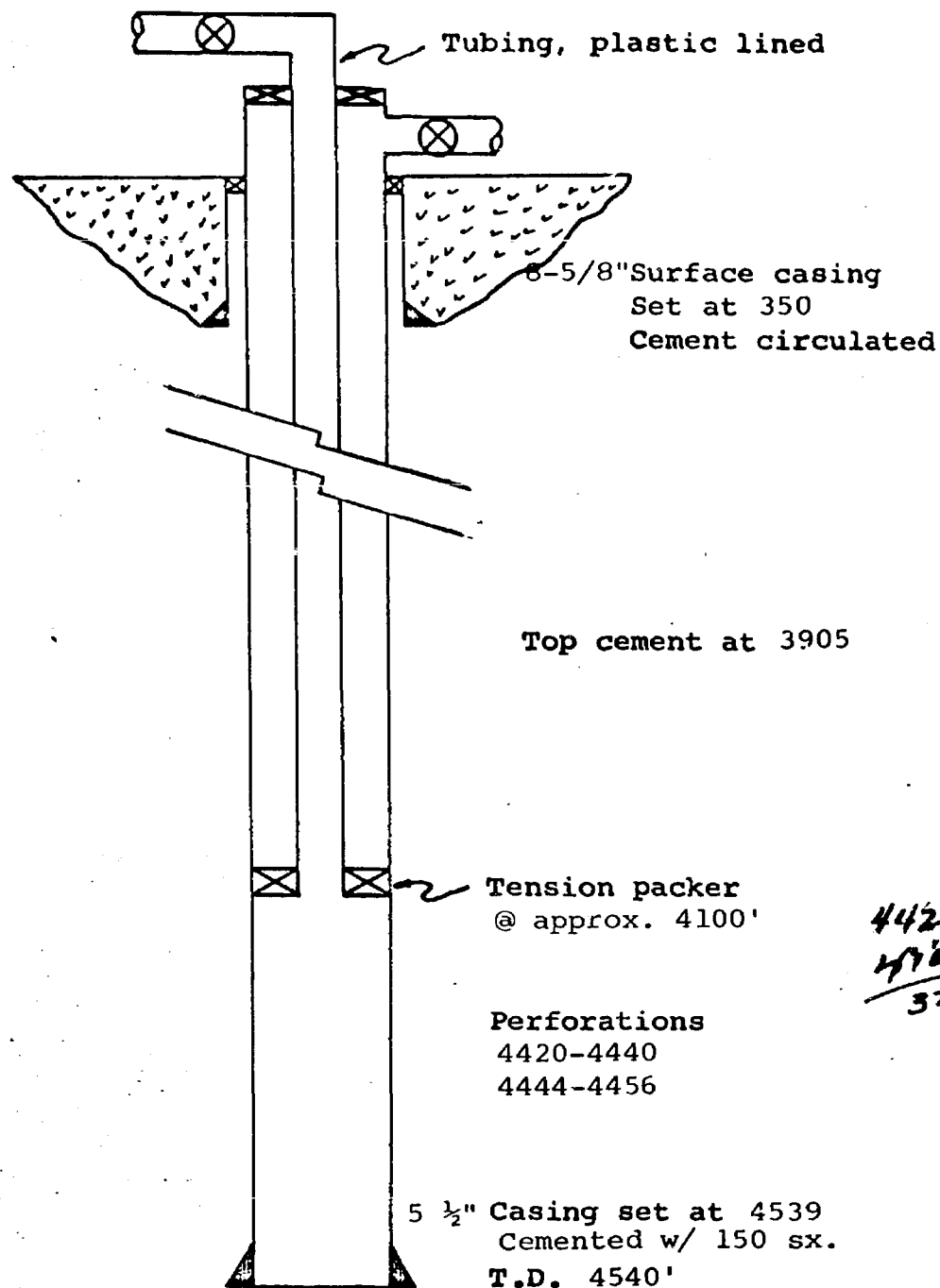
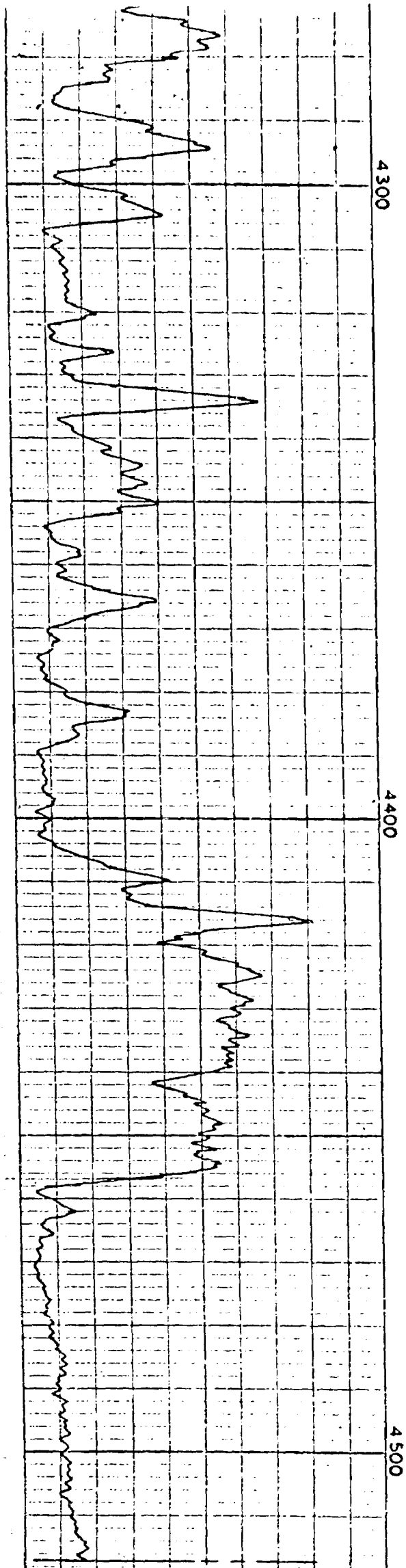
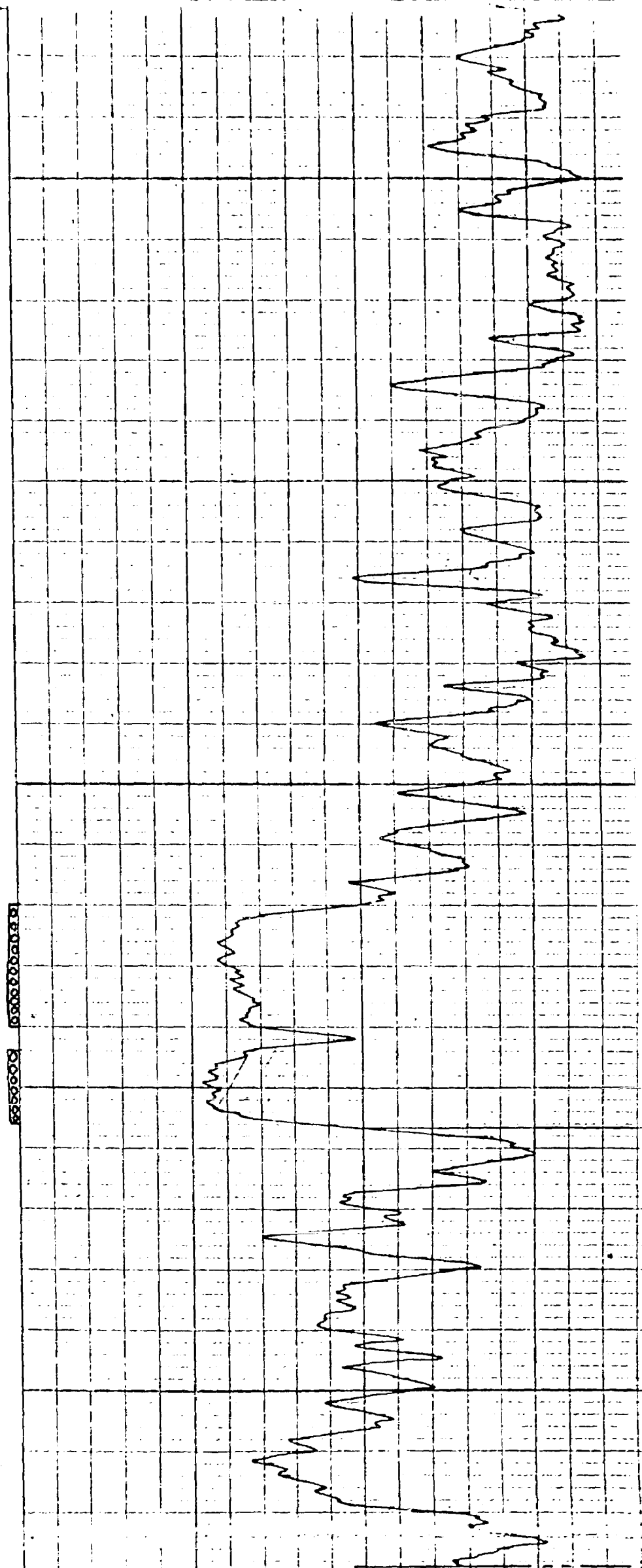


Exhibit "I"



R. D. 4517
 T. D. 4530
~~Pennzoil Co.~~
~~ZAPATA PET CORP.~~
 PHILLIPS STATE NO 13
 MALJAMAR



R. D. 4529
 T. D. 4530

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

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

EXAMINER HEARING

IN THE MATTER OF:

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

Case No. 3459

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner Hearing

Santa Fe, NEW MEXICO

REGISTER

HEARING DATE SEPTEMBER 28, 1966 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Victor T. Linn	Continental Oil Co	Midland, Texas
James P. Boyson	Continental Oil Co	Midland, Texas
Kenneth W. Haddley	Continental Oil Co	Midland, Texas
Jason Kallala	Continental Oil Co	Midland, Texas
John H. Haddley	Continental Oil Co	Midland, Texas
Ronald Haddley	Continental Oil Co	Midland, Texas
Al Haddley	Continental Oil Co	Midland, Texas
E. L. Haddley	Continental Oil Co	Midland, Texas
Sam T. Linn	Continental Oil Co	Midland, Texas
Larry B. Hall	Continental Oil Co	Midland, Texas
Tom Haddley	Continental Oil Co	Midland, Texas
W. V. Kaddley	Continental Oil Co	Midland, Texas
John Haddley	Continental Oil Co	Midland, Texas
W. T. Haddley	Continental Oil Co	Midland, Texas
John Haddley	Continental Oil Co	Midland, Texas
Nma Duffarme	RW Byram & Co	Santa Fe
John B. Duffarme	RW Byram & Co	Santa Fe

dearnley-meier

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 256-1294 • ALBUQUERQUE, NEW MEXICO

MR. UTZ: Case 3459.

MR. HATCH: Application of Pennzoil Company for a waterflood project, Lea County, New Mexico.

MR. DURRETT: If the Examiner please, J. M. Durrett of the firm of Rhodes, McCallister and Durrett, representing the applicant. I have one witness, Mr. Ken Huddleston, and ask that he be sworn at this time.

(Witness sworn.)

MR. UTZ: Are there any other appearances? You may proceed.

KENNETH R. HUDDLESTON

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

DIRECT EXAMINATION

BY MR. DURRETT:

Q Will you please state your name and position for the record?

A I'm Kenneth R. Huddleston, Manager of Engineering and Drilling for Pennzoil Company, Midland, Texas.

Q Mr. Huddleston, have you testified previously before the Commission or one of its Examiners as an expert witness and had your qualifications accepted?

A Yes, I have. I have testified three times before the Examiner.

MR. UTZ: He's qualified, yes.

Q (By Mr. Durrett) Will you please state to the Examiner what it is that the applicant is seeking in this case?

A Well, we desire to waterflood our leases, our Phillips State and Phillips Federal leases in the Maljamar field, Lea County, New Mexico as shown on this plat.

MR. DURRETT: Could we have this marked Exhibit 1?

(Whereupon, Pennzoil's Exhibit No. 1 was marked for identification.)

Q Now, will you please refer to Exhibit 1 and state to the Examiner what that is?

A This is a plat of the area showing the lease ownership and the zones in which the various wells within a radius of two miles of subject leases are.

Q Does that also show the injection wells, Mr. Huddleston?

A Yes. The wells colored red are the proposed injection wells.

Q Do you have a schematic diagram of your injection wells?

A Yes.

(Whereupon, Pennzoil's Exhibit No. 2 was marked for identification.)

A Exhibit No. 2 is a schematic diagram and gamma ray neutron log of each of the proposed injection wells.

Q Let me ask you this, Mr. Huddleston, referring to Exhibit 2, which is a schematic diagram of all of the wells marked as a package in this case, package exhibit, do you have logs attached to each of your diagrams?

A Yes. Attached to each of the schematic diagrams is a gamma ray neutron log, and on the section of log that we've used for an exhibit is the perforations in which these wells are completed.

Q Are all of these wells completed in a similar manner?

A All of the wells have casing set through the pay zone and perforated. These wells all had 8-5/8ths surface pipe set to approximately 350 to 60 feet cement circulated, and on the State wells the top of the cement on the 5-1/2 casing was approximately 36 to 3700 feet and on the two Federal wells the cement was brought back to approximately 1700 feet.

Q Are the locations shown on your diagrams?

A Yes. The well name and location.

Q Are those locations the correct locations? I believe there may have been an error in the application.

A These are the correct locations.

Q How many injection wells do you have, Mr. Huddleston?

A On the Federal lease there are two proposed injection wells and on the State there's six proposed injection wells.

(Whereupon, Pennzoil's Exhibits No. 3-A & 3-B were marked for identification.)

Q Now, Mr. Huddleston, will you please refer to what has been marked as Exhibit 3-A and state to the Examiner what that shows?

A This is the production on the Phillips State lease by months and also yearly and cumulative production.

Q I believe that's 3-B, isn't it, Mr. Huddleston? Isn't 3-A the Federal?

A The Federal. The 3-A is the Phillips Federal lease, and it is the production by months, also by years, and shows the cumulative production.

Q Do you have a decline curve or decline curves?

A Yes.

(Whereupon, Pennzoil's Exhibits No. 4-A & 4-B were marked for identification.)

Q Will you please refer to what has been marked as Exhibits 4-A and 4-B and briefly state what that represents?

A Exhibits 4-A and B are production decline curves

plotted monthly versus, or barrels of oil versus time on semi log paper.

Q Well, that exhibit won't show it, but do you have average production figures?

A Yes. I would like to present this as an exhibit.

(Whereupon, Pennzoil's Exhibits 5-A & 5-B were marked for identification.)

Q Will you please refer to Exhibits 5-A and 5-B and state to the Examiner what they show?

A Exhibits 5-A and B are the most recent production tests for the wells on the respective leases. They show the well number, date, duration of the test and barrels of oil and water and gas-oil ratio for the respective wells.

Q Have you averaged the production, Mr. Huddleston, so you can give the Examiner an average figure on daily production and monthly production?

A The Phillips State lease has an average daily production of 3.43 barrels of oil. The Phillips 3 has an average of 3.98 barrels of oil per day. You'll note that on the Phillips Federal lease well test the No. 3 well is presently completed in the Corrigan-Queen zone, but this well has pipe set through the zone that we propose to waterflood. The Queen section in this well will be squeezed off. This well is presently producing approximately a barrel and a half

Q

(Whereupon, Pennzoil's Exhibit No. 6 was marked for identification.)

A

the Phillips Federal lease.
You have not re

Q

4

Q

A

Q

Q

A

Q

A

Q

what that letter is?

A This is a letter from Double Eagle Corporation of New Mexico, which is a water company operating in the area, dated September 5th, stating that they have available adequate water to flood these leases.

Q Is the Double Eagle Company your proposed source of water?

A Yes, it is. To my knowledge they're the only source of water in the area.

Q What volumes of water do you propose to inject in your flood?

A From past experience in the area we expect to inject between 350 and 400 barrels of water a day, between 2500 and 3000 pounds.

Q Do you have an exhibit showing remaining primary and waterflood reserves?

A Yes.

(Whereupon, Pennzoil's Exhibits No. 8-A & 8-B were marked for identification.)

Q Will you please refer to Exhibits 8-A and 8-B and state to the Examiner what they portray?

A The Exhibits 8-A and 8-B show the cumulative production to 7-1-66, the estimated remaining primary, the ultimate primary reserves, and in this case we expect the waterflood reserves to be equal to 100% of the ultimate primary.

Q Is it your opinion as a petroleum engineer that approval of this proposed flood will prevent waste and protect correlative rights?

A Yes, it will.

Q Is Pennzoil proposing that this flood be governed by Rule 701-E of the Commission rules and regulations?

A That's correct.

Q Do you have anything further to present to the Examiner?

A No, I do not.

MR. DURRETT: If the Examiner please, that will conclude our direct examination.

CROSS EXAMINATION

BY MR. UTZ:

Q As I understand, all these wells will have lined tubing and water injection under a packer?

A That's correct, Mr. Examiner. We will plastic-coat the tubing and packer and set the packer approximately a hundred feet above the top perforations and the packer also will be plastic-coated.

Q What do you intend to do about the annulus? Do you intend to put any inert fluid or pressure gauge or any such thing?

A In the past we have had the best results by filling

the annulus with fresh treated water, and we put a pressure gauge on and periodically observe them.

Q Do you intend to do this with these wells?

A Yes, we do.

Q On your Exhibits No. 5-A and 5-B, were these wells tested at full capacity during any twenty-four-hour period?

A Yes, sir, they were. Actually, Mr. Examiner, these well tests add up to more than we're able to produce from the lease on a daily basis. On the Phillips State lease the daily production by test added up to 44.66 barrels and the lease will actually only produce about 38 barrels a day.

Q And, as I recall, all the surface casing is set below the fresh water zones with your cement circulated to the surface?

A Yes, sir, that's correct.

MR. UTZ: Any other questions?

MR. DURRETT: I have one additional question.

REDIRECT EXAMINATION

BY MR. DURRETT:

Q Mr. Huddleston, have you received verbal approval of your proposed flood from the State Engineer's office?

A Yes, I have. Mr. Irby called yesterday and gave approval.

MR. DURRETT: That's all.

MR. KELLAHIN: If the Examiner please, Jason Kellahin appearing for Cities Service Oil Company. Cities Service is the operator of acreage offsetting the waterflood project proposed by Pennzoil and a line agreement has been submitted to Cities Service management which we expect will be signed very shortly, and Cities Service endorses the proposal as made by Pennzoil.

MR. UTZ: We have a letter in the file dated September 27th from the State Engineer, stating that he does approve the matter in which you are injecting water here. This error that he called our attention to was just an error in the application, was it not?

A Yes, sir, that's right, Mr. Examiner. I believe that was an error in location on the Phillips Federal No. 3.

MR. UTZ: 660 from the west instead of the east?

A Yes, sir, it was to be the east instead of the west.

MR. UTZ: Otherwise, as far as you know, the locations in your application are correct?

A Yes, sir, and the locations shown on the schematic diagrams are correct and the plat has correct locations.

MR. DURRETT: Was Mr. Irby talking about the Phillips Federal No. 2 "Y" in Section 33?

MR. UTZ: No, he was talking about Federal No. 3.

MR. DURRETT: There's probably a typographical

error in the application. The locations on the diagrams are correct.

MR. UTZ: The location on the diagrams is different than in the application.

MR. DURRETT: Well, then, it's a typo.

A Both the plat and the diagrams are correct.

MR. UTZ: Thank you. Did you offer your exhibits?

MR. DURRETT: I don't believe we did, and we would certainly like to do so. We move the introduction of Exhibits 1 through 8.

MR. UTZ: Without objection, they will be accepted into the record.

(Whereupon, Pennzoil's Exhibits 1 through 8 were offered and admitted in evidence.)

MR. UTZ: The witness will be excused.

(Witness excused.)

MR. UTZ: The case will be taken under advisement.

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1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

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I N D E X

WITNESS

KENNETH R. HUDDLESTON	2
Direct Examination by Mr. Durrett	9
Cross Examination by Mr. Utz	10
Redirect Examination by Mr. Durrett	

EXHIBIT

MARKED

OFFERED AND
ADMITTED

Pennzoil's 1	3	12
Pennzoil's 2	3	12
Pennzoil's 3-A & B	5	12
Pennzoil's 4-A & B	5	12
Pennzoil's 5-A & B	6	12
Pennzoil's 6	7	12
Pennzoil's 7	7	12
Pennzoil's 8-A & B	8	

dearnley-meier reporting services, inc.

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1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) SS

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 10th 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 copy of the transcript of
the hearing of New Mexico Oil Conservation Commission
held by me on Sept. 28, 1966.
Charles A. [Signature], Secretary
New Mexico Oil Conservation Commission

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. 3459
Order No. R-3129

APPLICATION OF PENNZOIL 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. Utz.

NOW, on this 4th day of October, 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, Pennzoil Company, seeks permission to institute a waterflood project in the Maljamar (Grayburg-San Andres) Pool by the injection of water into the Grayburg-San Andres formation through eight injection wells in Sections 28 and 33, Township 17 South, Range 33 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.

CASE No. 3459
Order No. R-3129

(5) That the applicant further seeks the establishment of an administrative procedure whereby additional wells and leases operated by the applicant could be included in the waterflood project area.

(6) 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, Fennzoil Company, is hereby authorized to institute a waterflood project in the Maljamar (Grayburg-San Andres) Pool by the injection of water into the Grayburg-San Andres formation through the following-described wells in Township 17 South, Range 33 East, NMPM, Lea County, New Mexico:

Phillips Federal Well No. 2Y, located 330 feet from the North line and 1650 feet from the East line of Section 33

Phillips Federal Well No. 3, located 1980 feet from the North line and 660 feet from the East line of Section 33

Phillips State Well No. 2, located 1980 feet from the South line and 660 feet from the West line of Section 28

Phillips State Well No. 4, located 330 feet from the North line and 330 feet from the West line of Section 28

Phillips State Well No. 6, located 2310 feet from the North line and 1980 feet from the West line of Section 28

Phillips State Well No. 8, located 660 feet from the South line and 1980 feet from the West line of Section 28

Phillips State Well No. 10, located 1650 feet from the South line and 1650 feet from the East line of Section 28

Phillips State Well No. 13, located 660 feet from the South line and 660 feet from the East line of Section 28

-3-

CASE No. 3459

Order No. R-3129

(2) That the subject waterflood project is hereby designated the Pennzoil Maljamar Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the Secretary-Director of the Commission may approve expansion of said waterflood project to include additional injection wells and leases as may be necessary to complete an efficient waterflood injection pattern.

(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.

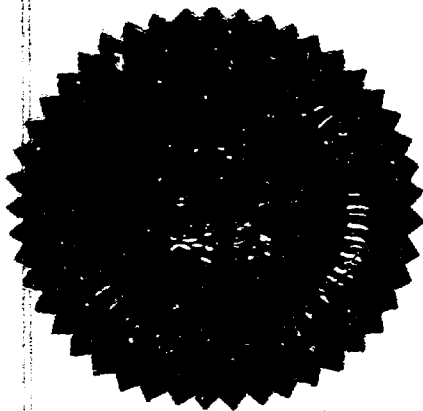
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JACK M. CAMPBELL, Chairman


GUYTON B. HAYS, Member

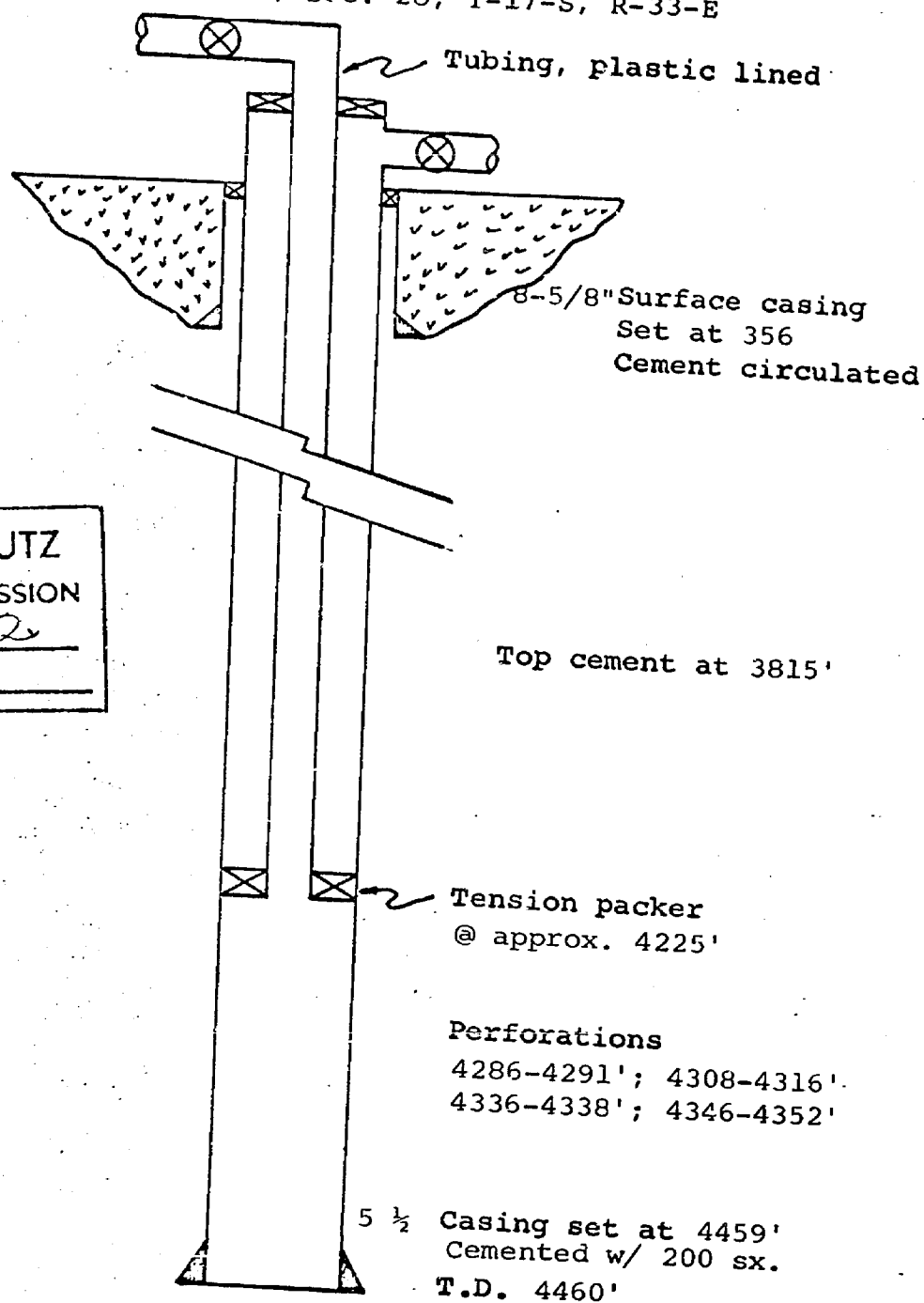

A. L. PORTER, Jr., Member & Secretary



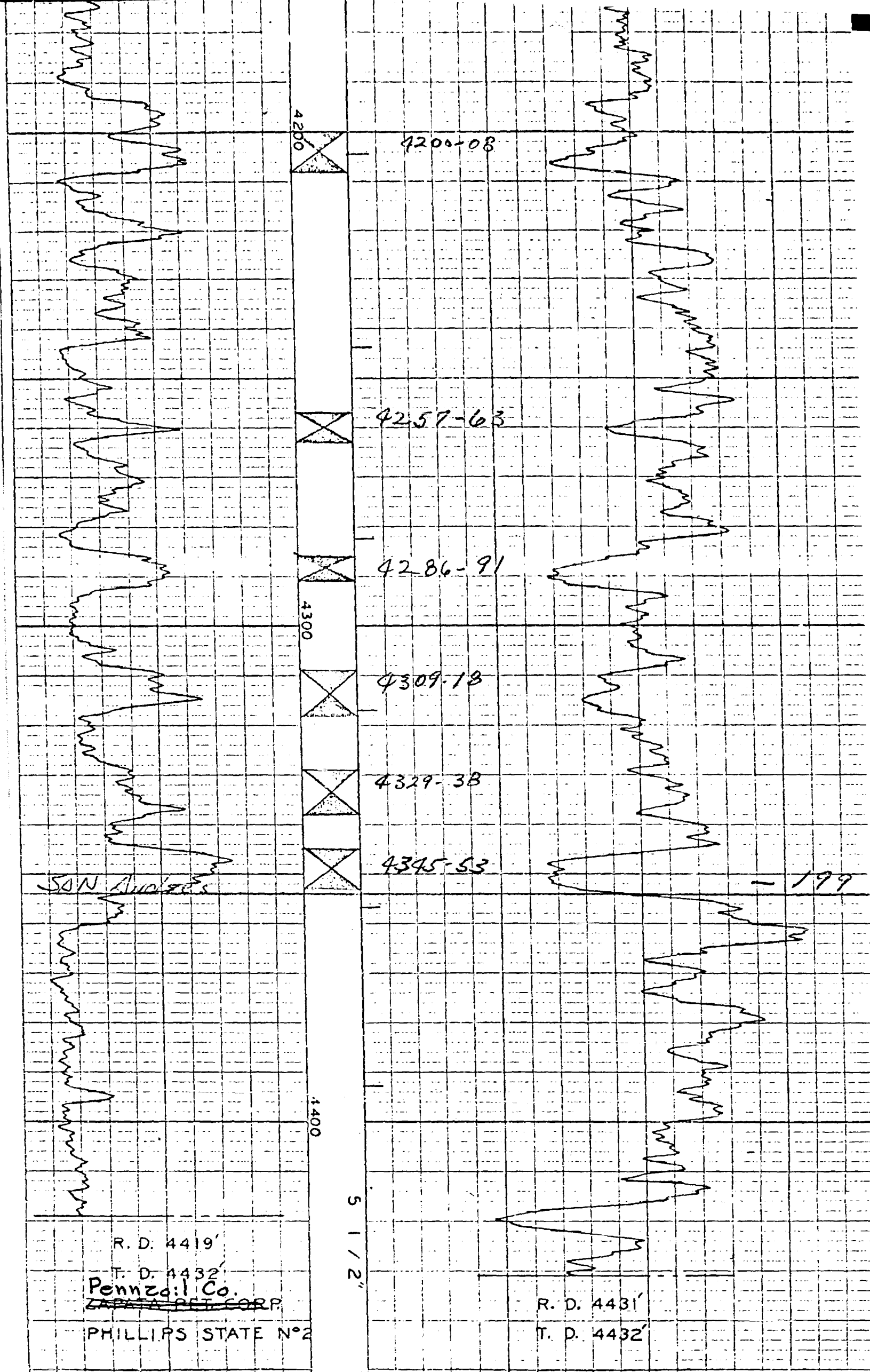
esr/

PENNZOIL COMPANY
WATER INJECTION WELL SCHEMATIC
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

Phillips State No. 2
1980' FSL; 660' FWL, Sec. 28, T-17-S, R-33-E



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Aguel EXHIBIT NO. 2
CASE NO. 3459



4200-08

4257-63

4286-91

4309-18

4329-38

4345-53

SAN ANDREAS

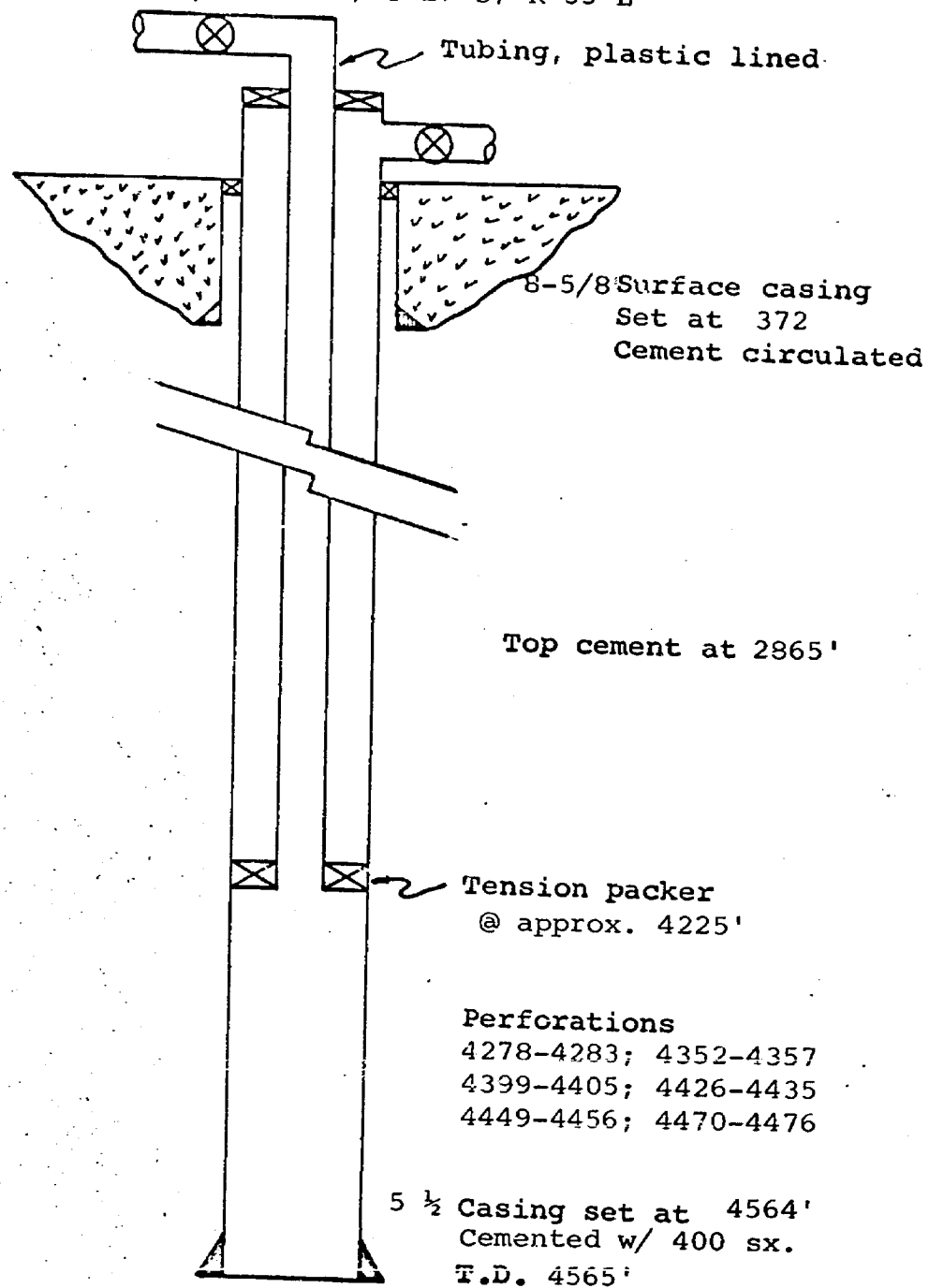
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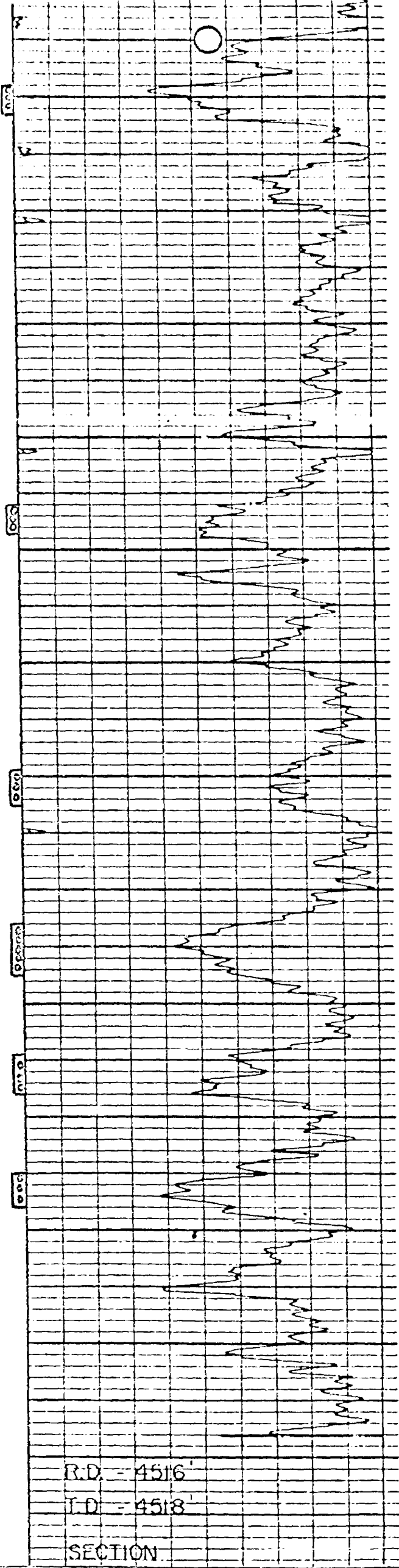
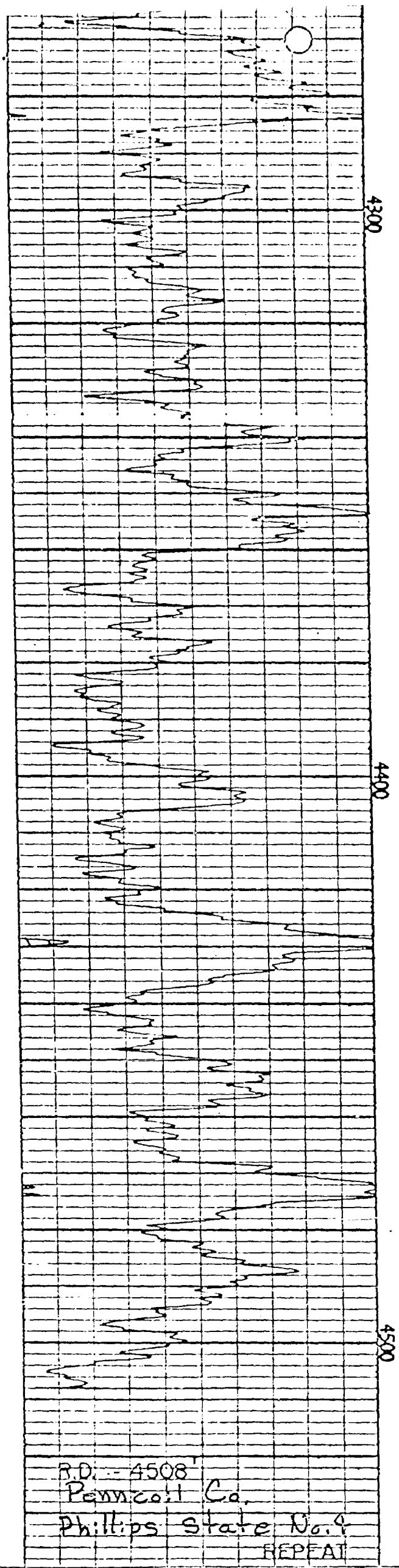
R. D. 4419
T. D. 4432
Pennzoil Co.
~~ZAPATA PET. CORP.~~
PHILLIPS STATE No 2

R. D. 4431
T. D. 4432

PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO

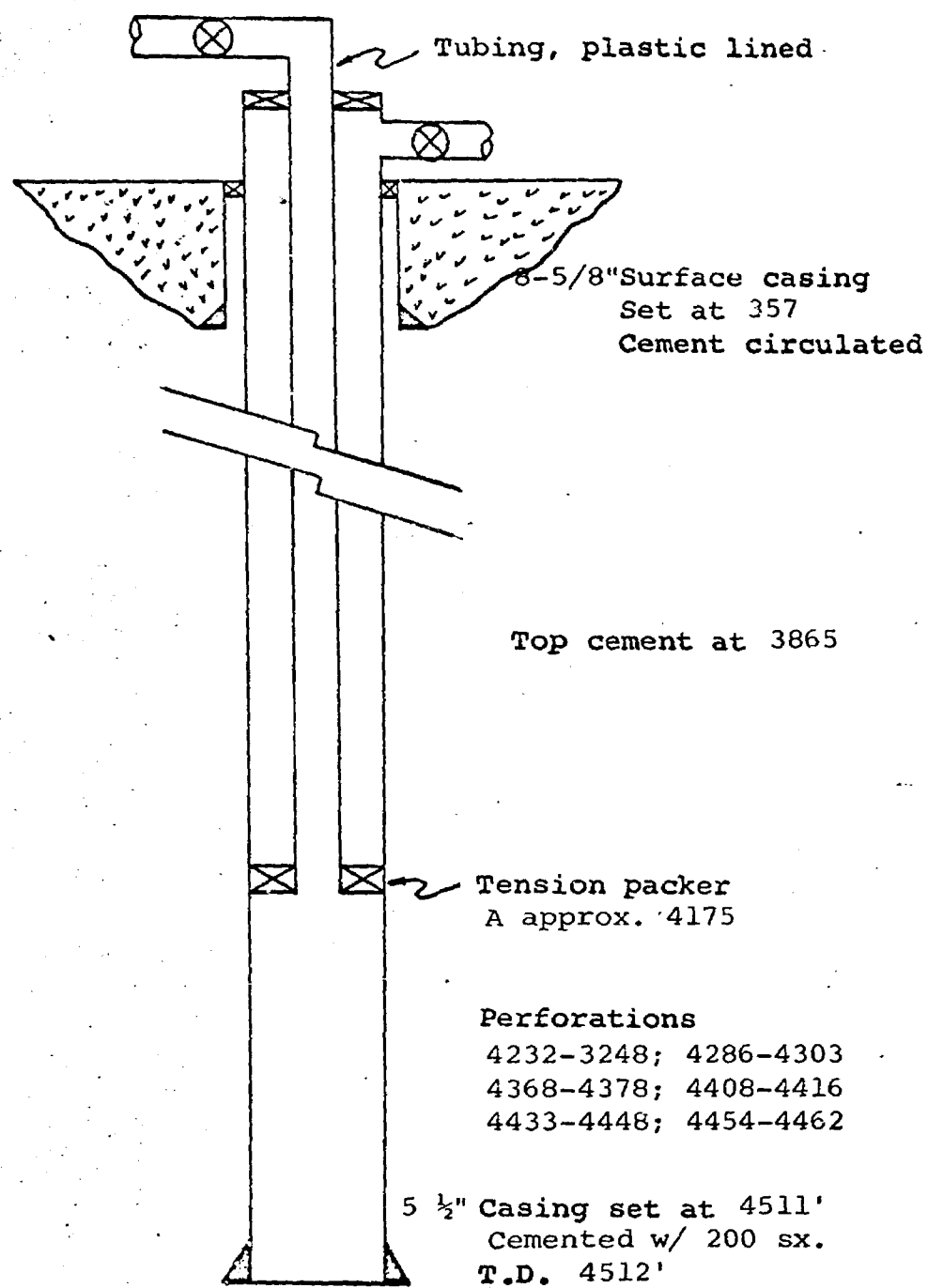
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 330' FN&WL, Sec. 28, T-17-S, R-33-E

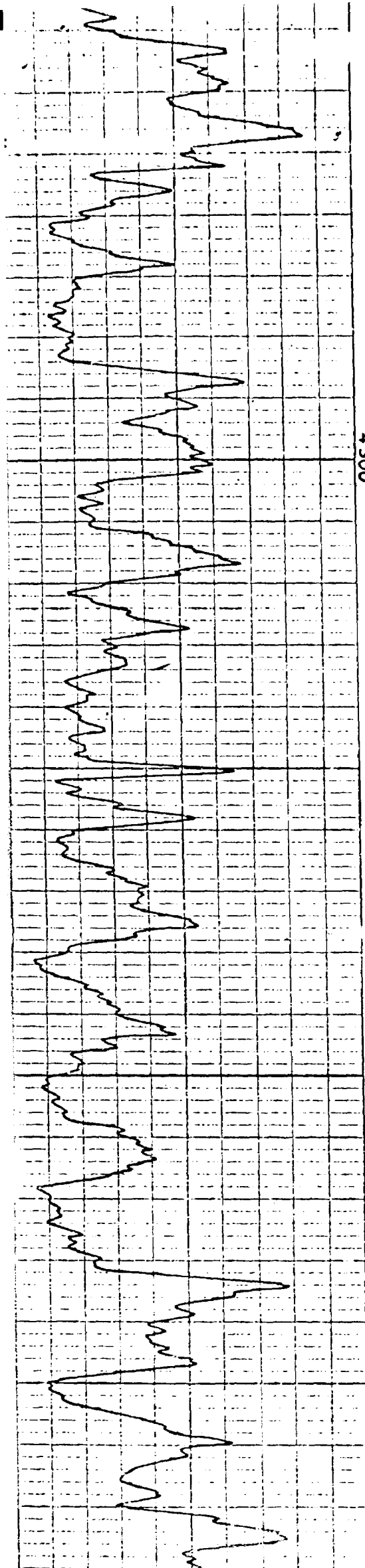




PENNZOIL COMPANY
WATER INJECTION WELL SCHEMATIC
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

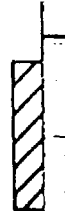
Phillips State No. 6
1980' FWL, 2310' FNL, Sec. 28, T-17-S, R-33-E





4300

4400



4232-48



4286-4303



4368-78



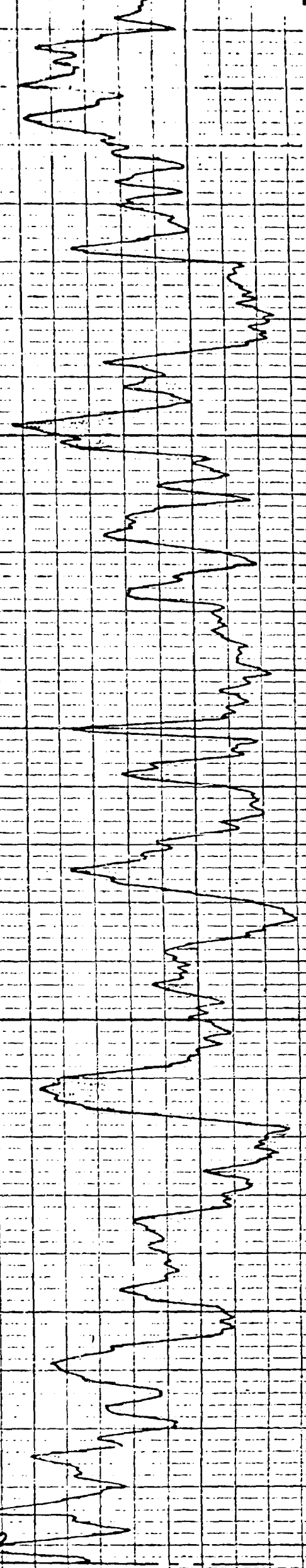
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4433-48



4454-62



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418
1309

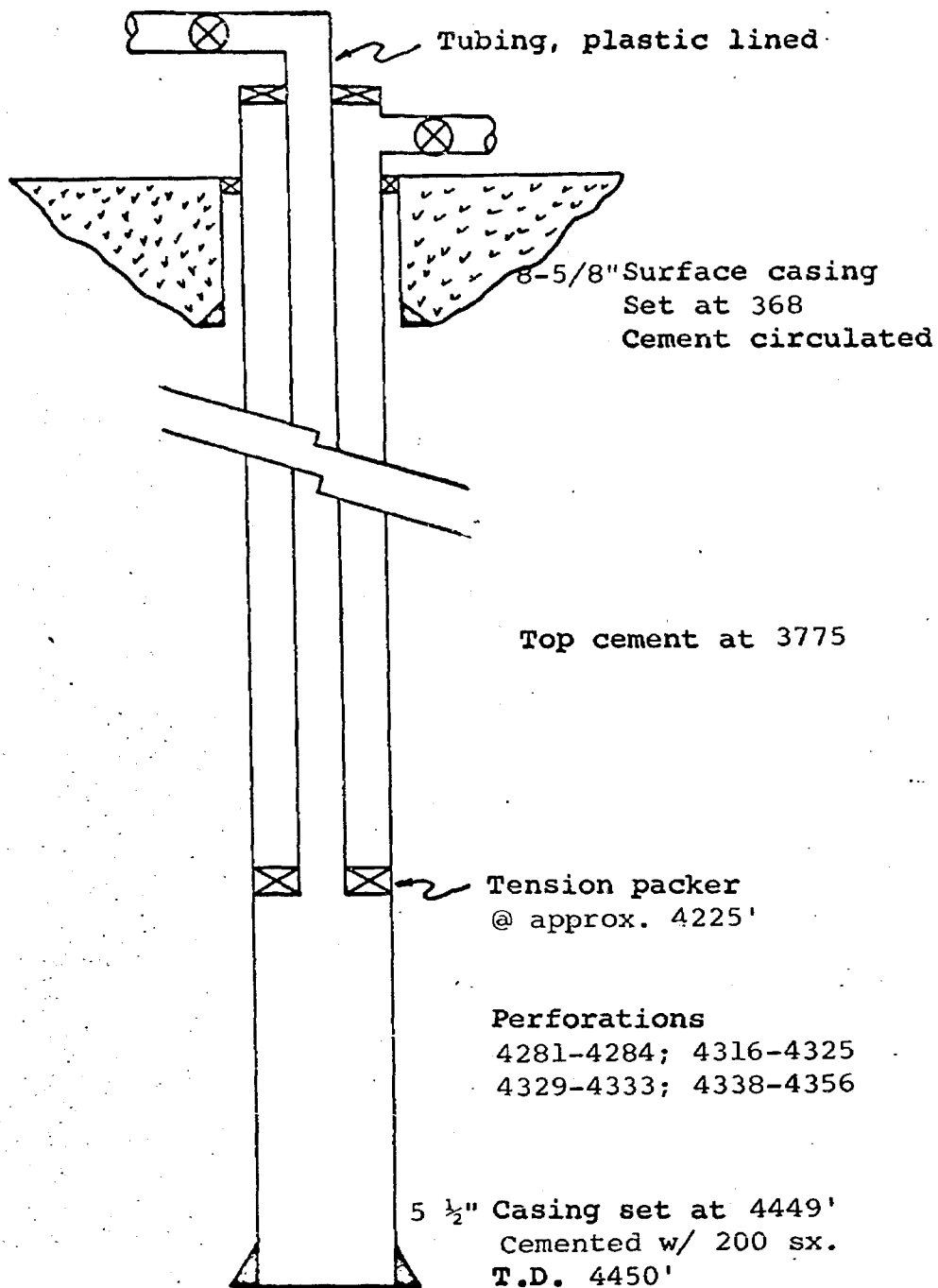
R. D. 4481 Pennzoil Co Phillips State No 6

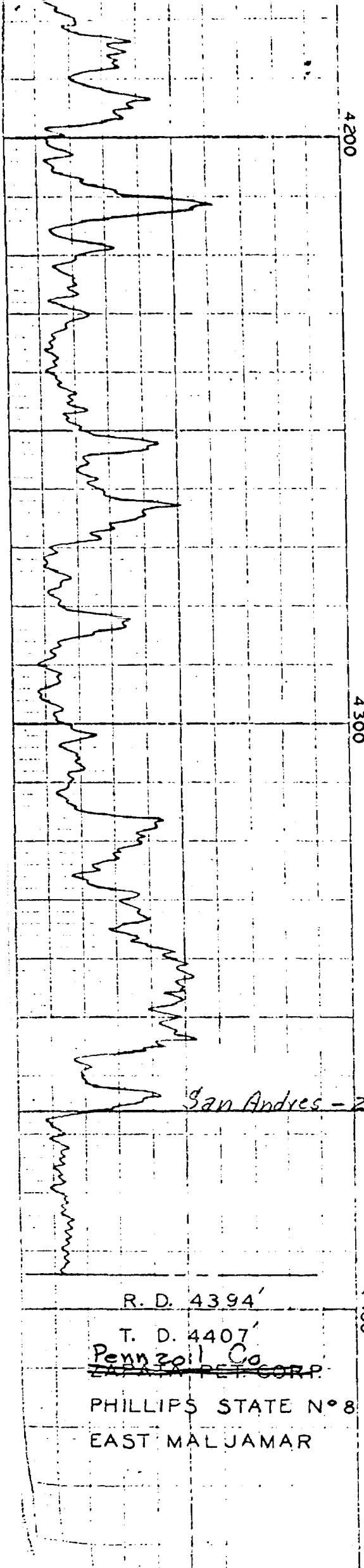
T. D. 4494 TOP SAN ANDREAS - 309

~~ZAPATA PET CORP.~~

R. D. 4493

PENNZOIL COMPANY
WATER INJECTION WELL SCHEMATIC
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO
Phillips State No. 8
660' FSL, 1980' FWL, Sec. 28, T-17-S, R-33-E





4200

4300

San Andres - 241

R. D. 4394'

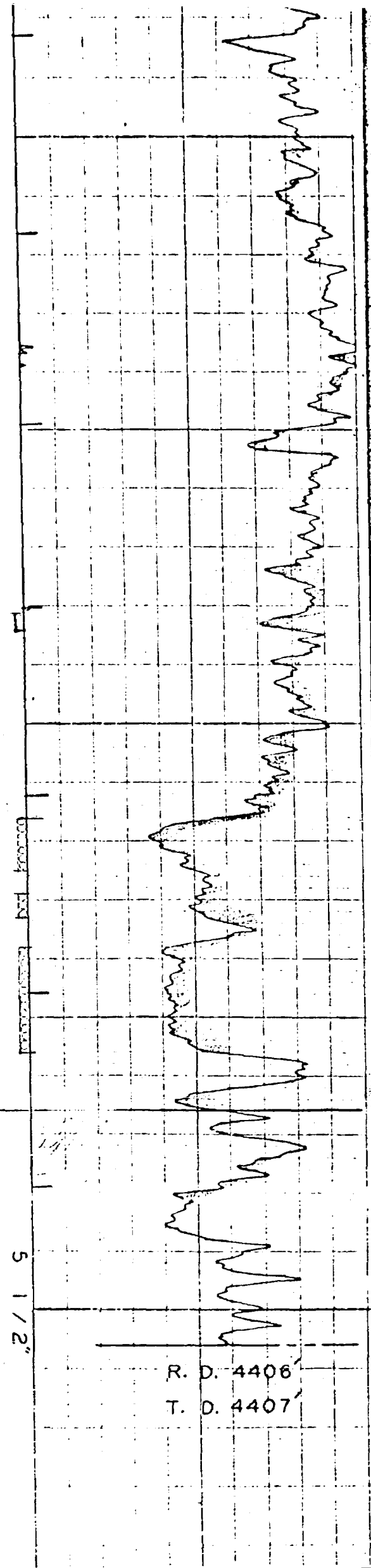
T. D. 4407'

~~Pennzoil Co~~
~~ZAPATA PET. CORP.~~

PHILLIPS STATE N° 8

EAST MALJAMAR

4400

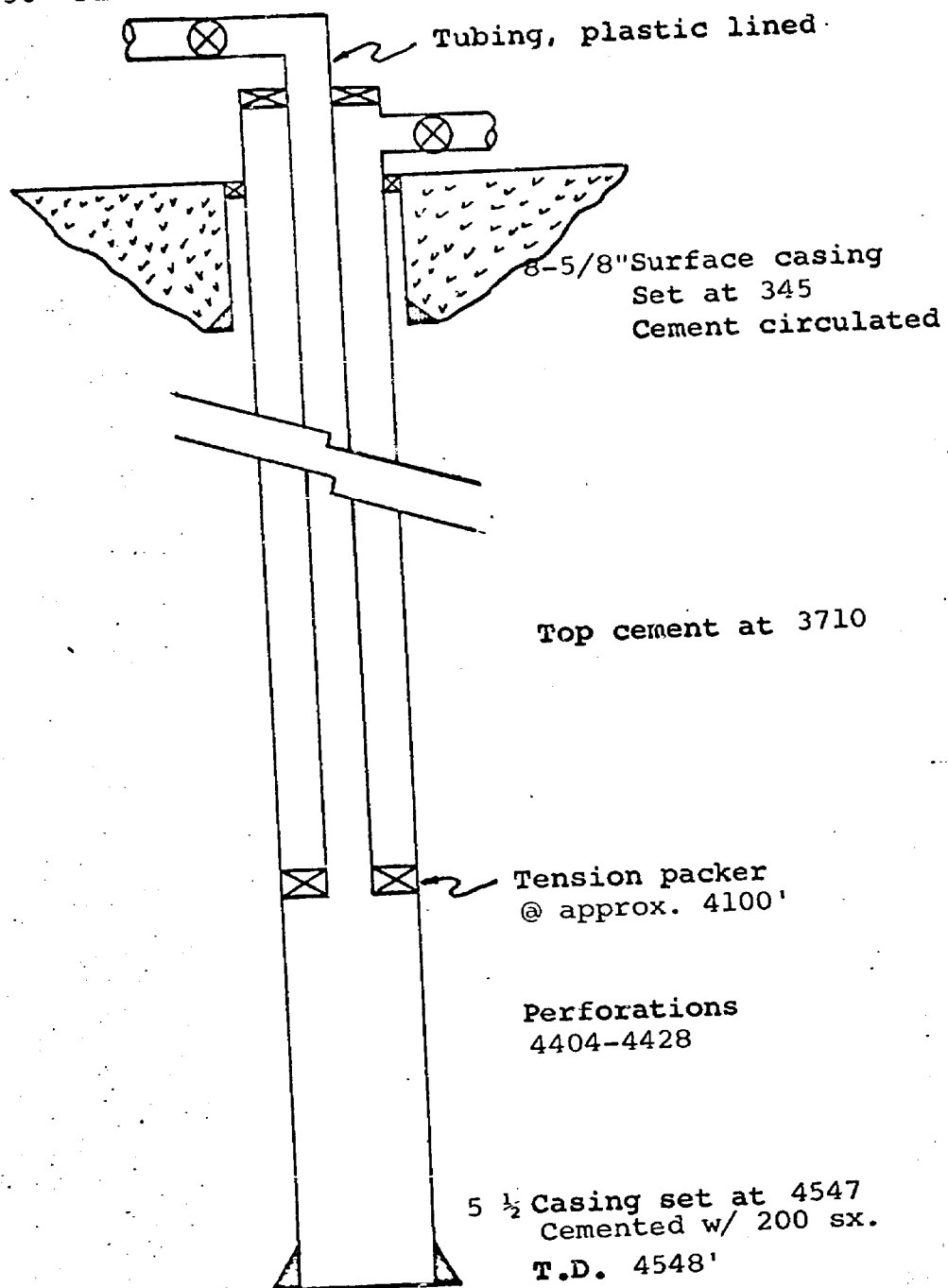


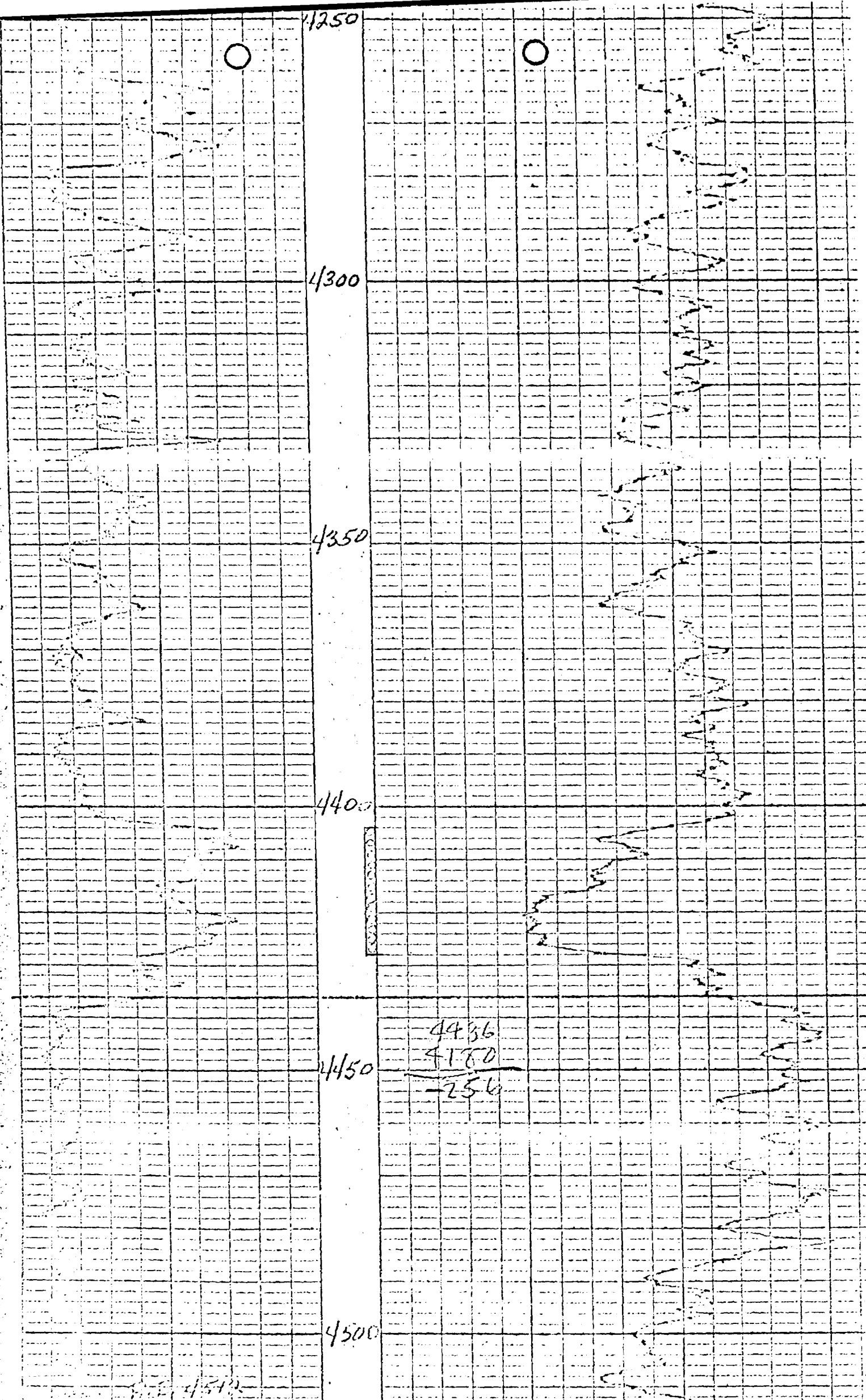
5 1/2"

R. D. 4406'

T. D. 4407'

PENNZOIL COMPANY
WATER INJECTION WELL SCHEMATIC
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO
Phillips State No. 10
1650' FE&SL, Sec. 28, T-17-S, R-33-E





4250

4300

4350

4400

4450

4500

O.P.D.

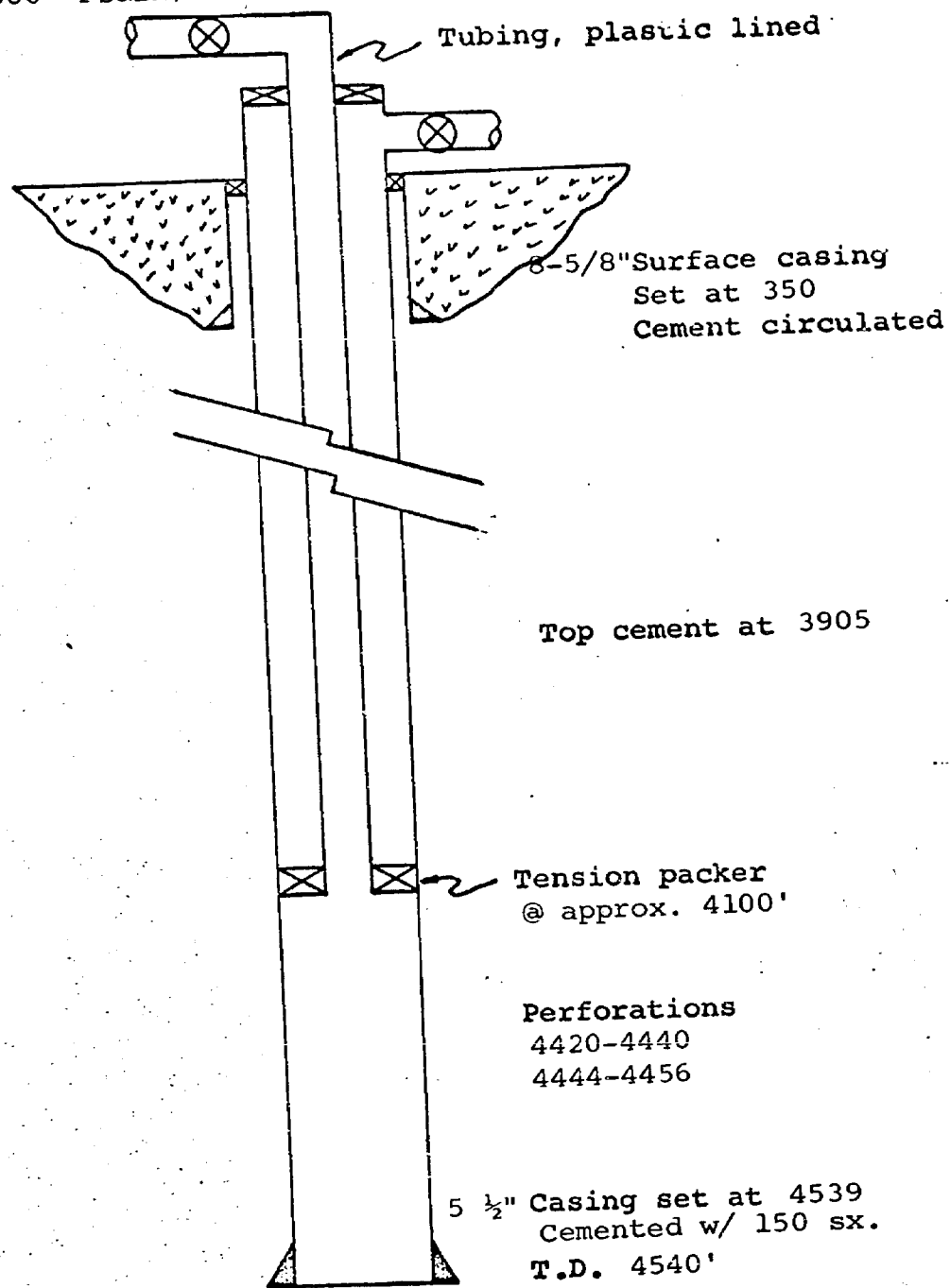
30 R.M.

Pennzoil Co. Phillips State No. 10

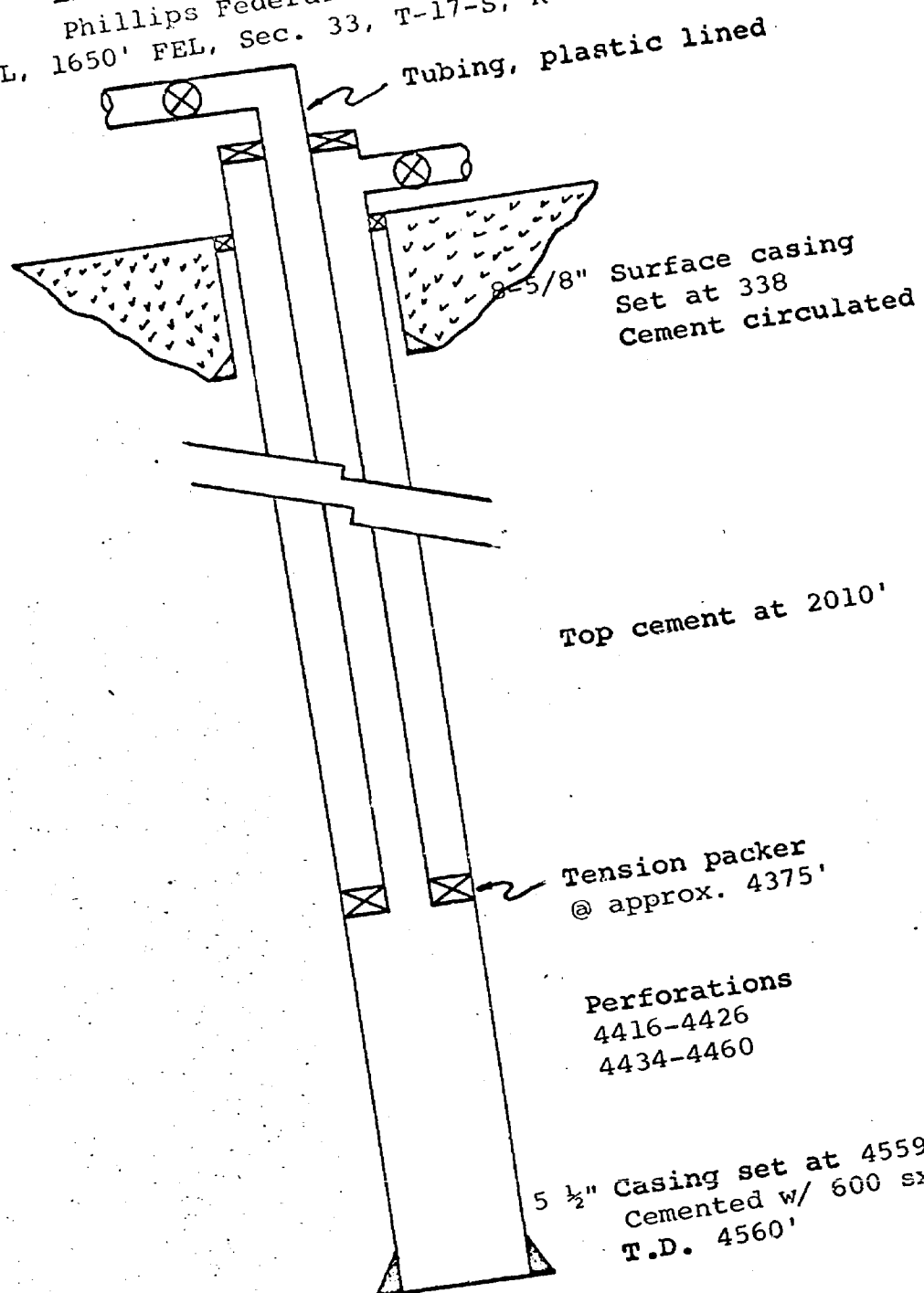
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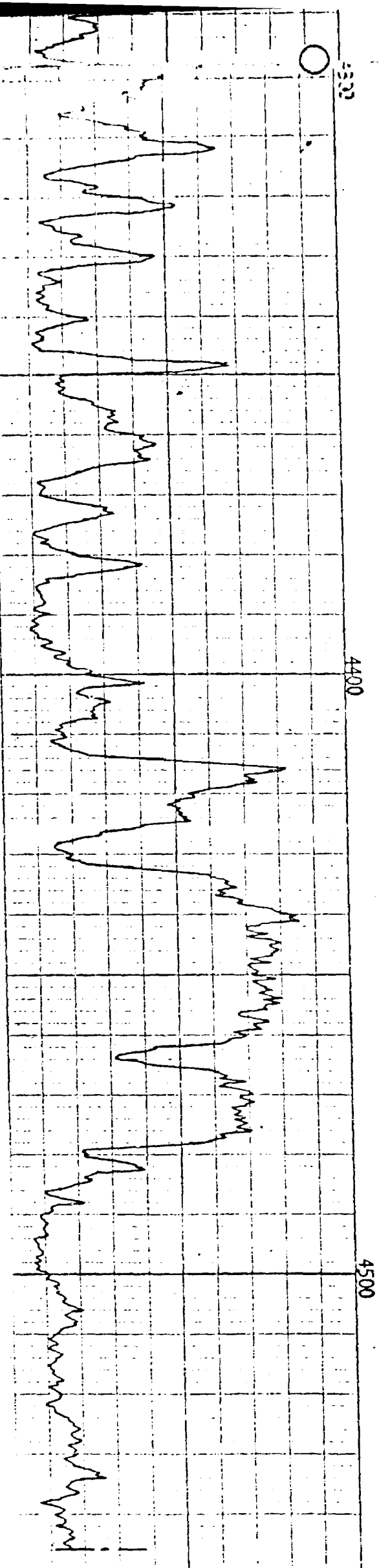
PENNZOIL COMPANY
WATER INJECTION WELL SCHEMATIC
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

Phillips State No. 13
660' FS&EL, Sec. 28, T-17-S, R-33-E

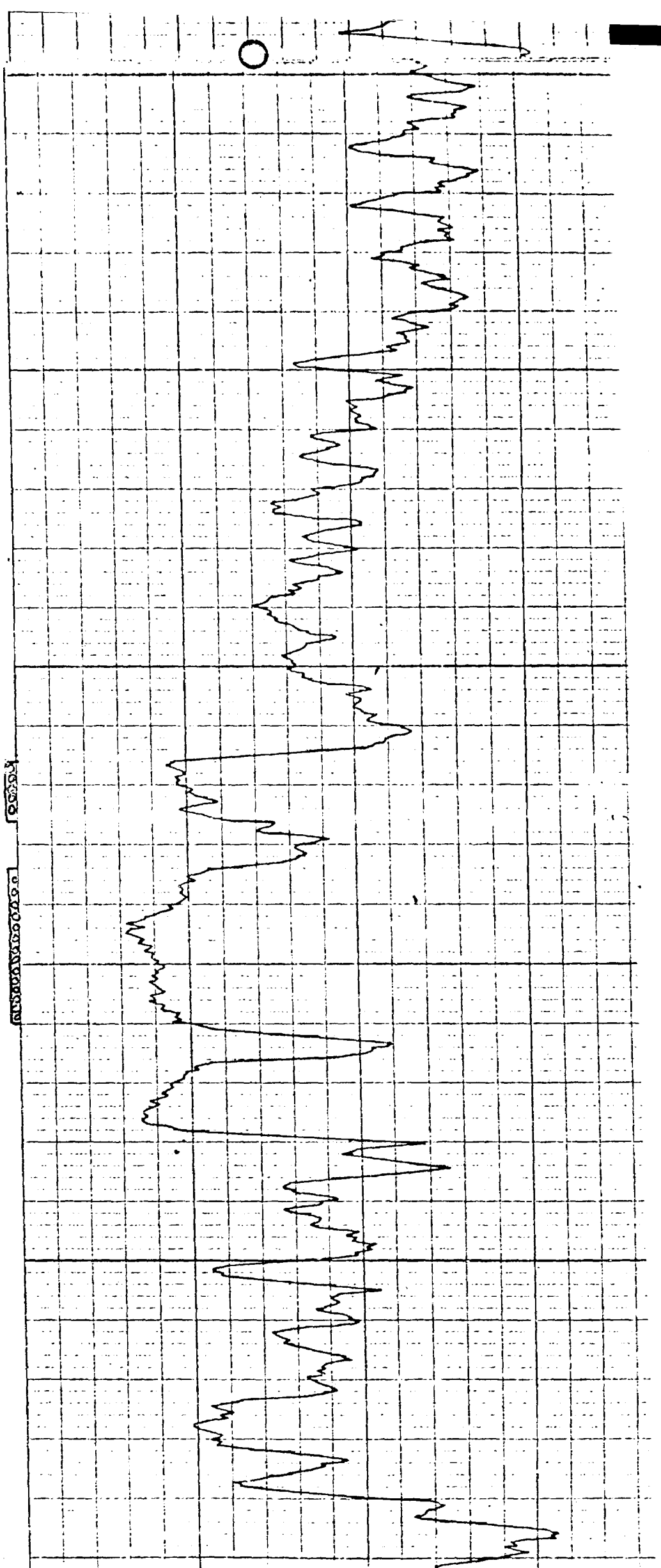


PENNZOIL COMPANY
 WATER INJECTION WELL SCHEMATIC
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO
 Phillips Federal No. 2Y
 330' FNL, 1650' FEL, Sec. 33, T-17-S, R-33-E





Pennzoil Co
 R.D. 4546
 T.D. 4550



5 1/2" Phillips Federal 2-Y
 R.D. 4558

PENNZOIL COMPANY
Production Data
Phillips Federal Lease
Maljamar Field
Lea County, New Mexico

30B
854
10
25

<u>1957</u>		
<u>Month</u>	<u>BOPM</u>	
Dec.	853	853
<u>1958</u>		
Jan.	1717	
Feb.	2486	
March	2166	
April	1908	
May	1392	
June	1893	
July	1672	
Aug.	1723	
Sept.	1347	
Oct.	1394	
Nov.	1481	
Dec.	1490	21,512
<u>1959</u>		
Jan.	1358	
Feb.	1136	
March	1271	
April	1056	
May	1089	
June	1026	
July	1044	
Aug.	1072	
Sept.	899	
Oct.	1027	
Nov.	893	
Dec.	907	34,300
<u>1960</u>		
Jan.	908	
Feb.	836	
March	866	
April	736	
May	826	
June	750	
July	816	
Aug.	817	
Sept.	764	
Oct.	811	
Nov.	753	
Dec.	630	43,813

<u>1961</u>		
<u>Month</u>	<u>BOPM</u>	
Jan.	831	
Feb.	767	
March	854	
April	826	
May	811	
June	736	
July	731	
Aug.	733	
Sept.	708	
Oct.	651	
Nov.	659	
Dec.	650	52,770

<u>1962</u>		
Jan.	631	
Feb.	567	
March	610	
April	602	
May	588	
June	507	
July	556	
Aug.	625	
Sept.	551	
Oct.	527	
Nov.	478	
Dec.	534	59,546

<u>1963</u>		
Jan.	485	
Feb.	457	
March	517	
April	407	
May	502	
June	460	
July	463	
Aug.	459	
Sept.	413	
Oct.	452	
Nov.	447	
Dec.	446	65,054

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

EXHIBIT NO. 302

CASE NO. 3454

Page No. 2
Production Data
Phillips Federal Lease

1964

<u>Month</u>	<u>BOPM</u>	
Jan.	423	
Feb.	434	
March	445	
April	446	
May	435	
June	417	
July	410	
Aug.	409	
Sept.	403	
Oct.	412	
Nov.	414	
Dec.	353	70,055

1965

Jan.	415	
Feb.	376	
March	400	
April	268	
May	294	
June	383	
July	338	
Aug.	404	
Sept.	431	
Oct.	434	
Nov.	401	
Dec.	432	74,631

1966

Jan.	477	
Feb.	422	
March	403	
April	384	
May	416	
June	309	77,042

103
12-10-84

PENNZOIL COMPANY
Production Data
Phillips State Lease
Maljamar Field
Lea County, New Mexico

1957

<u>Month</u>	<u>BOPM</u>
Dec.	2853

Total	2853
-------	------

1958

Jan.	5764
Feb.	7138
March	6132
April	6366
May	7263
June	5990
July	5676
Aug.	5293
Sept.	4874
Oct.	4653
Nov.	4673
Dec.	4389
	71,064

1959

Jan.	4239
Feb.	3712
March	3765
April	3409
May	3611
June	3500
July	3491
Aug.	3412
Sept.	3080
Oct.	3120
Nov.	2985
Dec.	3044
	112,432

1960

Jan.	3059
Feb.	2855
March	2797
April	3008
May	2939
June	2530
July	2574
Aug.	2416
Sept.	2356
Oct.	2679
Nov.	2414
Dec.	2086
	144,145

1961

<u>Month</u>	<u>BOPM</u>
Jan.	2773
Feb.	2140
March	2456
April	2163
May	2255
June	2013
July	2092
Aug.	1976
Sept.	1968
Oct.	2018
Nov.	1990
Dec.	1963
	170,014

1962

Jan.	1984
Feb.	1686
March	1956
April	1639
May	1834
June	1671
July	1627
Aug.	1598
Sept.	1478
Oct.	1518
Nov.	1565
Dec.	1625
	190,201

1963

Jan.	1611
Feb.	1398
March	1503
April	1460
May	1401
June	1574
July	1654
Aug.	1466
Sept.	1472
Oct.	1393
Nov.	1295
Dec.	1287
	207,715

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	3457
CASE NO.	3457

Page No. 2
Production Data
Phillips State Lease

1964

<u>Month</u>	<u>BOPM</u>	
Jan.	1337	
Feb.	1178	
March	1375	
April	1370	
May	1193	
June	1129	
July	1291	
Aug.	1251	
Sept.	1205	
Oct.	1183	
Nov.	1205	
Dec.	1327	222,759

1965

Jan.	1327	
Feb.	1143	
March	1198	
April	1180	
May	1033	
June	1129	
July	1053	
Aug.	1155	
Sept.	1217	
Oct.	1250	
Nov.	1174	
Dec.	1192	236,810

1966

Jan.	1116	
Feb.	980	
March	1327	
April	1150	
May	1025	
June	946	

Cumulative Production 7-1-66	243,354
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PENNZOIL COMPANY

Production Tests

PHILLIPS STATE LEASE
Maljamar Field
Lea County, New Mexico

WELL NO.	DATE	STATUS	HRS.	BO	BW	GOR
1	8-20-66	Pumping	24	7.16	3.06	462
2	8-21-66	Pumping	24	1.14	0.20	2036
3	7-23-66	Pumping	24	1.14	0.20	2498
4	7-25-66	Pumping	24	4.57	2.24	623
5	8-24-66	Pumping	24	1.14	0.20	2900
6	8-25-66	Pumping	24	2.27	0.20	715
7		Shut-In				
8	7-27-66	Pumping	24	12.90	8.59	256
9y	7-28-66	Pumping	24	8.31	1.46	216
10		Shut-In				
11		Shut-In				
12	7-30-66	Pumping	24	2.28	0.20	1018
13	7-29-66	Pumping	24	3.75	15.47	759

3.43

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
<i>Aggel</i>	EXHIBIT NO. <i>5-a</i>
CASE NO.	<i>3439</i>

PERINZOIL COMPANY

Production Tests

PHILLIPS FEDERAL LEASE
Maljamar Field
Lea County, New Mexico

WELL NO.	DATE	STATUS	HRS.	BO	BW	GOR
1	5-13-66	Pumping	24	6.82	6.79	340
2y	5-13-66	Pumping	24	5.11	6.88	160
* 3		Pumping				

* Well #3 (Corbin Queen)

*1/2 Bopud
2 5/8" w/d.*

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
App. EXHIBIT NO. 5-6
CASE NO. 8459



RECEIVED
AUG 4 1966
PENNZOIL

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 1157
Hobbs, New Mexico 88240

IN REPLY REFER TO:

WAH	
WEG	
KRH	
CAB	
HPG	
LET	
SH	
GK	
MM	
FMCE	
ISJ	
Asst.	
File	

August 3, 1966

Pennzoil Company
1007 Midland Savings Building
Midland, Texas 79704

Attention: Mr. Kenneth R. Huddleston

Gentlemen:

Your letter of July 26 requests approval to institute a waterflood of the Grayburg-San Andres formation in the N $\frac{1}{2}$ NE $\frac{1}{4}$ and the SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 33, T. 17 S., R. 33 E., Lea County, New Mexico, lease Las Cruces 060967. Waterflood operations are to be on a lease basis with cooperation along lease lines in the selection and operation of injection wells.

The plan you propose for waterflooding the Grayburg-San Andres formation on lease Las Cruces 060967 is satisfactory to this office.

Appropriate notices to convert existing wells to water injection should be submitted for approval prior to commencing the work. Duplicate copies of a monthly progress report should be submitted showing the volume of water injected and average pressures for each injection well and monthly oil and water production for the producing wells in the project area.

Approval of the project by the New Mexico Oil Conservation Commission pursuant to Rule 701 is required.

Sincerely yours,

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. <u>6</u>
CASE NO. <u>3429</u>

Arthur R. Brown
Arthur R. Brown
District Engineer

DOUBLE EAGLE CORPORATION OF NEW MEXICO

(N. S. L.)

P. O. BOX 1586
ROSWELL, N. MEX. 88201



100 So. KENTUCKY
PHONE
623-2277

September 5, 1966

Mr. Ken Huddelston
Pennzoil Company
706 First National Bank Building
Midland, Texas 79701

WAH	
WEG	
KRH	
CAB	
HPG	
LPT	
JWH	
SH	
GK	
MM	
FMCB	
RJ	
Acct	
File	

Re: Proposed Waterflood
Sec. 28, T17S, R33E
Lea County, New Mexico

Dear Sir:

Confirming our telephone conversation of August 26 concerning the above, please be advised that the Double Eagle System in that area can adequately furnish estimated 3300 BWPB which will be required by your plant and delivered to your plant site at \$.0275 per barrel.

As soon as possible I will forward for your examination our standard form contract which will be similar to the previous one accomplished by the Caprock Water Company and Zapata Petroleum Corporation.

Yours very truly,

DOUBLE EAGLE CORPORATION OF NEW MEXICO

J. T. Howard
Manager

JTH/eh

RECEIVED
SEP 7 1966

PENNZOIL

BEFORE EXAMINER UTZ

CIL CONSERVATION COMMISSION

Exhibit NO. 7

CASE NO. 3459

PENNZOIL COMPANY
Primary & Waterflood Reserves
Phillips State Lease
Maljamar Field
Lea County, New Mexico

Cumulative Production - 7-1-66	243,354 BO
Remaining Primary Reserves	52,556 BO
Ultimate Primary Reserves	295,910 BO
Water Flood Reserves = 100% X Ultimate Primary =	
	295,910 BO

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
<i>Appl</i>	EXHIBIT NO. <i>8-a</i>
CASE NO.	<i>3454</i>

PENNZOIL COMPANY
Primary & Waterflood Reserves
Phillips Federal Lease
Maljamar Field
Lea County, New Mexico

Cumulative Production - 7-1-66	77,042 BO
Remaining Primary Reserves	26,789 BO
Ultimate Primary Reserves	103,831 BO
Water Flood Reserves = 100% X Ultimate Primary =	
	103,831 BO

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
<i>Appl</i>	EXHIBIT NO. <i>8-l</i>
CASE NO.	<i>3459</i>