

Case No.

239

Application, Transcript,
Small Exhibits, Etc.

December 18, 1950

Mr. J. W. House
Humble Oil & Refining Company
Box 1600
Midland, Texas

Dear Mr. House:

We enclose herewith, signed copy of Order R-37, issued in connection with Case 239, heard in Santa Fe, New Mexico, on November 21, 1950.

Very truly yours,

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

R. R. Spurrier
Secretary-Director

RRS:bw
encls.

December 18, 1950

Mr. R. T. German
Magnolia Petroleum Company
Box 633
Midland, Texas

Dear Mr. German:

We enclose herewith, signed copy of Order R-37, issued in connection with Case 239, heard in Santa Fe, New Mexico, on November 21, 1950.

Very truly yours,

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

R. R. Spurrier
Secretary-Director

RRS:bw
encl.

December 18, 1950

Mr. Paxton Howard
Shell Pipe Line Corporation
Petroleum Building
Midland, Texas

Dear Mr. Howard:

We enclose herewith, signed copy of Order R-39, issued by the Oil Conservation Commission, in connection with Case No. 238, heard in Santa Fe, New Mexico, on November 21, 1950.

Very truly yours,

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

R. R. Spurrier
Secretary-Director

RRS:bw
encl.

December 18, 1950

Mr. A. L. Porter, Jr.
Oil Conservation Commission
P. O. Box 1545
Hobbs, New Mexico

Dear Mr. Porter:

We enclose herewith, signed copies of Orders R-37 and R-39, issued by the Oil Conservation Commission, in connection with Cases 239 and 238 respectively, heard in Santa Fe, New Mexico, on November 21, 1950.

Very truly yours,

R. R. Spurrier
Secretary-Director

RES:bw
encls.

HUMBLE OIL & REFINING COMPANY
MIDLAND, TEXAS

J. W. HOUSE

June 13, 1930

Rowan Oil Company
Box 1873
Midland, Texas

Gentlemen:

The Humble Oil & Refining Company is the owner of an oil, gas and mineral lease dated April 28, 1927 from M. W. Coll (Humble's J. L. Greenwood lease) covering 320 acres being the S/2 of Section 9, T-22-S, R-37-E, Lea County, New Mexico which lease is recorded in Book 9, Page 122 of the Oil and Gas Lease Records of said county.

The Humble Oil & Refining Company desires to produce from said lease, with the aid of an artificial water drive, in order to increase the recovery of oil from the producing sands underlying said land because of the decrease in the reservoir pressure in such sands and for such purpose propose to convert wells Nos. 3, 5 and 6 on said land covered by said lease into water injection wells and to inject water by means of said wells into the producing sands underlying said land.

It is believed that under the conditions in the field in which said lease is situated the creation or attempted creation of an artificial water drive in the producing sands in said field is a reasonable producing and engineering practice.

In view of the fact that your company is the owner of a certain oil, gas and mineral lease, or leases, in the vicinity of said land it is requested that you consent and agree to the above mentioned operations. Will you please execute a copy of this letter in the space provided indicating waiver of any objections you might have to the proposed production procedure. This waiver applies only to the producing sands of the Penrose-Skelly zone.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

BY J. W. HOUSE - Division Superintendent

RMB:ewc

APPROVED:

ROMAN OIL COMPANY

BY [Signature]
Petroleum President

HUMBLE OIL & REFINING COMPANY
MEMPHIS, TENN.

AUGUST 3, 1930

J. W. HOUSE

Kaseman Estate
Albuquerque National Bank & Trust Company
Albuquerque, New Mexico

Attention: Mr. Fred Luthy

Dear Mr. Luthy:

The Humble Oil & Refining Company is the owner of an oil, gas and mineral lease dated April 28, 1927 from M. W. Coll (Humble's J. L. Greenwood lease) covering 320 acres being the S/2 of Section 9, T-22-S, R-37-E, Lea County, New Mexico, which lease is recorded in Book 9, Page 122 of the Oil and Gas Lease Records of said county.

The Humble Oil & Refining Company desires to produce from said leases, with the aid of an artificial water drive, in order to increase the recovery of oil from the producing sands underlying said land because of the decrease in the reservoir pressure in such sands and for such purpose propose to convert wells Nos. 3, 5 and 6 on said land covered by said lease into water injection wells and to inject water by means of said wells into the producing sands underlying said land.

It is believed that under the conditions in the field in which said lease is situated the creation or attempted creation of an artificial water drive in the producing sands in said field is a reasonable producing and engineering practice.

In view of the fact that you are the owner of an interest in a certain oil, gas and mineral lease, or leases, in the vicinity of said land it is requested that you consent and agree to the above mentioned operations. Will you please execute a copy of this letter in the space provided indicating any or all objections you might have to the proposed production procedure.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

KMB:ewc

APPROVED:

KASEMAN ESTATE

ALBUQUERQUE NATIONAL BANK
BY *[Signature]*
Albuquerque, New Mexico

[Signature]

HUMBLE OIL & REFINING COMPANY

Houston, Texas

June 1, 1928

J. W. P. 1000

Two States Oil Company
1011 Fifth Building
Dallas, Texas

Attention: Mr. Howard P. Holmes

Gentlemen:

The Humble Oil & Refining Company is the owner of an oil, gas and mineral lease dated April 28, 1927 from M. W. Gail (Humble's J. L. Greenwood lease) covering 320 acres being the S/2 of Section 9, T-22-S, R-37-E, Lea County, New Mexico, which lease is recorded in Book 9, Page 122 of the Oil and Gas Lease Records of said county.

The Humble Oil & Refining Company desires to produce from said lease, with the aid of an artificial water drive, in order to increase the recovery of oil from the producing sands underlying said land because of the decrease in the reservoir pressure in such sands and for such purpose propose to convert wells Nos. 3, 5 and 6 on said land covered by said lease into water injection wells and to inject water by means of said wells into the producing sands underlying said land.

It is believed that under the conditions in the field in which said lease is situated the creation or attempted creation of an artificial water drive in the producing sands in said field is a reasonable producing and engineering practice.

In view of the fact that your company is the owner of a certain oil, gas and mineral lease, or leases, in the vicinity of said land it is requested that you consent and agree to the above mentioned operations. Will you please execute a copy of this letter indicating waiver of any objections you might have to the proposed production procedure.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

J. P. HUGHES - Acting Division Superintendent

EMB:ewo

APPROVED:

TWO STATES OIL COMPANY

BY *Howard P. Holmes*
Position: *President*

HUMBLE OIL & REFINING COMPANY

MIDLAND, TEXAS

June 13, 1950

J. W. HOUSE

Continental Oil Company
Box 431
Midland, Texas

Gentlemen:

The Humble Oil & Refining Company is the owner of an oil, gas and mineral lease dated April 28, 1927 from M. W. Coll (Humble's J. L. Greenwood lease) covering 320 acres being the S/2 of Section 9, T-22-S, R-37-E, Lea County, New Mexico which lease is recorded in Book 9, Page 122 of the Oil and Gas Lease Records of said county.

The Humble Oil & Refining Company desires to produce from said lease, with the aid of an artificial water drive, in order to increase the recovery of oil from the producing sands underlying said land because of the decrease in the reservoir pressure in such sands and for such purpose propose to convert wells Nos. 3, 5 and 6 on said land covered by said lease into water injection wells and to inject water by means of said wells into the producing sands underlying said land.

It is believed that under the conditions in the field in which said lease is situated the creation or attempted creation of an artificial water drive in the producing sands in said field is a reasonable producing and engineering practice.

In view of the fact that your company is the owner of a certain oil, gas and mineral lease, or leases, in the vicinity of said land it is requested that you consent and agree to the above mentioned operations. Will you please execute a copy of this letter in the space provided indicating waiver of any objections you might have to the proposed production procedure.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

EMB:ewc

APPROVED:

CONTINENTAL OIL COMPANY

BY *[Signature]*
Position: Regional Manager
Fort Worth Region
Production Department

BY *[Signature]*
J. W. HOUSE - Division Superintendent

HUMBLE OIL & REFINING COMPANY
MIDLAND, TEXAS

June 13, 1950

J. W. HOUSE

Skelly Oil Company
Box 993
Midland, Texas

Gentlemen:

The Humble Oil & Refining Company is the owner of an oil, gas and mineral lease dated April 28, 1927 from M. W. Coll (Humble's J. L. Greenwood lease) covering 320 acres being the S/2 of Section 9, T-22-S, R-37-E, Lea County New Mexico which lease is recorded in Book 9, Page 122 of the Oil and Gas Lease Records of said county.

The Humble Oil & Refining Company desires to produce from said lease, with the aid of an artificial water drive, in order to increase the recovery of oil from the producing sands underlying said land because of the decrease in the reservoir pressure in such sands and for such purpose propose to convert wells Nos. 3, 5 and 6 on said land covered by said lease into water injection wells and to inject water by means of said wells into the producing sands underlying said land.

It is believed that under the conditions in the field in which said lease is situated the creation or attempted creation of an artificial water drive in the producing sands in said field is a reasonable producing and engineering practice.

In view of the fact that your company is the owner of a certain oil, gas and mineral lease, or leases, in the vicinity of said land it is requested that you consent and agree to the above mentioned operations. Will you please execute a copy of this letter in the space provided indicating waiver of any objections you might have to the proposed production procedure.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

BY 
J. W. HOUSE - Division Superintendent

EMB:ewc

APPROVED:

SKELLY OIL COMPANY

BY 

Position: Vice President

STANOLIND OIL AND GAS COMPANY

FAIR BUILDING

FORT WORTH, TEXAS

July 11, 1950

C. F. BEDFORD
DIVISION PRODUCTION SUPERINTENDENT

File: BRL-8882-174

Subject: Request for Waiver by
Humble Oil and Refining
Company, Lea County, New Mexico.


New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Gentlemen:

We have been advised by the Humble Oil Company of
its intention to inject water into Wells Nos. 3, 5, and
6 on its J. L. Greenwood Lease in Section 9, T-22-S, R-37-E,
Lea County, New Mexico.

As the operator of an offset lease, we hereby waive
rights of objection to the above procedure.

Very truly yours,



LHB/ek

J. W. HOUSE

June 13, 1930

Neville G. Penrose, Incorporated
Fair Building
Fort Worth, Texas

Gentlemen:

The Humble Oil & Refining Company is the owner of an oil, gas and mineral lease dated April 28, 1927 from M. W. Coll (Humble's J. L. Greenwood lease) covering 320 acres being the S/2 of Section 9, T-22-S, R-37-E, Lea County, New Mexico which lease is recorded in Book 9, Page 122 of the Oil and Gas Lease Records of said county.

The Humble Oil & Refining Company desires to produce from said lease, with the aid of an artificial water drive, in order to increase the recovery of oil from the producing sands underlying said land because of the decrease in the reservoir pressure in such sands and for such purpose propose to convert wells Nos. 3, 5 and 6 on said land covered by said lease into water injection wells and to inject water by means of said wells into the producing sands underlying said land.

It is believed that under the conditions in the field in which said lease is situated the creation or attempted creation of an artificial water drive in the producing sands in said field is a reasonable producing and engineering practice.

In view of the fact that your company is the owner of a certain oil, gas and mineral lease, or leases, in the vicinity of said land it is requested that you consent and agree to the above mentioned operations. Will you please execute a copy of this letter in the space provided indicating waiver of any objections you might have to the proposed production procedure.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

BY

J. W. HOUSE - Division Superintendent

EMB:ewo

APPROVED:

NEVILLE G. PENROSE, INCORPORATED

BY

[Signature]
Position:

HUMBLE OIL & REFINING COMPANY
MIDLAND, TEXAS

June 13, 1950

J. W. HOUSE

Magnolia Petroleum Company
Box 633
Midland, Texas

Gentlemen:

The Humble Oil & Refining Company is the owner of an oil, gas and mineral lease dated April 28, 1927 from M. W. Coll (Humble's J. L. Greenwood lease) covering 320 acres being the S/2 of Section 9, T-22-S, R-37-E, Lea County, New Mexico which lease is recorded in Book 9, Page 122 of the Oil and Gas Lease Records of said county.

The Humble Oil & Refining Company desires to produce from said lease, with the aid of an artificial water drive, in order to increase the recovery of oil from the producing sands underlying said land because of the decrease in the reservoir pressure in such sands and for such purpose propose to convert wells Nos. 3, 5 and 6 on said land covered by said lease into water injection wells and to inject water by means of said wells into the producing sands underlying said land.

It is believed that under the conditions in the field in which said lease is situated the creation or attempted creation of an artificial water drive in the producing sands in said field is a reasonable producing and engineering practice.

In view of the fact that your company is the owner of a certain oil, gas and mineral lease, or leases, in the vicinity of said land it is requested that you consent and agree to the above mentioned operations. Will you please execute a copy of this letter in the space provided indicating waiver of any objections you might have to the proposed production procedure.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

BY J. W. House
J. W. HOUSE - Division Superintendent

EMB:ewc

APPROVED:

MAGNOLIA PETROLEUM COMPANY

BY A. E. Olstein

Position:

*rmn
D.V.C.
mved*



SHELL OIL COMPANY

INCORPORATED IN THE STATE OF TEXAS
SHELL OIL COMPANY
SHELL OIL COMPANY
SHELL OIL COMPANY

Shell Oil & Refining Company
Higdon, Texas

Gentlemen:

In reply to your letter of June 19, 1950, wherein you requested that Shell Oil Company indicate a waiver of any objections that it might have to your proposed injection of water into the Bearpaw Shelly formation under the south half of Section 9, Township 22 South, Range 27 East, Lee County, Texas, we will number 3, 4 and 5 as well as 6. This is to advise that Shell Oil Company hereby waives any objections to your proposed water injection into the said formation under the said land.

Yours very truly:

H. H. Brimmer
H. H. Brimmer
General Manager

cc: Mr. H. H. Brimmer - Hobe

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF HUMBLE OIL AND REFINING
COMPANY AND MAGNOLIA PETROLEUM
CORPORATION FOR PERMISSION TO
INJECT WATER FOR SECONDARY RECOVERY
OF OIL FROM CERTAIN MARGINAL
WELLS IN THE PENROSE-SKELLY POOL
IN LEA COUNTY, NEW MEXICO.

CASE NO. 239
ORDER NO. R-37

ORDER OF THE COMMISSION

BY THE COMMISSION:

This matter came on for hearing at Santa Fe, New Mexico, on 21 November 1950.

The Commission having heard the evidence presented and having taken the case under advisement finds:

1. It has jurisdiction of this case and of the parties interested therein, due notice of this hearing having been given.
2. It would be in the interests of conservation and would prevent the waste of oil to permit the petitioner to conduct a water injection program as prayed for in the petition.

IT IS THEREFORE ORDERED:

1. Humble Oil and Refining Company and Magnolia Petroleum Corporation are hereby granted permission to inject water for secondary recovery in the Penrose-Skelly Pool in Lea County, New Mexico on the following leases:

J. L. Greenwood Lease:
S $\frac{1}{2}$ Sec. 9, Twp. 22 S., Rge. 37 E; and
Brunson-Argo Lease:
NE $\frac{1}{4}$ Sec. 9, Twp. 22 S., Rge. 37 E., and
NW $\frac{1}{4}$ Sec. 10, Twp. 22 S., Rge. 37 E.

2. The intake wells shall be those wells located in the following subdivisions:

SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 9
SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 9
NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 9
SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 9
All in Twp. 22 S., Rge. 37 E.

3. Rules 702, 703 and 704 of this Commission shall be adhered to by the petitioner.

DONE at Santa Fe, New Mexico, on this 15th day of December, 1950.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

THOMAS J. MABRY, CHAIRMAN

Guy Shepard
GUY SHEPARD, MEMBER

R. R. Spurr
R. R. SPURR, SECRETARY

awaiting
R.R.S. Sign.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF HUMBLE OIL AND REFINING
COMPANY AND MAGNOLIA PETROLEUM
CORPORATION FOR PERMISSION TO
INJECT WATER FOR SECONDARY RECOVERY
OF OIL FROM CERTAIN MARGINAL
WELLS IN THE GRAYBURG RESERVOIR,
PENROSE-SKELLY, IN LEA COUNTY,
NEW MEXICO.

CASE NO. 239

ORDER NO. R- 37

ORDER OF THE COMMISSION

BY THE COMMISSION:

This matter came on for hearing at Santa Fe, New Mexico,
on 21 November 1950, the petitioner being represented by Robert
Dewey.

The Commission having heard the evidence presented and
having taken the case under advisement finds:

1. It has jurisdiction of this case and of the parties
interested therein, due notice of this hearing having been given.

2. It would be in the interests of conservation and
would prevent the waste of oil to permit the petitioner to conduct
a water injection program as prayed for in the petition.

IT IS THEREFORE ORDERED BY THE COMMISSION AS FOLLOWS:

1. Humble Oil and Refining Company and Magnolia Petroleum
Corporation are hereby granted permission to inject water for
secondary recovery in the Grayburg Reservoir of the Penrose-Skelly
Pool in Lea County, New Mexico on the following leases:

J. L. Greenwood Lease:

S $\frac{1}{2}$ Sec. 9, Twp. 22 S., Rge. 37 E; and

Brunson-Argo Lease:

NE $\frac{1}{4}$ Sec. 9, Twp. 22 S., Rge. 37 E., and

NW $\frac{1}{4}$ Sec. 10, Twp. 22 S., Rge. 37 E.

2. The intake wells shall be those wells located in the
following subdivisions:

SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 9

SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 9

NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 9

SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 9

All in Twp. 22 S., Rge. 37 E.

3. Rules 702, 703, and 704 of this Commission shall be
adhered to by the petitioner.

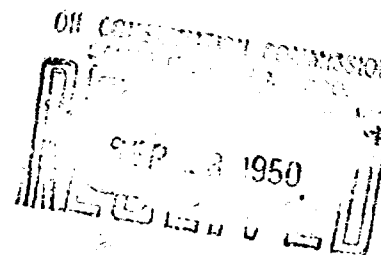
Done at Santa Fe, New Mexico, on this ____ day of
December 1950.

STATE OF NEW MEXICO OIL CONSERVATION
COMMISSION

By Thomas J. Mabry, Chairman
Guy Shepard, Member
R. R. Spurrier, Secretary

*Two copies today
Should be filed Nov. 21
Case # 37)*

Midland, Texas
September 21, 1950



Graham

File: 3-14
Re: Proposed Water Injection
Penrose Skelly Field

New Mexico Conservation Commission
Santa Fe, New Mexico

Gentlemen:

Permission is requested to inject water in the Grayburg reservoir, Penrose-Skelly Field, Lea County, New Mexico, on the Humble Oil & Refining Company - J. L. Greenwood Lease and the Magnolia Petroleum Company - Brunson-Argo lease. This is a dolomite reservoir producing under a combination of dissolved gas and gas-cap drive and is practically depleted by primary means. In March 1950, the average Grayburg production on each lease was 4 bbl/day/well. Primary recovery on the Greenwood lease has been approximately 1100 bbl/acre and on the Brunson lease approximately 1200 bbl/acre. Prior to abandonment of any wells it is believed desirable to conduct a water injection experiment to determine the possibilities of increasing the ultimate recovery by secondary recovery methods.

The accompanying Figure 1 shows the location of the 4 proposed intake wells and the location of all oil and gas wells, including drilling wells and dry holes, and the names of lessees within one-half mile of the intake wells, and each offset operator. Wells are producing from the Grayburg, San Angelo, Glear Fork and Ellenburger pays. Since there are 4 pays producing in this area, Figure 2 has been prepared to show only those wells currently completed in the Grayburg pay. Water injection will be in the Grayburg pay, which is a crystalline dolomite at a depth of approximately 3600 feet.

Only one well, Greenwood 5, has an electric log, which is attached. Very little information on the pay sections is available. Completion data on the proposed injection wells are listed in the accompanying Table 1. Also the casing programs on the injection wells are given in Table 1.

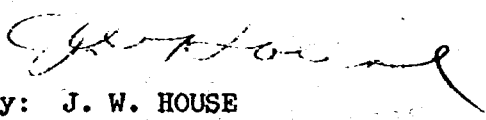
New Mexico Conservation Commission
Santa Fe, New Mexico
September 21, 1950
Page 2

It is proposed to test the casing by bailing. Water will be obtained from shallow fresh water wells on the leases. The amount of water to be injected will depend on the capacity of the input wells. It is estimated that approximately 2000 bbl/day will be available when injection starts.

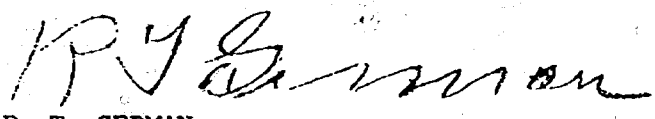
The operators initially injecting water will be Humble Oil & Refining Company, Box 1600, Midland, Texas, and Magnolia Petroleum Company, Box 633, Midland, Texas. It is requested that a date be set for an open hearing to give an opportunity to present evidence in this matter, in order to obtain permission to conduct the operations outlined in this letter.

Yours very truly,

HUMBLE OIL & REFINING COMPANY


By: J. W. HOUSE
Division Superintendent

MAGNOLIA PETROLEUM COMPANY

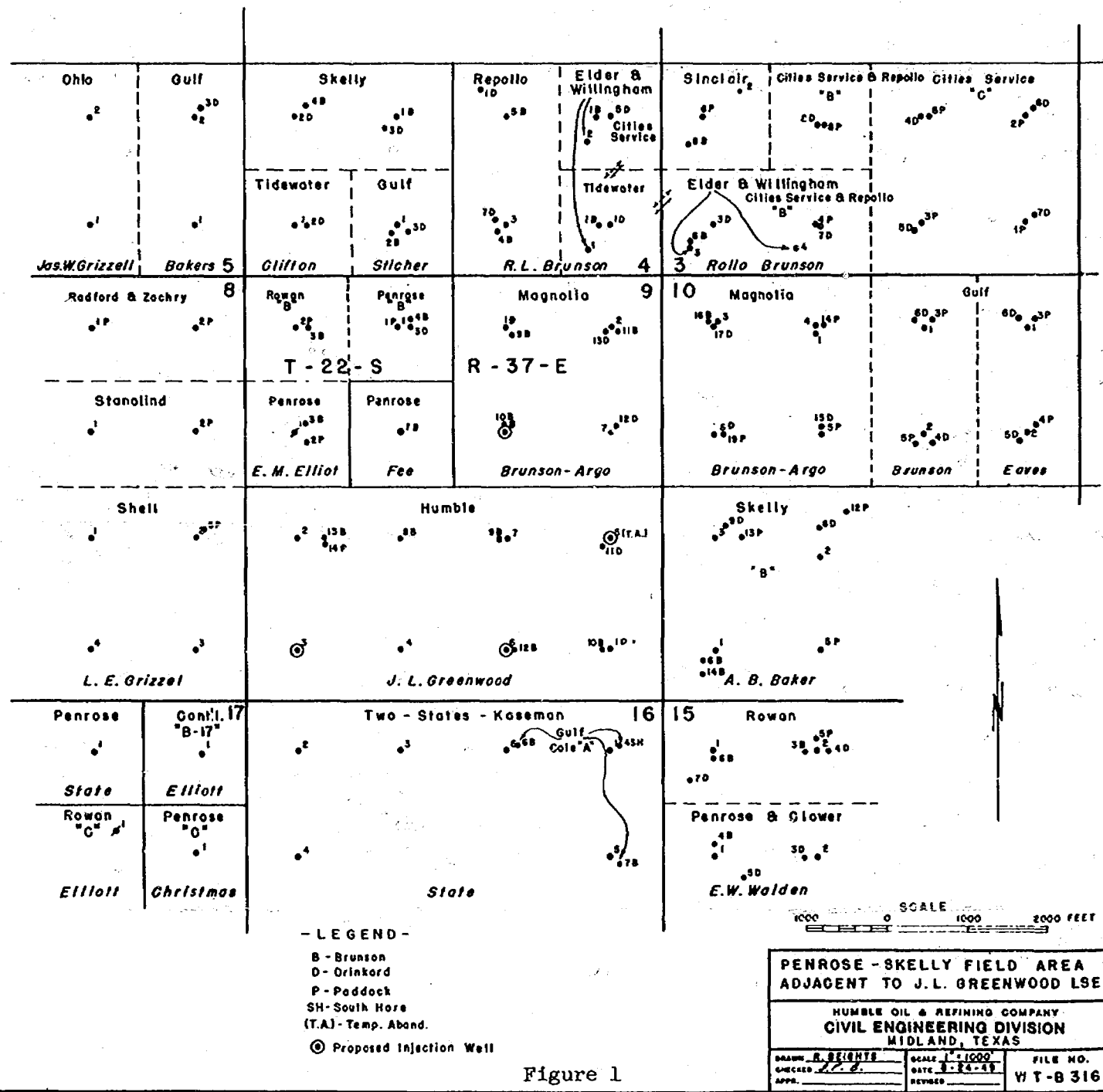
By: 
R. T. GERMAN
Division Superintendent

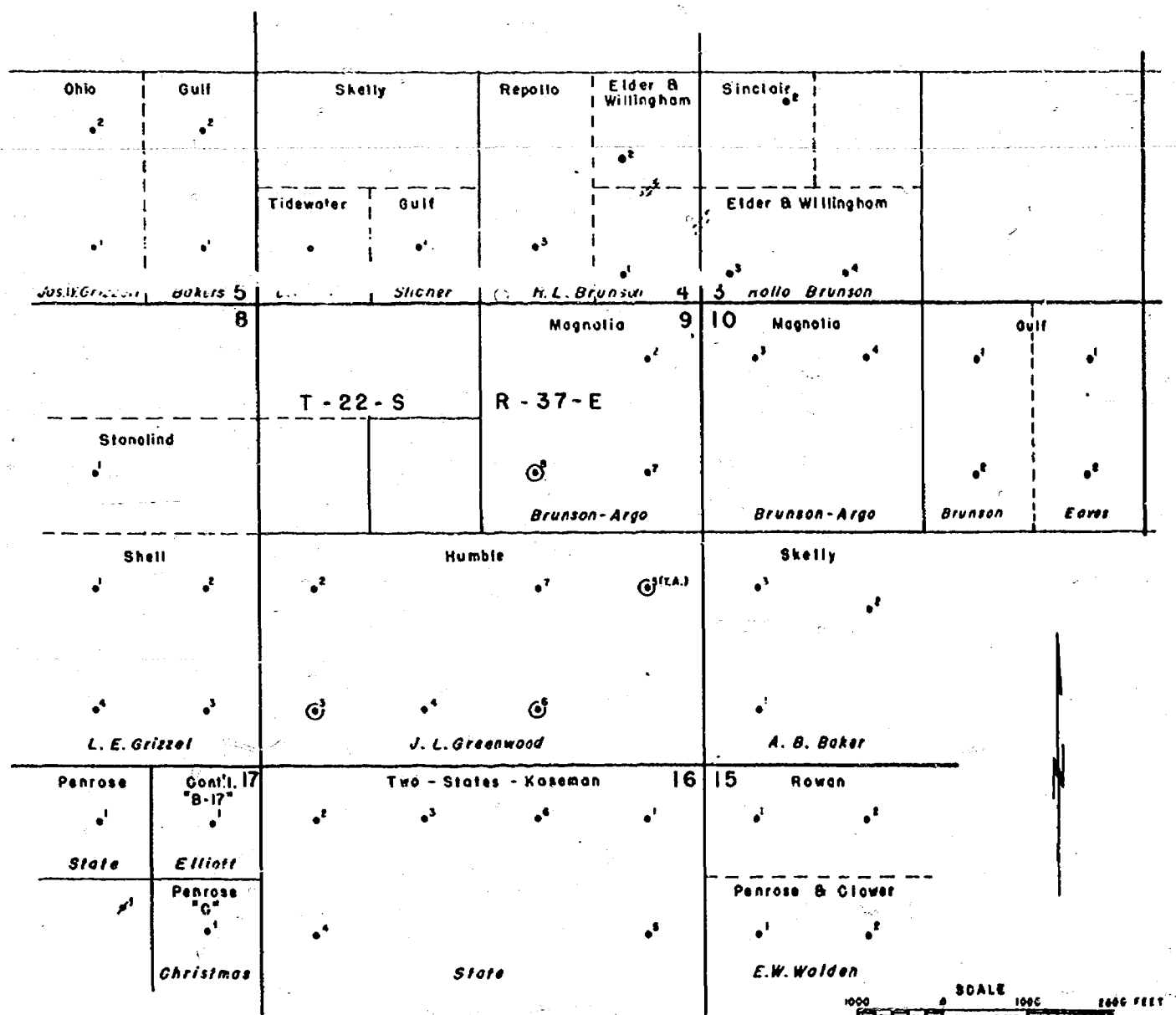
WLC/rs

TABLE 1
COMPLETION DATA - PROPOSED INJECTION WELLS - PENROSE-SKELLY FIELD

Company Lease & Well No.	Completion Date	Total Depth -Ft.	Surface String		Oil String		Top of Pay -Feet	Feet of Pay	Initial Production		Gallons Acid	Shot -Qt.	Size Open Hole
			Size -In.	Depth	Size -In.	Depth			Bbl/ Day	GOR			
Humble													
J. L. Greenwood 3	10-24-38 7-21-47	3705	9-5/8	439	7	3600	3605	100	192 4	2453 --	none none	none 36 qt 90 ft marbles	6-1/4
J. L. Greenwood 5	3-28-40 5-12-49	3725 3748 P.B.	9-5/8	426	7 5-1/2	3629 3748*	3662	63	384 Temp. Abd.	1742 Deepened to back to temp.	3000	none	6-1/4 Paddock, plugged abd.
J. L. Greenwood 6	4-20-40	3715	9-5/8	447	7	3624	3630	85	468	1239	3000	none	6-1/4
Magnolia													
Brunson-Argo 8	1-15-40 1941 1946	3740	9-5/8	1171	7	3610	3618	30	75	--	-- 300	250 380	6-1/4

* 5-1/2-inch liner 3531 to 5246, plug back depth 3748 ft.





PENROSE - SKELLY FIELD AREA
ADJACENT TO J. L. GREENWOOD LSE.

HUMBLE OIL & REFINING COMPANY
CIVIL ENGINEERING DIVISION
MIDLAND, TEXAS

DRAWN BY B. BRIGHTS
CHECKED BY J. B. BRIGHTS
APPROVED BY J. B. BRIGHTS
SCALE 1" = 1000'
DATE 8-14-49
REVISED
FILE NO. WT-B 316

Figure 2

C H L U M B E R WELL SURVEYING CORPORATION

Location of Well 1980' FSL & 660' FEL SEC. 9 22S-37E Elevation: D.F.: K.B.: or G.L.:	COMPANY: HUMBLE OIL & REFINING COMPANY:	COUNTY: LEA FIELD OR LOCATION: PADDOCK WELL: J. L. GREENWOOD #5 COMPANY: HUMBLE OIL & REFINING
	WELL: J. L. GREENWOOD #5	
	FIELD: PADDOCK	
	LOCATION: SEC. 9 22S-37E	
	COUNTY: LEA	
STATE: NEW MEXICO		FILING No.

RUN NO.	1				
Date	4-25-69				
First Reading	5113 5113				
Last Reading	3627 0				
Footage Measured	1516 5113				
Csg Shoe Schlum	3627				
Csg Shoe Driller	3629				
Max. Depth Reached	5116				
Bottom Driller	5110				
Depth Datum	1' above AT				
Mud Nature	Caustic Water				
Density	9.1				
Viscosity	35				
Resistivity	66 4.53				
Resistivity BHT	1/2				
pH	9				
Water Loss	CC 30 Min	CC 30 Min	CC 30 Min	CC 30 Min	CC 30 Min
Maximum Temp. F.	122				
Bit Size	6 1/2				
Spacings - AM	10"				
A	32"				
AO	5 hours				
E.S. Rig Time	277				
Truck No.	Gargill				
Recorded By					
Witnessed By					

REMARKS

Spontaneous-Potential millivolts	DEPTHS	Resistivity ohms. m ² /m.
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