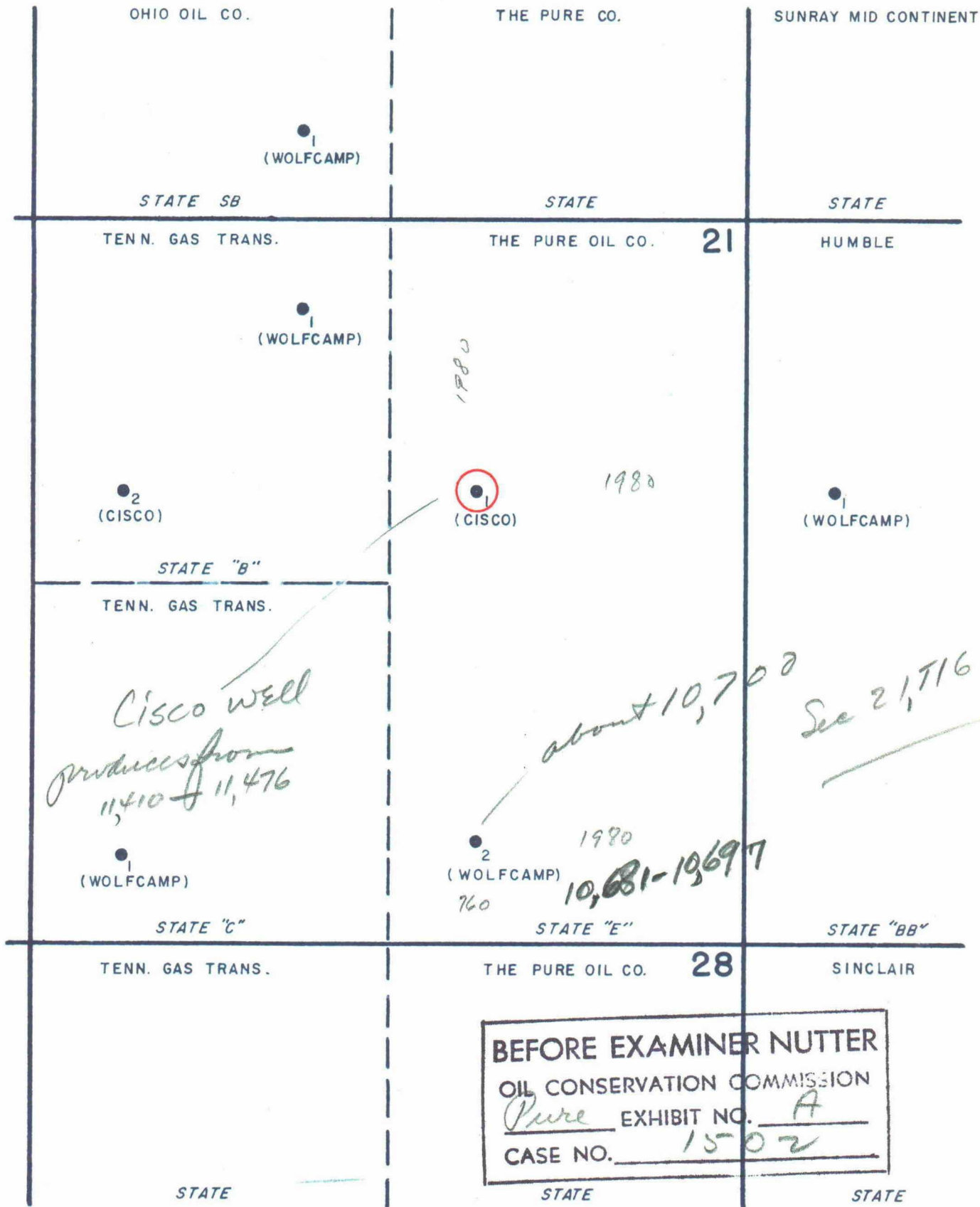


THE PURE OIL COMPANY—PROCESS CALCULATION SHEET

**EXHIBIT "A"**

Scale 1" = 1000'

Subject PURE STATE - LEA "E" *1
SALT WATER DISPOSAL HEARING

Date 9-10-58

Page

File No.

By

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

APPLICATION
TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION
NOT PRODUCTIVE OF OIL OR GAS

POOL Name Kemnitz - Cisco County Lea
Operator The Pure Oil Company
Address P. O. Box 2107, Fort Worth 1, Texas
Lease Name State-Lea "E" Well No. 1
Depth to top of injection zone 4527'
Depth to base of injection zone 9460'
Size of surface casing 11-3/4" O.D. Length of surface casing 383'
Number of sacks of cement used on surface casing 650 sacks (Cemented to surface)
Size of intermediate casing 8-5/8" O.D. Length of intermediate casing 4527'
Number of sacks of cement used on intermediate casing 2000 sacks (Cemented to surface)
Size of long string 5-1/2" O.D. Length of long string 11,571'
Number of sacks of cement used on long string 400 sacks
Size of tubing 2-3/8" O.D. Length of tubing 11,322'
Depth of tubing packer setting 11,252'
Name and model of packer T.I.W.
Is injection through tubing or long string or annulus? 8-5/8" and 5-1/2" Annulus
Is injection through perforations or open hole? Open hole
Was the well drilled for salt water disposal purposes? No
List perforated intervals and number of sacks of cement used on any squeeze cementing operations 11,410'-11,430' and 11,446'-11,476' None squeezed
What is depth of the shallowest zone productive of oil or gas in this Pool 10,000'
What is depth of the deepest zone containing fresh water in this Pool? 370'
Are there any other salt water disposal wells in this Pool using this same zone for injection purposes? No If so, list operator, lease and well number

What is the approximate volume of salt water to be injected daily? 300 bbls.
Will system be open or closed type? Semi-closed
Will injection be by gravity or pump pressure? Pump pressure
If by pump pressure, give approximate number of pounds per square inch 2,000 psi
Will it be necessary for water to be filtered or chemically treated? No
Is this well so cased and completed that water can enter no other formation than the above setout injection zone? Yes

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 1802

EXHIBIT "B"

1. Attach a complete full-scale electrical log of this well (one Copy to OCC only.)
2. List names and addresses of all offset operators and surface owners.

Humble Oil & Refining Co., P. O. Box 1600, Midland, Texas; Tennessee Gas Transmission Company, P. O. Box 1031, Midland, Texas; The Ohio Oil Company, P. O. Box 552, Midland, Texas; Sunray Mid Continent Oil Co., Wilco Building, Midland, Texas; Sinclair Oil & Gas Co., P. O. Box 1470, Midland, Texas; Mr. J. B. Clayton, P. O. Box 537, Lovington, NM

3. Have notices of this application been sent by registered mail or given to all offset operators, surface owners and to the N. M. State Engineer? Yes
4. Attach waivers from all offset operators.
5. Attach waivers from surface owners of land on which well is located or a letter from company making application to the surface owner explaining said application and requesting waiver.
6. No application will be processed until Item 1 has been attached to the application. Should all necessary waivers not accompany application, the Commission shall hold such application for a period of fifteen (15) days from date of receipt in the Santa Fe Office. If, after said fifteen (15) day period, no protest or request for hearing is received in the Santa Fe Office, the application will then be processed.

The Pure Oil Company
Operator

By Harry C. Wells
Harry C. Wells

THE STATE OF Texas

COUNTY OF Tarrant

BEFORE ME, The undersigned authority, on this day personally appeared Harry C. Wells known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein and that said report is true and correct.

SUBSCRIBED AND SWORN TO before me, this the 12th day of August, 19 58.

John L. Suttle
Notary Public in and for Tarrant
County, Texas

EXHIBIT "B"

Pure State Lea "E" #2
Drill Stem Test 10,784' to 10,813'
Water Analysis

Chloride	51,800	parts	per	million
Sulfate	665	"	"	"
Bicarbonate	610	"	"	"
Calcium	3,160	"	"	"
Magnesium	510	"	"	"
Iron	<u>50</u>	"	"	"
Total Solids	56,795	"	"	"
Specific Gravity	1.0625			

EXHIBIT "C"

TO WHOM IT MAY CONCERN:

This is to certify that I, George E. Fish, a geologist of The Pure Oil Company, personally made a study of the area in the vicinity of The Pure Oil Company's State-Lea "E" well No. 1, located in Section 21, T-16-S, R-34-E, Lea County, New Mexico, and have determined that there is no production within a two mile radius occurring from formations included in the proposed interval (4527' to 9450') for disposing of salt water on the Pure State-Lea "E" Lease.

The above proposed interval for disposing of salt water is below the base of the Triassic formation which occurs at a depth of 1573 feet in the Pure #1 State-Lea "E".

SIGNED

George E. Fish

DATED

September 8, 1958

THE STATE OF TEXAS

COUNTY OF TARRANT

BEFORE ME, the undersigned authority, on this day personally appeared GEORGE E. FISH known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein and that said report is true and correct.

George E. Fish

SUBSCRIBED AND SWORN TO before me, this the 8th day of September, 1958.

Rufus M. Perdue RUFUS M. PERDUE
Notary Public in and for Tarrant
County, Texas

BEFORE EXAMINER NUTTER	
Oil CONSERVATION COMMISSION	
<u>Perdue</u>	EXHIBIT NO. <u>D</u>
CASE NO. <u>1502</u>	

EXHIBIT "D"

Shell Williams Unit #1
Drill Stem Test 5786' to 5878'
Water Analysis

Calcium 1,710 parts per million
Magnesium 382 parts per million
Bicarbonate 793 parts per million
Sodium 34,800 parts per million
Sulfate 3,367 parts per million
Chloride 54,849 parts per million
Total Solids 95,901 parts per million

Specific Gravity 1.065 @ 20° Centigrade

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Shue EXHIBIT NO. E
CASE NO. 1507

EXHIBIT "E"

August 12, 1958

The Pure Oil Company
P. O. Box 2107
Fort Worth 1, Texas

Gentlemen:

As lessees of adjoining acreage to The Pure Oil Company's State-Lea "E" Lease located in Section 21, T-16-S, R-34-E, Lea County, New Mexico, we have no objection to your proposal to dispose of salt water into Pure's State-Lea "E" No. 1 over the interval from 4527' to 9450'.

Tennessee Gas Transmission Co.

By: *J. J. Jones*

Date: Aug. 13, 1958

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<u>CA</u>	EXHIBIT NO. <u>7</u>
CASE NO.	<u>1507</u>

EXHIBIT "F"

August 12, 1958

The Pure Oil Company
P. O. Box 2107
Fort Worth 1, Texas

Gentlemen:

As lessees of adjoining acreage to The Pure Oil Company's State-Lea "E" Lease located in Section 21, T-16-S, R-34-E, Lea County, New Mexico, we have no objection to your proposal to dispose of salt water into Pure's State-Lea "E" No. 1 over the interval from 4527' to 9450'.

The Ohio Oil Company

By: *Car. Mills*

Date: 8-14-58

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<i>Car</i>	EXHIBIT NO. <u>4</u>
CASE NO.	<u>2007</u>

EXHIBIT "G"

August 12, 1958

The Pure Oil Company
P. O. Box 2107
Fort Worth 1, Texas

Gentlemen:

As lessees of adjoining acreage to The Pure Oil Company's State-Lea "E" Lease located in Section 21, T-16-S, R-34-E, Lea County, New Mexico, we have no objection to your proposal to dispose of salt water into Pure's State-Lea "E" No. 1 over the interval from 4527' to 9450'.

Sunray Mid-Continent Oil Co.

By:

E. J. Paine

Date: 8-18-58

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<u>Lee</u>	EXHIBIT NO. <u>14</u>
CASE NO. <u>1887</u>	

EXHIBIT "H"

August 12, 1958

The Pure Oil Company
P. O. Box 2107
Fort Worth 1, Texas

Gentlemen:

As lessees of adjoining acreage to The Pure Oil Company's State-Lea "E" Lease located in Section 21, T-16-S, R-34-E, Lea County, New Mexico, we have no objection to your proposal to dispose of salt water into Pure's State-Lea "E" No. 1 over the interval from 4527' to 9450'.

Humble Oil & Refining Co.

By J. Holmesly
RWS

Date: 9-8-58

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Pure EXHIBIT NO. 1
CASE NO. 1502

EXHIBIT "1"

August 12, 1958

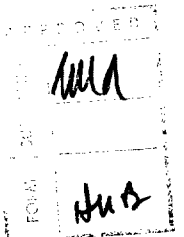
The Pure Oil Company
P. O. Box 2107
Fort Worth 1, Texas

Gentlemen:

As lessees of adjoining acreage to The Pure Oil Company's State-Lea "E" Lease located in Section 21, T-16-S, R-34-E, Lea County, New Mexico, we have no objection to your proposal to dispose of salt water into Pure's State-Lea "E" No. 1 over the interval from 4527' to 9450'.

Sinclair Oil & Gas Company

By: *[Signature]*



Date: August 22, 1958

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<u>Pure</u>	EXHIBIT NO. <u>J</u>
CASE NO.	<u>1502</u>

EXHIBIT "J"

August 12, 1958

The Pure Oil Company
P. O. Box 2107
Fort Worth 1, Texas

Gentlemen:

As surface owner on The Pure Oil Company's State-Lea "E" Lease located in Section 21, T-16-S, R-34-E, Lea County, New Mexico, I have no objection to your proposal to dispose of salt water into Pure's State-Lea "E" No. 1 over the interval from 4527' to 9450'.

SIGNED

J. B. Clayton

DATE 8 - 18 - 58

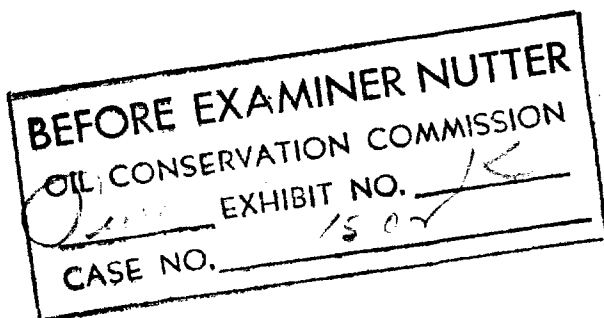


EXHIBIT "K"

State Lea E #1

Casing Cement Affidavit

To whom it may concern: This is to certify that I, A. J. Littlejohn, employee of the Pure Oil Co., personally supervised the setting of casing and cementing of same in the Pure Oil Co. State Lea E #1 located in the Kemnitz Cisco Field, Lea County, New Mexico.

Surface casing in this well consists of 11 3/4 casing set @ 383' and cemented with 650 sacks cement. This cement circulated to surface.

Intermediate casing in this well consists of 8 5/8 casing set @ 4527 and cemented with 2000 sacks cement. This cement circulated to surface.

Oil string in this well consists of 5 1/2" casing set @ 11571 cemented with 400 sacks cement. Top of cement outside of 5 1/2" casing @ 9400 as determined by temperature survey.

Signed *A. J. Littlejohn*

Date Sept. 7, 1958

This is to certify that I, Pauline Garza, have this day, Sept. 7, 1958, set my hand and seal to the above.

Notary Public in and for Lea County, N. M.

Pauline Garza
My commission expires Feb. , 1960

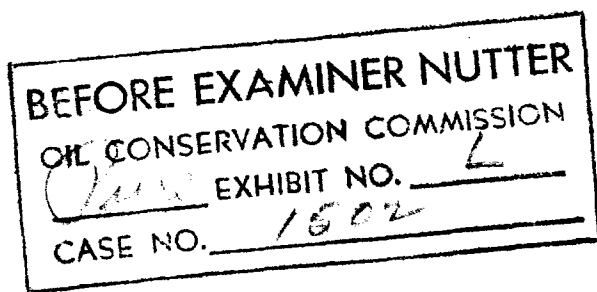


EXHIBIT "L"

Case No.

1502

Large Exhibits

SCHLUMBERGER WELL SURVEYING CORPORATION

HOUSTON, TEXAS



Induction-Electrical Log

COUNTY <u>Lea</u> FIELD or LOCATION <u>Kennitz Wolfcamp</u> WELL <u>State Lea E #1</u> COMPANY <u>Pure Oil Co.</u>	COMPANY <u>PURE OIL CO.</u>	Other Surveys ML
	WELL <u>STATE LEA E #1</u>	Location of Well <u>1980' f N&E/L</u>
	FIELD <u>KEMNITZ-WOLFCAMP</u>	<i>Ind. Log</i>
	LOCATION <u>SEC. 21-16S-34E</u>	Elevation: D.F.: <u>4118</u> K.B.: <u>4119</u> SCF: <u>4107</u>
	COUNTY <u>LEA</u>	FILING No. _____
	STATE <u>NEW MEXICO</u>	

RUN No.	1	2			
Date	9-26-57	10-20-57			
First Reading	10798	11580			
Last Reading	4528	10798			
Feet Measured	6270	782			
Csg. Schlum.	4528	4528			
Csg. Driller	4527	4527			
Depth Reached	10804	11586			
Bottom Driller	10796	11581			
Depth Datum	SCF 11' Below RT				
Mud Nat.	Chem.	Chem.			
Dens. Visc.	9.1 40	12.9 58			
Mud Resist.	96 @ 83 °F	2.4 @ 58 °F	@ °F	@ °F	@ °F
" Res. BHT	55 @ 146 °F	1.0 @ 145 °F	@ °F	@ °F	@ °F
Rmf	49 @ 146 °F	1.75 @ 58 °F	@ °F	@ °F	@ °F
Rmc	@ °F	@ °F	@ °F	@ °F	@ °F
" pH	8 @ °F	8 @ °F	@ °F	@ °F	@ °F
" Wtr. Loss	10 CC 30 min.	8 CC 30 min.	CC 30 min.	CC 30 min.	CC 30 min.
Bit Size	7 7/8" to 10694; 7 3/4" to TD - 7 3/4"				
Spcgs.—AM	16" Nor.	16"			
IND.	40"	40"			
Opr. Rig Time	3 Hrs.	2 Hrs.			
Truck No.	1759-Hobbs	1759-Hobbs			
Recorded By	Howe	Geisel			
Witness	Fish	Staton			