

Case No.

164

Application, Transcript,
Small Exhibits, Etc.

Case 104-1, THE ORDER OF THE APP. OF GRAY-
burg Oil Co. of NE, and Western Prod. Co.
for an order granting permission to utilize
certain tracts.

Exhibit _____

Case 164

October 23, 1948

File: GHC-2213-310.17

Re: Case No. 164 -

In the matter of the Application of the Grayburg Oil Company of New Mexico, and the Western Production Company, Inc. for an Order granting Permission to Unitize Certain Tracts within the Boundaries of the Grayburg Cooperative and Unit Area, in Township 17 South, Ranges 29 and 30 East, N.M.P.M., in the Grayburg-Jackson Pool of Eddy County, New Mexico for Proration and Allowable Purposes.

A I R M A I L

Mr. R. R. Spurrier
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Dear Sir:

At the hearing held on July 29, 1948, on the application of the Grayburg Oil Company and the Western Production Company, Inc. for an order granting permission to drill certain unorthodox wells and to allocate the allowable on a basic lease basis, Mr. J. O. Seth, representing the Lea County Operators Committee, stated that we did not have any objection to the granting of unorthodox locations, and requested that action of the Commission regarding an allocation of allowables be deferred.

The Grayburg Oil Company and the Western Production Company, Inc. have submitted a revised application to the Commission covering the allocation of allowables on the leases affected, which was forwarded to the Executive Committee of the Lea County Operators Committee with Mr. C. G. Staley's letter of September 27, 1948. The Executive Committee, after reviewing the revised application, have voted 6 to 1 that they have no objection to this application in its present form.

The revised application has been sent to all operators under date of October 15, 1948, and any operator wishing to do so may enter an objection to the proposed order of the Grayburg Oil Company and Western Production Company, Inc. at the hearing to be held on October 28.

Yours very truly,

ORIGINAL SIGNED BY
G. H. CARD

GHC:gp

cc: J.O. Seth
John E. Cockran, Jr. ✓

G. H. Card, Chairman



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 957
Roswell, New Mexico
October 26, 1948

Exhibit _____

Case 1 64

Mr. John E. Cochran, Jr.
P. O. Box 128
Artesia, New Mexico

Subject: Grayburg Cooperative and Unit Area

Dear Mr. Cochran:

You have furnished this office with a copy of an application executed by you on October 12, 1948, as attorney for applicants Grayburg Oil Company of New Mexico and Western Production Company, Inc., which has been filed with the Oil Conservation Commission of New Mexico for an order granting permission to unitize certain tracts within the boundaries of the Grayburg Cooperative and Unit Area in T. 17 S., R. 29 and 30 E., N.M.P.M., Grayburg-Jackson pool, Eddy County, New Mexico, for proration and allowable purposes.

Reference is made in the application to Case No. 152 on which a hearing was held before the New Mexico Oil Conservation Commission on July 29, 1948, for permission to drill 28 unorthodox "five-spot" well locations on the Federal oil and gas leases cited therein.

I am informed by a circular memorandum dated October 15, 1948, that in the opinion of the majority of a committee of the Lea County Operators' Executive Committee the Grayburg and Western's application will not upset the present system of allocation to individual 40-acre units now in effect under the State-wide Proration Order, particularly in view of the provisions of section 7 of your application.

Under the circumstances cited and the apparent agreement as to the procedure and method for unitizing tracts for proration and allowable purposes, this office offers no objection to the application referred to above which I understand will be considered under Case No. 164 for hearing before the Oil Conservation Commission in Santa Fe on October 28, 1948.

This supplements my letter of July 27 to you in connection with your original application of July 8, 1948, for permission to drill the 28 unorthodox locations on leases within the boundaries of the Grayburg Cooperative and Unit Area, copy of which letter was presented to the Oil Conservation Commission for consideration in connection with its Case No. 152.

Very truly yours,

Foster Morrell

Foster Morrell,
Supervisor, Oil and Gas Operations.

cc: Mr. Cochran (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR

Harold L. Ickes, Secretary

GEOLOGICAL SURVEY

William E. Wrather, Director

ENGINEERING REPORT ON
GRAYBURG COOPERATIVE AND UNIT AREA
Eddy County, New Mexico

By

John A. Barnett and Merwin H. Soyster
(Conservation Branch - Oil & Gas Leasing Division)

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Engineering Report on
GRAYBURG COOPERATIVE AND UNIT AREA
Eddy County, New Mexico

- - -
By

John A. Barnett and Merwin H. Soyster

This report covers the area committed to the Grayburg Cooperative and Unit Agreement (I-Sec. 370) approved by the Assistant Secretary of the Interior on October 5, 1943, hereafter referred to as the "unit area", embracing 4,769.44 acres of public land in T. 17 S., Rs. 29 and 30 E., Eddy County, New Mexico. The area includes portions of the Anderson, Grayburg-Jackson, and Leonard oil fields as defined for proration purposes by the New Mexico Oil Conservation Commission. The unit area is covered by Federal oil and gas leases owned by the Grayburg Oil Company of New Mexico and the Western Production Company, Inc. The Grayburg Unit Association has been formed and designated to conduct and manage all operations in the unit area. As of December 31, 1943, there were forty-six producing oil wells within the unit area.

The report has been prepared for the purpose of assisting the Grayburg Unit Association in determining the proper locations of gas-injection wells and the best methods for future operation of the pressure-maintenance system that is being installed for the purpose of retarding the reservoir pressure decline and increasing the ultimate recovery of oil from the Grayburg Zone defined in the above-mentioned agreement as formations not more than 3300 feet below the surface. Data used in the report were obtained from records on file in the Geological Survey office at Roswell, New Mexico, and from the records of the Western Production Company and the Grayburg Oil Company. All data were carefully checked as to accuracy with engineers and fields representatives of both companies.

Maps, cross-sections and curves.

Included with this report are the following illustrations:

1. Well-record map, showing boundaries of the Cooperative and Unit Area, well locations, ownership and serial numbers of Federal oil and gas leases, and a type log of subsurface formations penetrated. In addition, the elevations, geologic correlation points, and other pertinent data are indicated for each well.
2. Structure map, contoured on top of the "Red Sand".
3. Production zone map. This map was prepared by correlation of all sample logs and electrical logs available. An index to the zones will be found in the type log included with the maps of the area.

4. Bottom-hole pressure map. The pressures, corrected to a datum of 800 feet above sea level, were taken during the period October 4, 1943, to January 8, 1944. For a few wells, current pressures were not available. For those wells the last available pressure tests were used (taken within the past year) and so indicated.

5. Production chart, indicating the annual oil production, cumulative oil production, and number of wells producing at the end of each year.

6. Production decline curve. This curve was constructed by plotting individual production declines of several representative wells that are believed to have been produced with practically unrestricted flow, and by interpolating a family decline curve therefrom. The normal future rate of production decline, using primary producing methods, was then obtained by projecting the curve on logarithmic cross-section paper.

7. Bottom-hole pressure decline curve. This curve was obtained by averaging the rates of pressure decline of all wells, plotted with reference to the time elapsed between the completion of each well and the recording of bottom-hole pressures. The future rate of pressure decline was then estimated by logarithmic projection.

8. Cross-section A-A', showing the geology and details of the producing formations along a line of wells from the west to the east side of the unit area.

9. Cross-section B-B' - a northwest-southeast down-dip section.

10. Cross-section C-C' - a northwest-southeast down-dip section.

History.

The first oil production in the unit area was obtained in 1929 by Grayburg Oil Company in its Burch No. 2-A well, located 1980 feet from the south line and 660 feet from the west line of sec. 19, T. 17 S., R. 30 E. This well was drilled to a total depth of 3142 feet and completed on June 27, 1929, for an initial production of 50 barrels of 36.3 API gravity oil per day. It was subsequently deepened to 3204 feet without encountering water or additional oil.

Owing to adverse business conditions, lack of knowledge as to the extent of the productive area, and other factors, drilling in this area was conducted sporadically up to August 1937. During that period only eight wells were completed, averaging one well per year. Between August 1, 1937, and September 1, 1941, a total of 12 wells were completed, an average of 3 wells per year. From September 1, 1941, to January 1, 1944, a total of 26 wells were completed for an average of slightly less than 12 wells per year.

The area has been developed with a well-spacing pattern of one well to each 40-acre subdivision. All recent drilling has been in the center of such subdivisions. Production has ranged from the unrestricted yield of earlier wells to a maximum daily allowable of less than 30 barrels per well, and more recently has been at a maximum daily well allowable of 48 barrels, which is the current top allowable for wells in other fields in southeastern New Mexico, as determined by the New Mexico Oil Conservation Commission.

Stratigraphy.

The surface of the unit area consists largely of small shifting sand hills, which preclude a determination of surface structure by examination of outcrops. The stratigraphy consequently has been determined by a study and correlation of samples of formations drilled, together with the correlation of electrical logs. Nomenclature, correlations and formation intervals used in this report are based on studies of southeast New Mexico and West Texas by Dickey^{1/}, King^{2/} and others^{3/}.

The surface sand is underlain by approximately 250 feet of sandstone and red shale which is undifferentiated but generally classified as belonging to the Dockum group of Triassic age. The lower portion of these beds, usually sandstone or sandy red shale, may be the Dewey Lake redbeds of Permian age. Below this horizon all formations penetrated thus far are of Permian age.

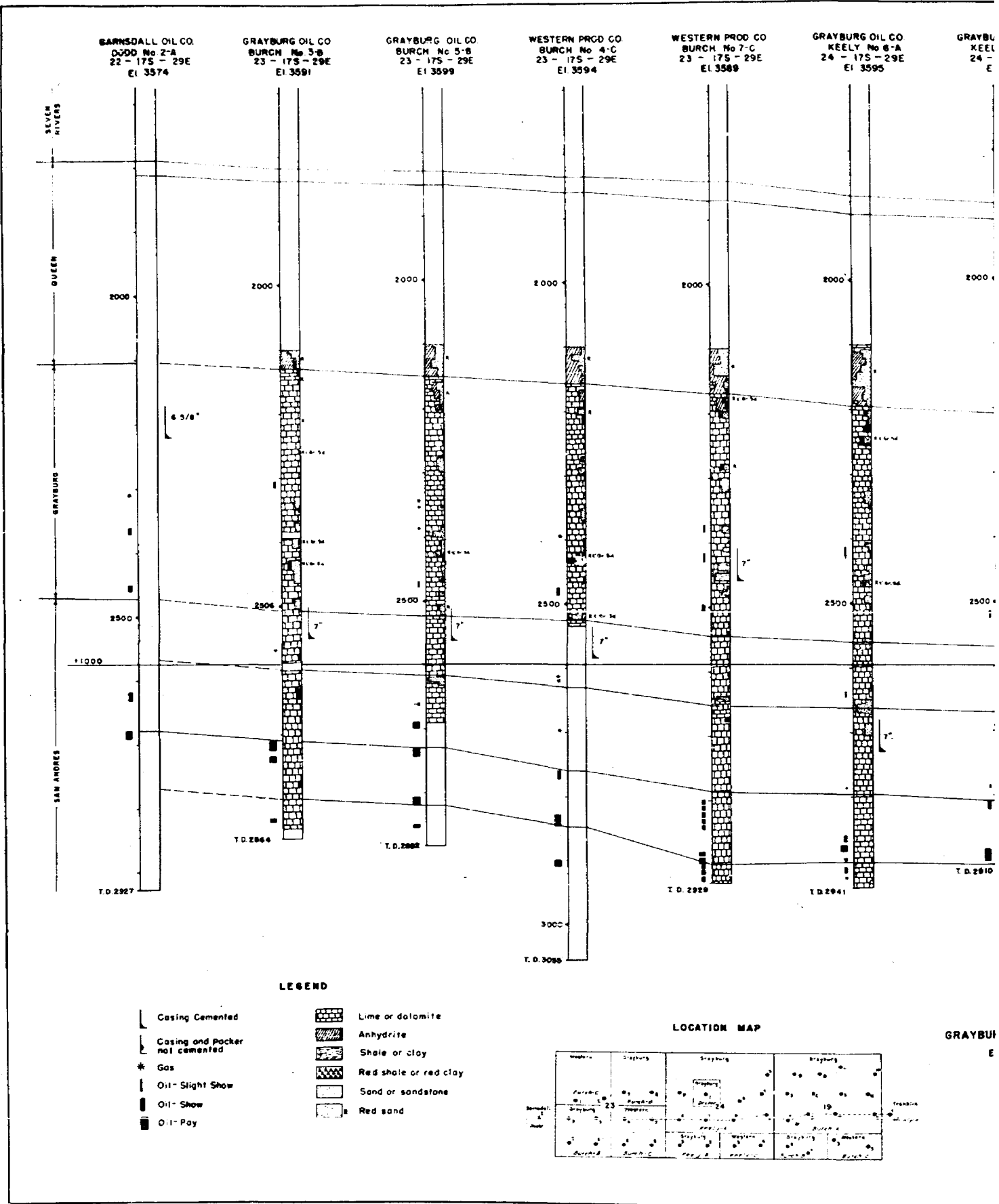
Unconformably below the Dewey Lake (?) redbeds occurs the Rustler formation, approximately 100 to 200 feet in thickness, composed mainly of anhydrite, with limestone present in some areas.

The Salado formation, commonly known as the "salt section", consists of 400 to 500 feet of salt, often potash-bearing, with occasional thin beds of anhydrite.

^{1/} Dickey, R. I., Geologic section from Fisher County through Andrews County, Texas, to Eddy County, New Mexico: Amer. Assoc. Petrol. Geol. Bull., Vol. 24, No. 1, pp. 37-51, January 1940.

^{2/} King, P. B., Permian of West Texas and southeastern New Mexico: Amer. Assoc. Petrol. Geol. Bull., Vol. 26, No. 4, April 1942.

^{3/} The Oil and Gas Resources of New Mexico, Second Edition: New Mexico School of Mines, State Bureau of Mines and Mineral Resources, Bull. 18, 1942.

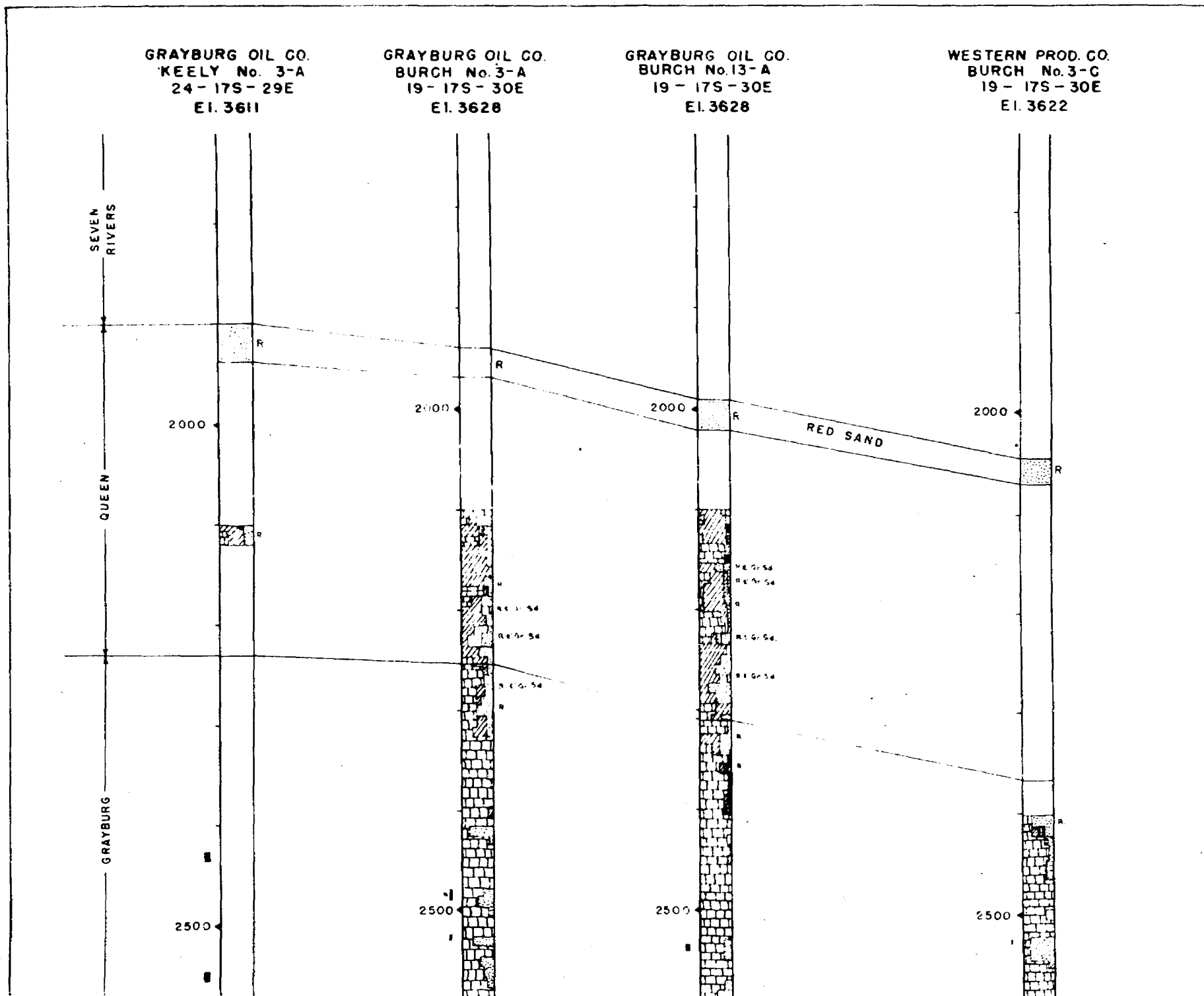


GRAYBURG OIL CO.
KEELY No. 3-A
24-17S-29E
El. 3611

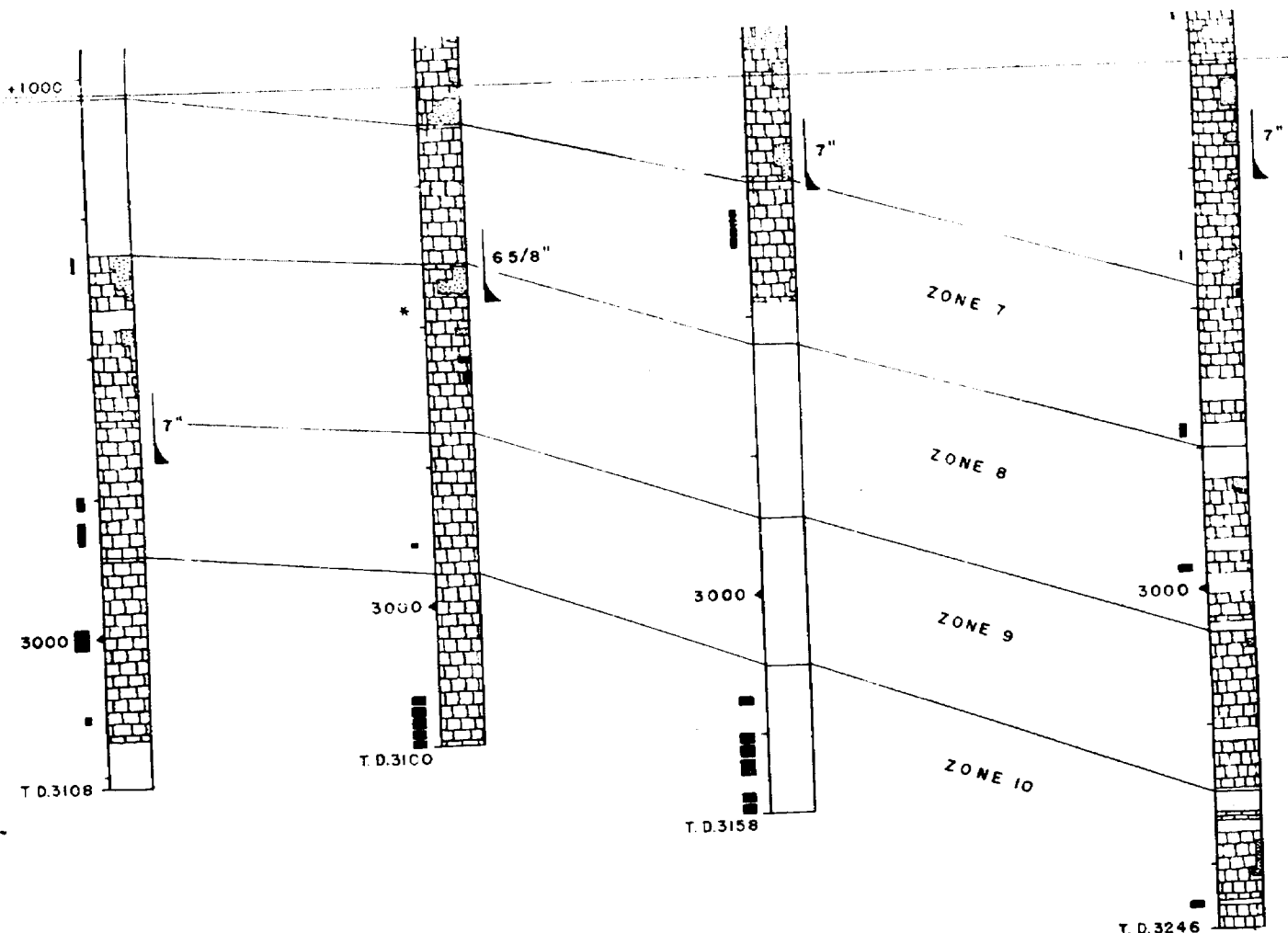
GRAYBURG OIL CO.
BURCH No. 3-A
19-17S-30E
El. 3628

GRAYBURG OIL CO.
BURCH No. 13-A
19-17S-30E
El. 3628

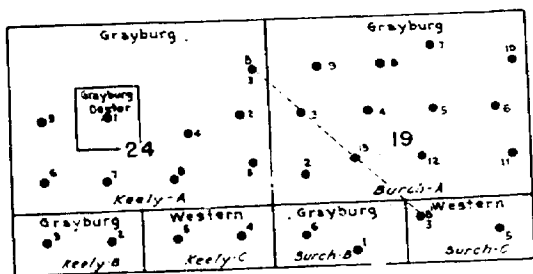
WESTERN PROD. CO.
BURCH No. 3-C
19-17S-30E
El. 3622



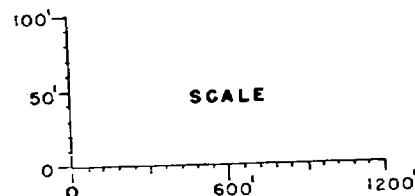
SAN ANDRES

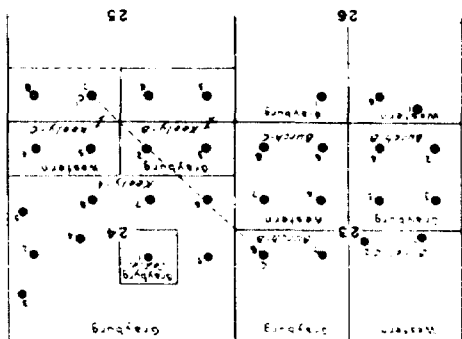


LOCATION MAP

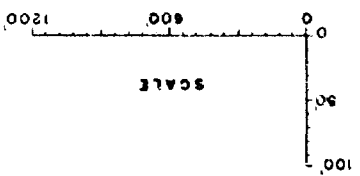


CROSS SECTION B-B'
GRAYBURG COOPERATIVE AND UNIT AREA
EDDY COUNTY, NEW MEXICO

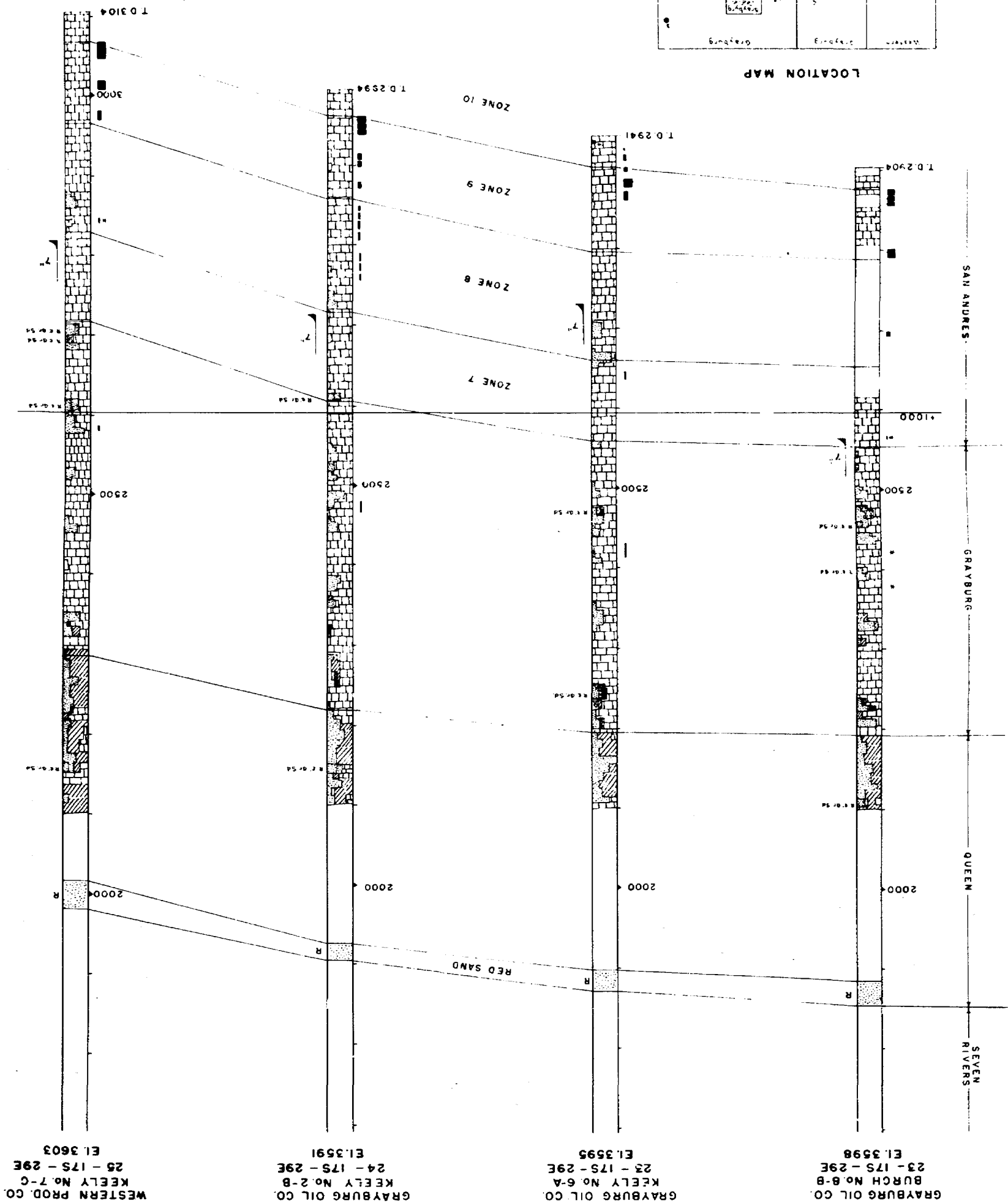




LOCATION MAP



GRAYBURG COOPERATIVE AND UNIT AREA
EDDY COUNTY, NEW MEXICO



Formations below the Salado are shown in detail on the cross-sections and type log. It will be noted that a system of numbers for the producing zones in the San Andres formation is shown. This is in conformity with a system originated in many other southeastern New Mexico fields by the Roswell office of the Oil and Gas Leasing Division, Conservation Branch, Geological Survey^{4/}, and now commonly used by many New Mexico operators, geologists, and engineers. As most of the oil found in the unitized area occurs in the San Andres formation, there are indicated on the cross-sections only the correlations of zones 7, 8, 9 and 10, which are the zones known to produce oil in the San Andres. Only four wells in the area produce oil from the Grayburg formation--two from zone 5 and two from zone 6. Below the eighth zone correlations are made almost entirely on the occurrence of oil pays rather than on stratigraphy or lithology. In some areas, it is quite likely that oil pays in zones 9 and 10 may be inter-communicative. Particularly in the western portion of the unit area, zones 9 and 10 are closely related and somewhat difficult to correlate, and for production and engineering purposes might properly be considered as one zone.

Structure.

Subsurface contours on top of the "Red Sand" show the structure within the unit area to be an eastward plunging anticline, slightly asymmetrical, with a steeper south flank, from which flank the greater portion of oil has been produced. The regional dip is approximately 50 feet to the mile in a southeastward direction, and the local dip of the southeastern flank of the anticline is approximately 200 feet per mile. There is no evidence of faulting. It is quite probable that, although structure has been a general factor influencing the accumulation of oil, the very irregular nature of the accumulations of oil is due to variations in permeability and cementation of the reservoir rock, and to minor structural flexures that serve as barriers or stratigraphic traps.

Reservoir Conditions.

As stated above, the major portion of the oil produced is from the San Andres formation. The amount of production from each well is dependent upon the porosity and permeability of the producing zones, which often vary greatly from well to well. No cores have been taken in the unit area, and it is not possible to state the range of porosities and permeabilities.

Productive zones, consisting of porous dolomite in the San Andres formation, are relatively thin. Several wells have thus far produced in excess of 150,000 barrels of oil, and some in excess of 350,000 barrels. On the other hand, some wells in the area will probably not yield 50,000 barrels ultimately. This is indicative of the wide range in porosity and permeability of the producing zones.

^{4/} Barnett, John A., Maljamar Pool, The Oil and Gas Resources of New Mexico, New Mexico School of Mines, State Bureau of Mines and Mineral Resources, Bull. 18, pp. 243-244, 1942.

It is ordinarily necessary to shoot the formations above the San Andres, where found productive, in order to establish commercial production. It is likewise necessary to acidize under pressure the producing zones encountered in the San Andres formation, in most wells. A few wells have been drilled that require neither shooting nor acidizing.

Water.

Water in varying amounts is generally encountered at a short distance above the top of the salt, but no water is known to have been encountered below the salt. The production of water with the oil in the unit area has never been a problem. Lack of core data precludes the possibility of determining the amount of connate or interstitial water in the oil sands. Estimates based on neighboring fields where determinations have been made, indicate a probability of 15 to 30 percent connate water. There is no evidence of either a direct or an indirect water drive in the area.

Drilling and production methods.

All wells in the unit area have been drilled with cable-tool drilling equipment, usually portable machines. The average cost of drilling and completing a well for production is approximately \$15,000.

The usual drilling program provides for a string of 10-3/4-inch or 8-5/8-inch casing set in the anhydrite immediately above the top of the Salado or "salt section" at depths ranging from 300 to 500 feet, and cemented with 50 sacks of cement, preceded by mud circulated to the surface. This serves as an "anchor string", and affords protection to the potash-bearing salt beds from infiltration of upper waters. It also affords protection against caving of the upper strata. A string of 7-inch or 5-3/16-inch casing is then set at a point approximately 100 feet above the first producing zone, and cemented with 100 sacks of cement, preceded by mud circulated to the surface.

Although wells are sometimes swabbed into production and completed naturally, it is usually necessary to stimulate production by acidizing the dolomite pay zones under pressure, in order to obtain production in commercial quantities. The oil is generally produced through 2-inch tubing, set about 20 or 30 feet above the pay zone.

All wells in the unit area are flowing except Grayburg Oil Company No. 9-A Burch, which is being pumped. The oil is usually produced intermittently through surface chokes on the tubing, in order to conserve gas. No bottom-hole chokes have been used, although it is contemplated that such practice may be resorted to in the future in order that the production may be attained without pumping equipment after bottom-hole pressures have been further reduced. Under present practices, approximately 215 pounds

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per square inch is the minimum pressure at which the wells will continue to flow. It may be noted by reference to the bottom-hole pressure map accompanying this report that bottom-hole pressures in the unit area range from 230 to 1,018 pounds per square inch, depending upon the location and age of the wells.

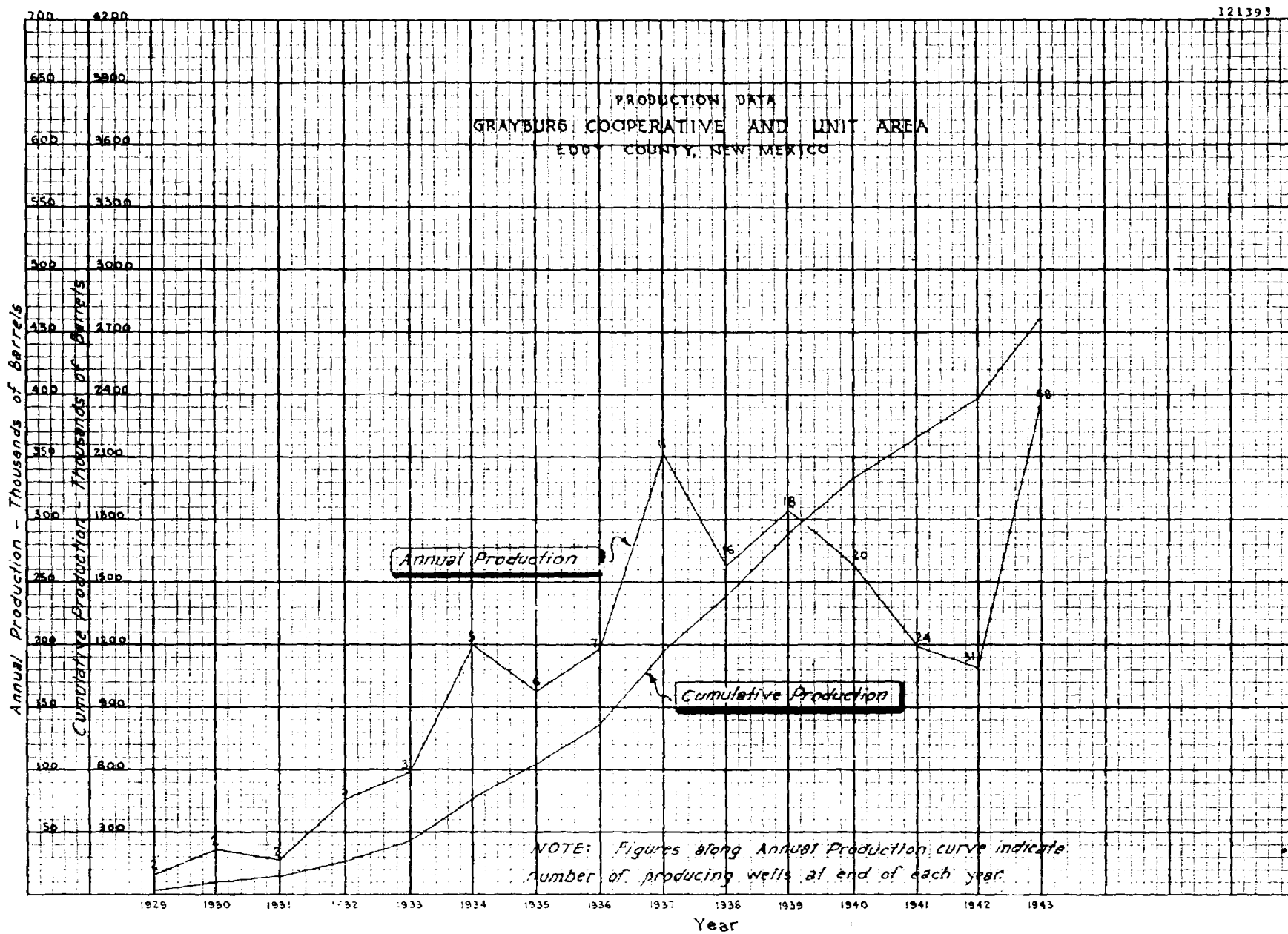
Production data.

To January 1, 1944, a total of 2,766,150 barrels of oil had been produced from 1,920 acres of proved oil land in the unit area, which represents an average recovery of approximately 1,440 barrels per acre. However, most of the wells in the area have been drilled in recent years, and one well that has been producing for almost 10 years has yielded more than 11,000 barrels per acre and still produces more than 40 barrels of oil per day.

The initial, cumulative, and present daily production data on each well in the unitized area are tabulated below:

OIL PRODUCTION DATA--GRAYBURG COOPERATIVE AND UNIT AREA

<u>Company</u>	<u>Lease</u>	<u>Well</u>	<u>Date of completion</u>	<u>Initial production Barrels, dly.</u>	<u>Cumulative production through 1943- Barrels</u>	<u>Average production December 1943- Barrels, daily</u>
Grayburg	Burch	2-A	6-27-29	50	142,631	14.5
"	"	3-A	5 -6-32	520	255,966	17.2
"	"	4-A	1-15-34	425	373,386	35.1
"	"	5-A	5 -5-34	525	453,996	46.2
"	"	6-A	4-11-35	341	196,109	30.6
"	"	7-A	8-30-36	440	139,879	31.2
"	"	8-A	11 -4-37	20	18,391	3.3
"	"	9-A	12-10-37	25	29,200	13.7
"	"	10-A	2 -5-38	35	19,797	3.2
"	"	11-A	4-11-38	105	65,186	14.2
"	"	12-A	7-11-39	175	92,455	25.6
"	"	13-A	12-20-39	206	60,681	18.7
"	"	14-A	11-30-43	16	243	7.8
"	"	1-B	8-27-41	32	23,032	25.1
"	"	2-B	11- 9-41	80	24,698	26.4
"	"	3-B	1 -9-42	150	23,406	26.0
"	"	4-B	3 -7-42	70	19,990	26.2
"	"	5-B	7 -2-42	125	17,637	26.1
"	"	6-B	4-29-42	100	24,359	47.6R
"	"	7-B	9-14-42	206	18,380	37.1
"	"	8-B	5-26-43	125	10,702	36.8
"	Keely	2-A	11 -5-29	280	303,663	18.3
"	"	3-A	7-29-37	155	73,728	18.3
"	"	4-A	3-21-38	100	47,951	22.7
"	"	5-A	6 -3-40	28	25,753	23.0
"	"	6-A	9-29-43	200	4,795	53.3R
"	"	7-A	9-29-43	200	4,763	51.4R



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Grayburg	Keely	8-A	11-11-43	700	2,631	50.6R
"	"	9-A	12-11-43	100	839	52.4R
"	"	1-B	5-5-43	250	10,528	41.3R
"	"	2-B	5-24-43	338	10,142	41.7R
"	"	3-B	9-8-43	360	5,240	43.6R
Western	Burch	1-C	6-3-38	50	33,937	11.8
"	"	2-C	9-14-38	26	33,856	11.9
"	"	3-C	9-21-41	30	18,965	15.9
"	"	4-C	12-9-42	32	8,430	17.0
"	"	5-C	1-20-43	130	12,321	22.9
"	"	6-C	2-14-43	125	11,654	33.3
"	"	7-C	4-26-43	30	4,597	16.3
"	"	8-C	5-10-43	50	3,933	15.3
"	Keely	1-C	9-17-37	108	78,681	30.4
"	"	4-C	11-12-42	215	17,510	39.5R
"	"	5-C	3-13-43	354	12,406	39.5R
"	"	6-C	2-27-43	262	14,106	45.7R
"	"	7-C	6-22-43	240	9,283	46.3R
"	"	8-C	8-12-43	300	6,314	46.1R
Total					2,766,150	

Note: R after Average production for December 1943 indicates that well production was restricted by proration.

Oil analyses.

The following analyses were made by the U. S. Geological Survey at Casper, Wyoming, in accordance with the U. S. Bureau of Mines Hempel method. Although one sample of oil was taken from zone 9 and the other sample represents a mixture of oil from zones 9 and 10, the analyses are quite similar, indicating the probability that intercommunication does exist between some of the zones, at least in certain areas.

Sample No. 44-038, Grayburg Oil Co. No. 6-A Keely well, sec.
24, T. 17 S., R. 29 E. From lower portion zone 9 and zone 10.

Specific Gravity..	.836	A.P.I. Gravity	37.8
Percent sulphur...	.90	Pour point....	Below 5° F.
Saybolt Univ. Viscosity at 70° F.	43 sec.	Color.....	Green
Saybolt Univ. Viscosity at 100° F.	39 sec.	Base.....	Intermediate

DISTILLATION, BUREAU OF MINES, HEMPEL METHOD

Distillation at atmospheric pressure 632 mm.

First Drop 75° F.

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Fraction No.	Cut at °F.	Per cent	Sum percent	°A.P.I. 60° F.	C.I.	S.U. Visc. 100° F.	Cloud Test °F.
1	122	2.5	2.5	81.0	--		
2	167	4.4	6.9	74.2	18		
3	212	7.2	14.1	65.9	22		
4	257	8.5	22.6	57.2	29		
5	302	7.0	29.6	51.3	32		
6	347	4.5	34.1	47.8	32		
7	392	4.3	38.4	44.9	32		
8	437	5.3	43.7	42.6	32		
9	482	5.4	49.1	39.4	34		
10	527	6.0	55.1	36.2	36		

Distillation continued at 40 mm.

11	392	--	--	--	--		
12	437	5.8	60.9	30.8	40	46	25
13	482	4.7	65.6	28.9	42	56	45
14	527	4.3	69.9	27.0	44	78	65
15	572	6.4	76.3	25.2	46	134	85
Residuum		20.3	96.6	16.2			

Carbon residue of residuum 7.6% Carbon residue of crude 1.8%

APPROXIMATE SUMMARY

	Percent	°A.P.I. 60° F.	Viscosity, secs.
Light gasoline.....	14.1	70.9	
Total gasoline and naphtha.....	38.4	58.2	
Kerosene distillate.....	5.3	42.6	
Gas oil.....	16.4	35.6	Below 50
Nonviscous lubricating distillate.....	9.8	30.0 - 26.3	50-100
Medium lubricating distillate.....	6.4	26.3 - 23.2	100-200
Viscous lubricating distillate.....	---	---	Above 200
Residuum.....	20.3	16.2	
Distillation loss.....	3.4	---	

Sample No. 44-039, Grayburg Oil Co. No. 8-B Burch well, sec. 23,
T. 17 S., R. 29 E. From zone 9.

Specific gravity... .839 A.P.I. gravity... 37.2
 Percent sulphur.... .97 Pour point..... Below 5° F.
 Saybolt Univ. Viscosity at 70° F. 42 sec. Color..... Green
 Saybolt Univ. Viscosity at 100° F. 39 sec. Base..... Intermediate

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DISTILLATION, BUREAU OF MINES, HEMPEL METHOD

Distillation at atmospheric pressure 635 mm. First Drop 93° F.

Fraction No.	Cut at °F.	Per cent	Sum percent	°A.P.I. 60° F.	C.I.	S.U. Visc. 100° F.	Cloud Test °F.
1	122	1.1	1.1)				
2	167	3.8	4.9)	71.2	--		
3	212	7.6	12.5	65.3	23		
4	257	7.7	20.2	56.4	30		
5	302	4.5	24.7	50.9	33		
6	347	6.6	31.3	48.3	31		
7	392	4.7	36.0	45.6	31		
8	437	5.3	41.3	43.0	31		
9	482	5.5	46.8	39.4	34		
10	527	6.3	53.1	36.2	36		

Distillation continued at 40 mm.

11	392	0.1	53.2)				
12	437	6.0	59.2)	31.0	40	48	25
13	482	5.0	64.2	28.9	42	56	45
14	527	4.1	68.3	26.8	44	78	65
15	572	6.2	74.5	25.2	46	124	85

Residuum 21.8 96.3 16.1

Carbon residue of residuum 7.6% Carbon residue of crude 1.9%

APPROXIMATE SUMMARY

	Percent	°A.P.I. 60° F.	Viscosity, secs.
Light gasoline.....	12.5	67.5	
Total gasoline and naphtha.....	36.0	56.4	
Kerosene distillate.....	5.3	43.0	
Gas oil.....	16.1	36.0	Below 50
Nonviscous lubricating distillate.....	11.2	30.4 - 26.1	50-100
Medium lubricating distillate.....	5.8	26.1 - 24.3	100-200
Viscous lubricating distillate.....	---	---	Above 200
Residuum.....	21.8	16.1	
Distillation loss.....	3.7	---	

Gas-oil ratios

Gas-oil ratios in the unit area range from 500 to 4300 cubic feet of gas per barrel of oil. During January 1944 on test, the total gas volume

from the unit area averaged 1,354,000 cubic feet with an average production of 1,425 barrels of oil per day, and a gas-oil ratio for the unit of 947 cubic feet per barrel.

Bottom-hole pressures.

From the bottom-hole pressure map it may be noted that bottom-hole pressures in the unit area range from a low of 230 to a high of 1,018 pounds per square inch. The average bottom-hole pressure for the area has been computed as approximately 530 pounds per square inch during December 1943. For purposes of this report, low, intermediate, and high pressure areas have been designated and are indicated by appropriate hachures on the bottom-hole pressure map. The low pressure area includes all wells with bottom-hole pressures of less than 400 pounds and the high pressure area includes all wells with more than 700 pounds.

Pressure maintenance program.

The Grayburg Unit Association contemplates the initial injection of about one million cubic feet of available casing-head gas per day recovered from the producing oil wells in the unit area. For this purpose there have been installed three compressors with a total of 330 horse power and a capacity of 1,250,000 cubic feet of gas operating under 20-pound intake pressure and 800-pound discharge pressure. Initial injection pressures are not expected to exceed 700 pounds per square inch.

The determination of wells most suitable for gas injection is a matter of prime importance in the inception of any pressure maintenance program. With the volume of gas available and the number of producing wells in the unit area it was determined that five oil wells could reasonably be converted into input wells to give maximum recovery of oil for the amount of gas used. It will undoubtedly be necessary to use additional input wells as more oil wells are completed and more gas becomes available for injection within the unit area.

Criteria for determination of gas input wells include such factors as structure, bottom-hole pressures, gas-oil ratios, lithology, permeability, and other characteristics of the producing formation. Thorough study and detailed correlations were made of sample, electric, and drillers' logs, as well as all other available data obtained of the area, before the five proposed gas injection wells indicated on the bottom-hole pressure map were selected. The zones from which the wells are producing oil were considered, it being the object to centralize each injection well in a group of wells in the same zone or zones. As stated before, practically all the oil produced in the unit area is obtained from zones 9 and 10 and consideration was given to the injection of gas into those two zones only, so that the gas would not be dissipated into barren zones or upper zones of porosity or sands that could act in some instances as "thief sands" as indicated by Dowell Electric Pilot surveys. To insure this further, it is planned to inject gas through tubing with packers set in the injection wells immediately above zone 9.

Four of the five injection wells selected are located between low pressure areas that have been producing for some time, and high pressure areas recently drilled. It is anticipated that this will serve to retard the rate of decline in high pressure areas and at the same time build up or repressure the low pressure areas, thereby materially benefitting the recovery of oil in the entire unit area.

It is intended that the average field gas-oil ratio shall be maintained below 2,000 cubic feet per barrel, and that where ratios become excessive the oil production will be adjusted, remedial work done, or the offending wells shut in to conserve gas and maintain reservoir energy.

Estimate of future production.

The success of a pressure maintenance project is measured by the amount of oil recovered after gas injection as compared with a reasonable estimate of the amount of oil that would have been recovered without the return of gas to the producing formations.

Two decline curves have been prepared, that should aid in evaluating this increased production at a later date, namely, a bottom-hole pressure decline curve and a production decline curve. All data and varying conditions were considered in arriving at the information plotted on these curves, and it is believed that they represent average conditions for the unit area. After injection of gas, it is quite probable that both curves will assume new rates of decline. The intervals between the new curves and those that we would normally expect under primary producing methods will represent the benefits derived from the secondary recovery project.

The following tabulation has been prepared from the production decline curve, and provides in readily usable form an estimate of normally expected future production, based on primary recovery methods, for wells of different potentials. However, in using this tabulation, it is necessary that the "Present daily production" be construed as the settled average daily capacity of a well over a period of several weeks rather than the flush potential as determined by a short test.

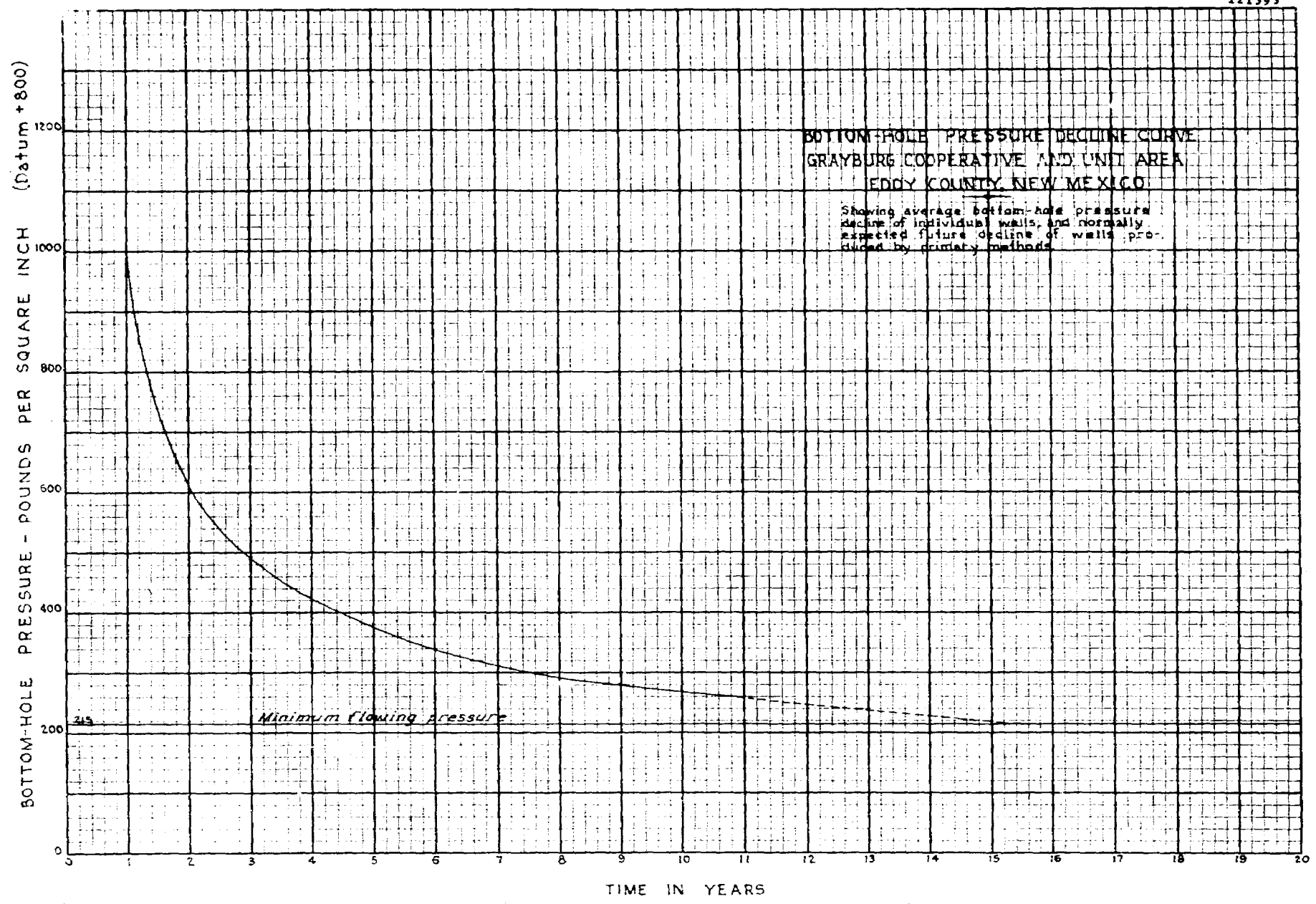
ESTIMATED FUTURE PRODUCTION CHART FOR INDIVIDUAL WELLS

Based on primary recovery methods and
economic limit of three barrels of oil daily.

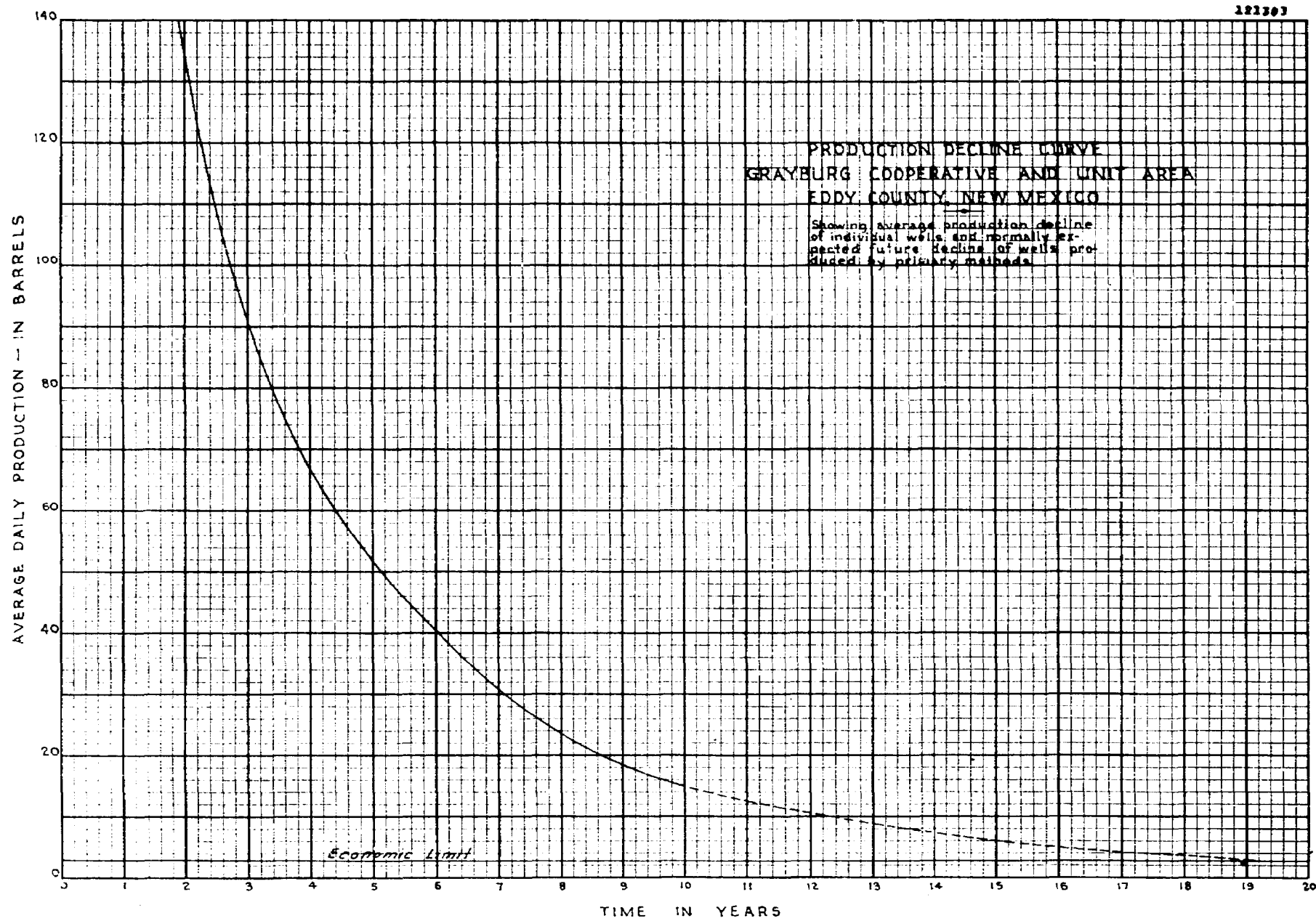
Present daily production (Bbl.)	Estimated Future life (Yr.-Mo.)	Estimated future production (Bbl.)
150	17 - 10	186,643
125	17 - 4	162,553
100	16 - 10	141,018
90	16 - 6	130,068
80	16 - 1	116,414
70	15 - 8	105,491
60	15 - 1	91,226

121393

50	14 - 4	76,535
45	13 - 10	67,714
40	13 - 4	60,231
35	12 - 11	54,300
30	12 - 4	47,700
25	11 - 8	41,008
20	10 - 10	34,043
15	9 - 4	24,645
10	7 - 2	14,988
5	3 - 0	4,270

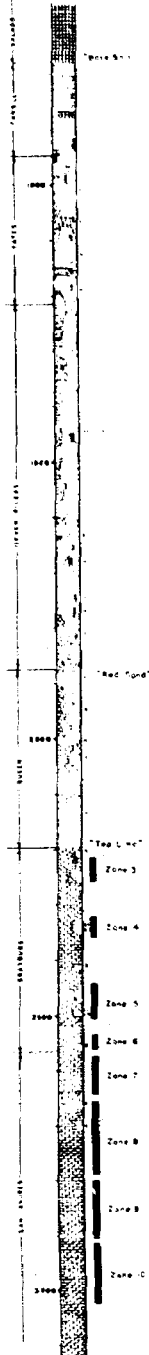


122303



TYPE LOG

Showing Correlations
B. May 1944



See also the correlation chart on the inside cover of this report.

EXPLANATION

- Limestone or Dolomite
- Sandstone
- Gypsum
- Salt
- Shale or other material
- Reddish clay or sandstone
- Clay shale
- Sandstone and the limestone
- Basaltic

LEGEND

- LOCATION
- DRILLING WELL
- DRILLING WELL SUSPENDED
- PRODUCING OIL WELL
- ABANDONED OIL WELL
- GAS WELL
- ABANDONED GAS WELL
- COMBINATION OIL & GAS WELL
- ABANDONED COMBINATION WELL
- DRY HOLE
- GRAYBURG COOPERATIVE & UNIT AREA

SCALE - MILES

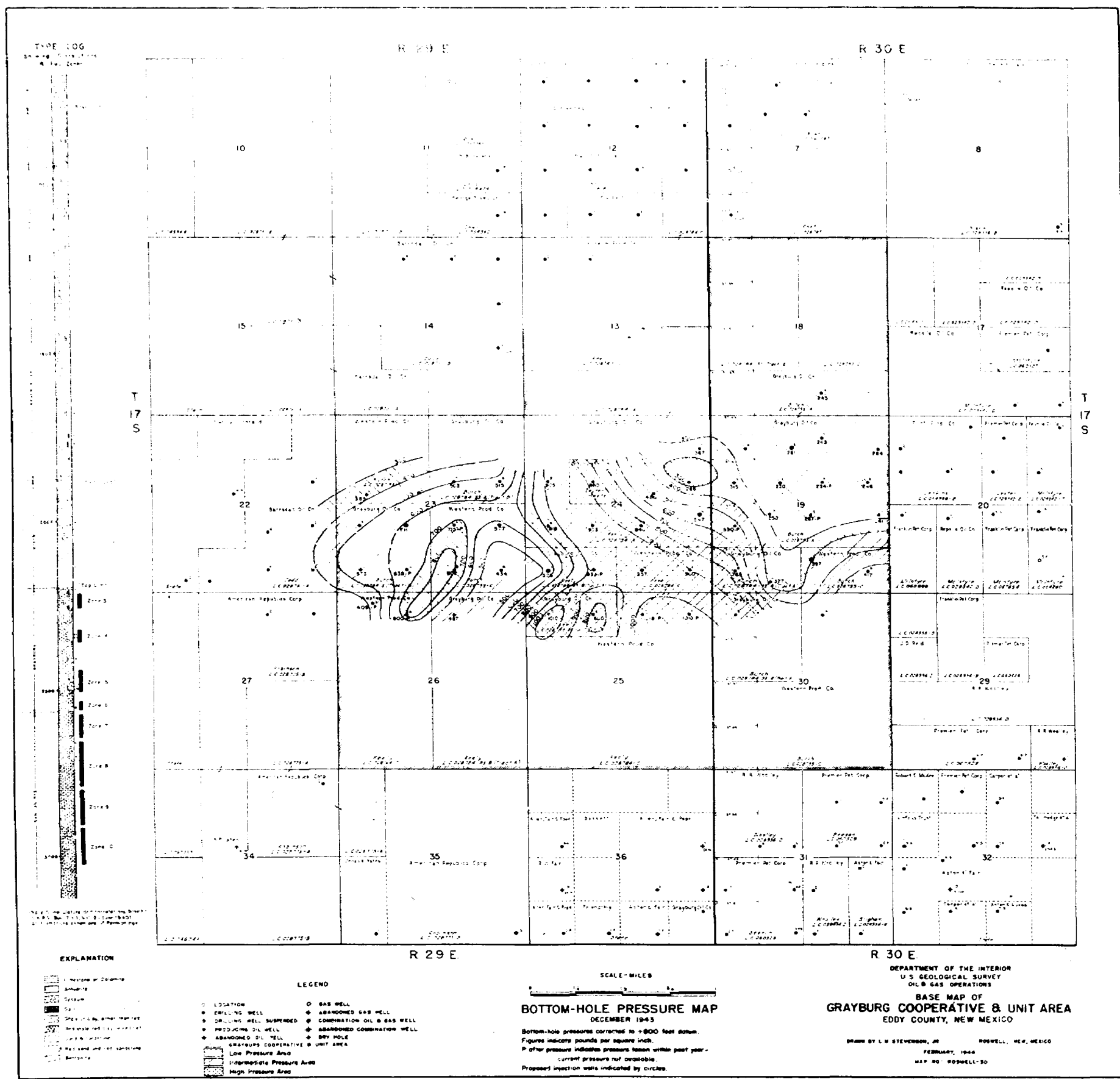


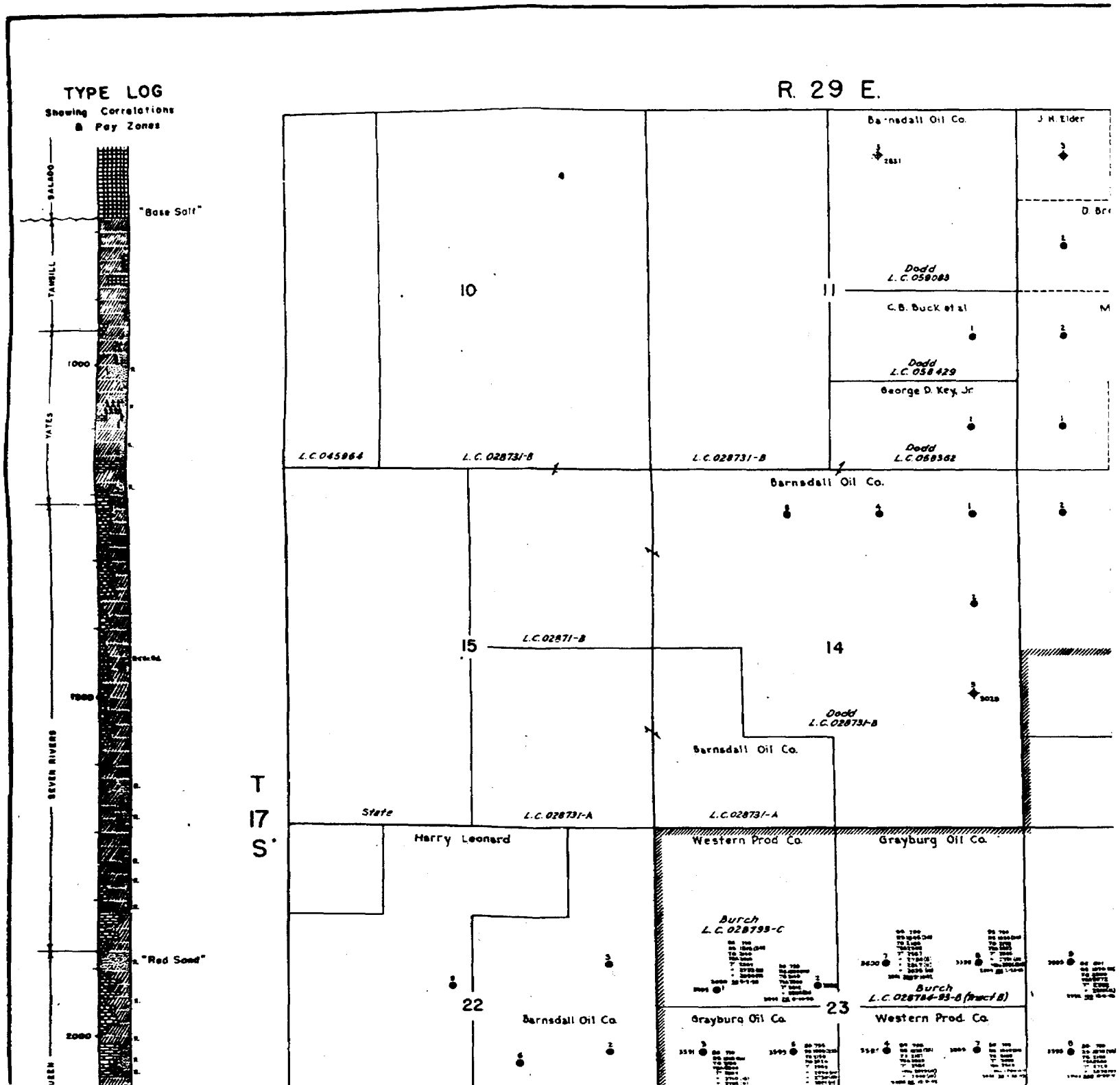
ZONE MAP

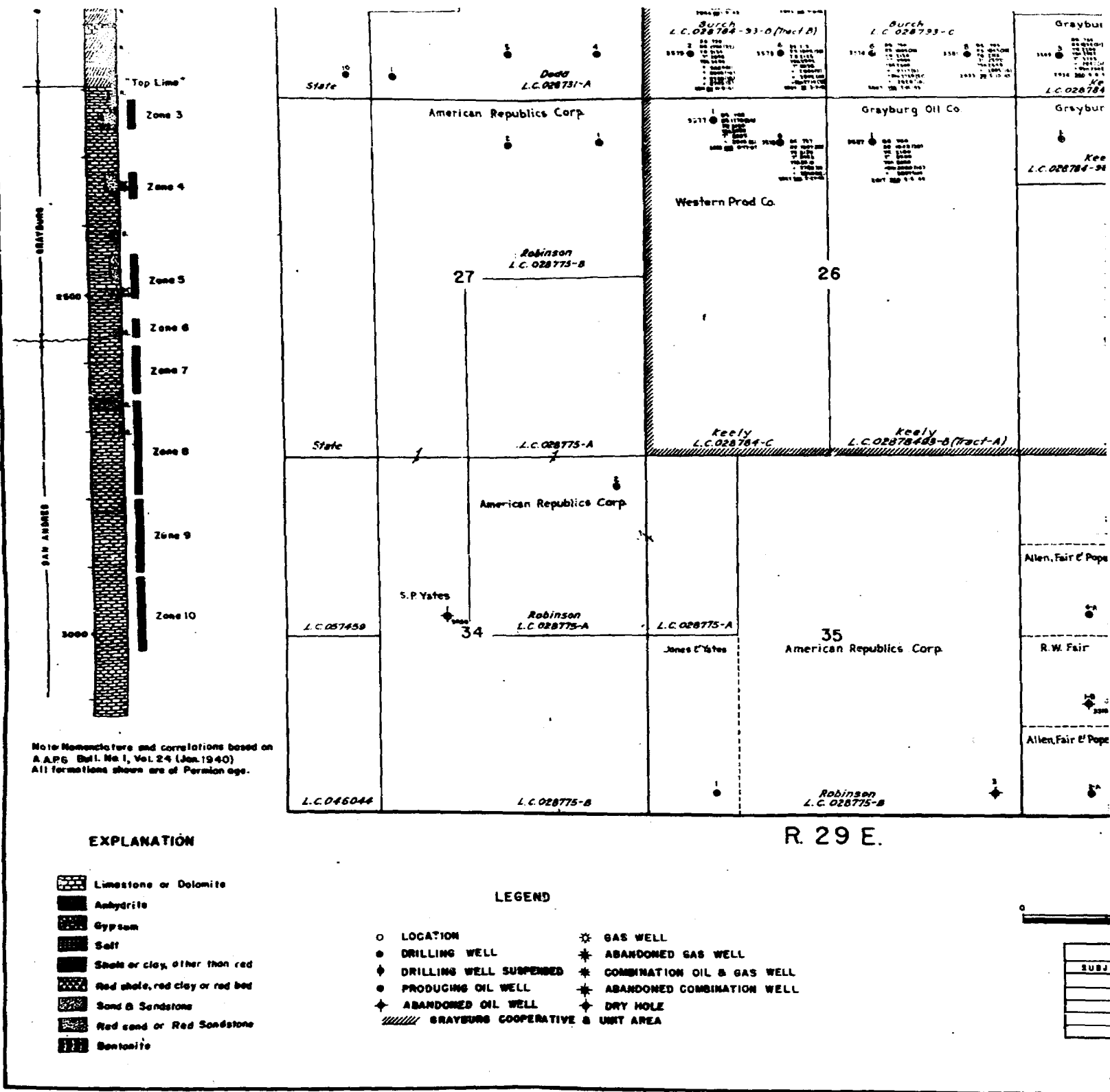
Large figures indicate producing zones
U or L indicates production in upper or
lower portion of zone
Minus sign indicates good show of oil
but not main pay zone

DEPARTMENT OF THE INTERIOR U.S. GEOLOGICAL SURVEY OIL & GAS OPERATIONS BASE MAP OF GRAYBURG COOPERATIVE & UNIT AREA EDDY COUNTY, NEW MEXICO

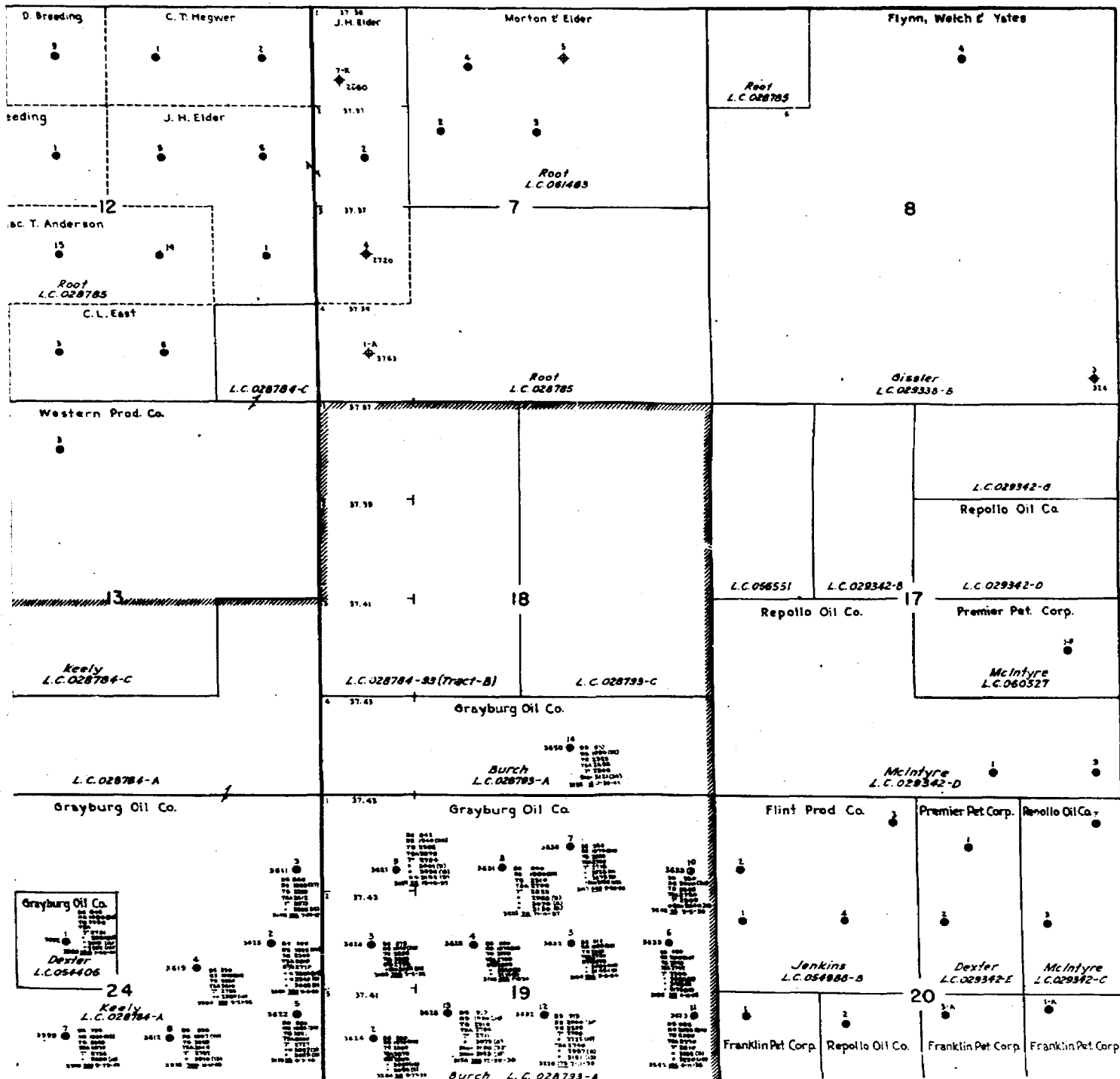
DRAWN BY L. W. STEVENSON, JR. POWELL, NEW MEXICO
FEBRUARY, 1944
MAP NO. 20-ROBELL-30



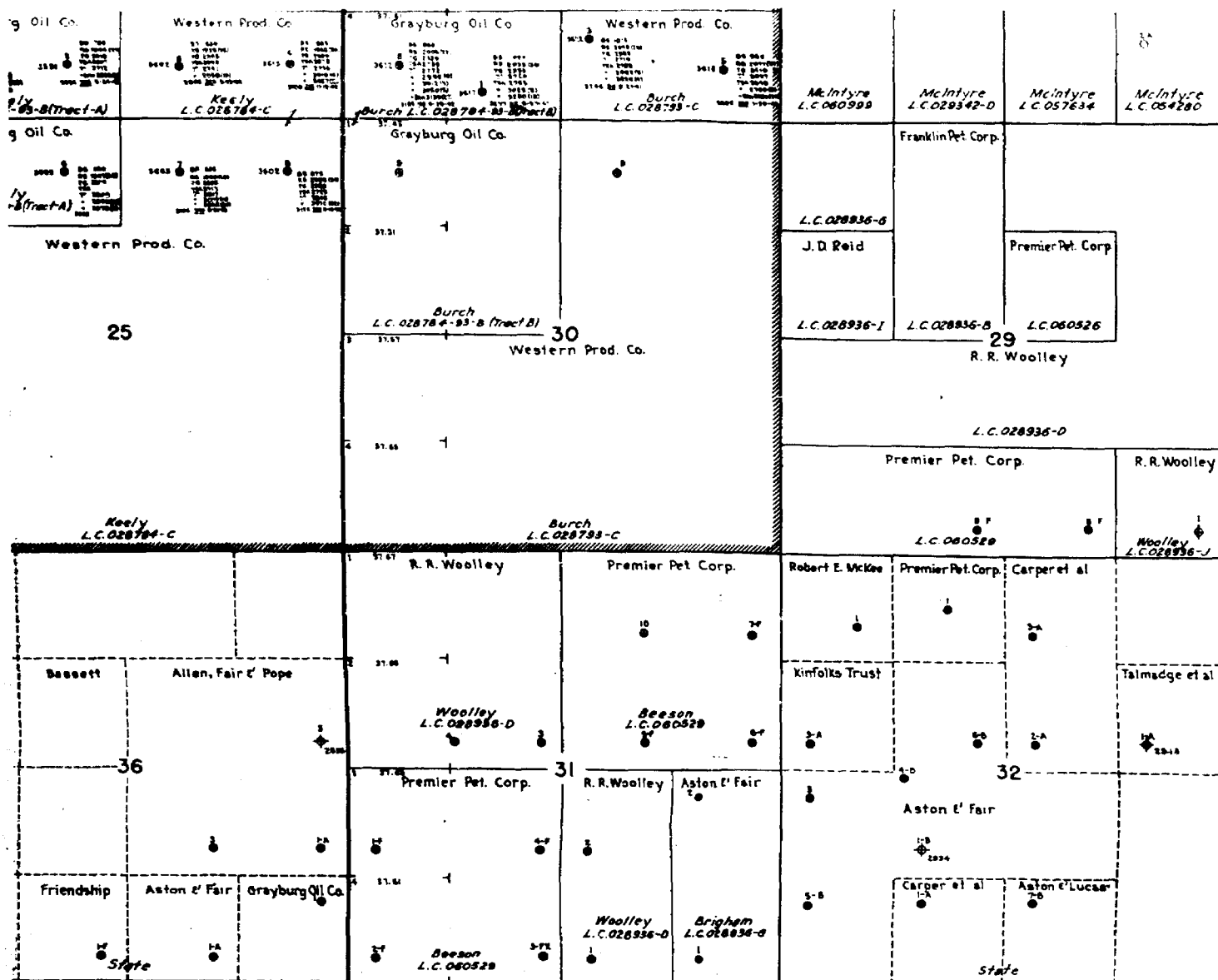




R. 30 E.



T
17
S



R. 30 E.

SCALE - MILES



REVISIONS		
NO.	DATE	REVISION BY

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
OIL & GAS OPERATIONS
WELL RECORD MAP OF
GRAYBURG COOPERATIVE & UNIT AREA
EDDY COUNTY, NEW MEXICO

SCALE: 1" = 1000'

DRAWN BY L.M. STEVENSON, JR. ROSWELL, NEW MEXICO

FEBRUARY 1944

MAP NO: ROSWELL-31

DOMESTIC SERVICE	
Check the class of service desired; otherwise this message will be sent at a full rate telegram	
FULL RATE TELEGRAM	SERIAL
DAY LETTER	NIGHT LETTER

WESTERN UNION

JOSEPH L. EGAN, PRESIDENT

1306

INTERNATIONAL SERVICE	
Check the class of service desired; otherwise this message will be sent at the full rate	
FULL RATE	DEFERRED
CODE	NIGHT LETTER

NO. WDS.-CL. OF SVC.	PD. OR COLL.	CASH NO.	CHARGE TO THE ACCOUNT OF	TIME FILED
			OIL CONSERVATION COMMISSION	

Send the following message, subject to the terms on back hereof, which are hereby agreed to

SANTA FE, N. M. DECEMBER 21, 1948

MR. JOHN E. COCHRAN JR
COCHRAN AND SIEGENTHALER
ARTESIA, NEW MEXICO

ORDER APPROVED EXACTLY AS SUBMITTED. WILL AIRMAIL SIGNED COPY
DECEMBER 22.

R. R. SPURRIER

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it repeated, that is, telegraphed back to the originating office for comparison. For this, one-half the repeated message rate is charged in addition. Unless otherwise indicated on its face, this is an unrepeatable message and, for as much, in consideration whereof it is agreed between the sender of the message and this Company as follows:

1. The Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the repeated-message rate beyond the sum of five hundred dollars; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the repeated-message rate beyond the sum of five thousand dollars, unless specially valued; nor in any case for delays arising from unavoidable interruption in the working of its lines.
2. In any event the Company shall not be liable for damages for mistakes or delays in the transmission or delivery, or for the non-delivery, of any message, whether caused by the negligence of its servants or otherwise, beyond the actual loss, not exceeding in any event the sum of five thousand dollars, at which amount the sender of each message represents that the message is valued, unless a greater value is stated in writing by the sender thereof at the time the message is tendered for transmission, and unless the repeated-message rate is paid or agreed to be paid, and an additional charge equal to one-tenth of one per cent of the amount by which such valuation shall exceed five thousand dollars.
3. The Company is hereby made the agent of the sender, without liability, to forward this message over the lines of any other company when necessary to reach its destination.
4. Except as otherwise indicated in connection with the listing of individual places in the filed tariffs of the Company, the amount paid for the transmission of a domestic telegram or an incoming cable or radio message covers its delivery within the following limits: In cities or towns of 5,000 or more inhabitants where the Company has an office which, as shown by the filed tariffs of the Company, is not operated through the agency of a railroad company, within two miles of any open main or branch office of the Company; in cities or towns of 5,000 or more inhabitants where, as shown by the filed tariffs of the Company, the telegraph service is performed through the agency of a railroad company, within one mile of the telegraph office; in cities or towns of less than 5,000 inhabitants in which an office of the Company is located, within one-half mile of the telegraph office. Beyond the limits above specified the Company does not undertake to make delivery, but will endeavor to arrange for delivery as the agent of the sender, with the understanding that the sender authorizes the collection of any additional charge from the addressee and agrees to pay such additional charge if it is not collected from the addressee. There will be no additional charge for deliveries made by telephone within the corporate limits of any city or town in which an office of the Company is located.
5. No responsibility attaches to this Company concerning messages until the same are accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.
6. The Company will not be liable for damages or statutory penalties in the case of any message except an intrastate message in Texas where the claim is not presented in writing to the Company within sixty days after the message is filed with the Company for transmission, and in the case of an intrastate message in Texas the Company will not be liable for damages or statutory penalties where the claim is not presented in writing to the Company within ninety-five days after the cause of action, if any, shall have accrued; provided, however, that neither of these conditions shall apply to claims for damages or overcharges within the purview of Section 415 of the Communications Act of 1934.
7. It is agreed that in any action by the Company to recover the tolls for any message or messages the prompt and correct transmission and delivery thereof shall be presumed, subject to rebuttal by competent evidence.
8. Special terms governing the transmission of messages according to their classes, as enumerated below, shall apply to messages in each of such respective classes in addition to all the foregoing terms.
9. No employee of the Company is authorized to vary the foregoing.

10-2

CLASSES OF SERVICE

DOMESTIC SERVICES

FULL RATE TELEGRAMS

A full rate expedited service.

DAY LETTERS

A deferred service at lower than the full rate.

SERIALS

Messages in sections during the same day.

NIGHT LETTERS

Accepted up to 2 A.M. for delivery not earlier than the following morning at rates substantially lower than the full rate telegram or day letter rates.

CABLE SERVICES

FULL RATE CABLES

The standard fast service at full rates. May be written in any language that can be expressed in Roman letters or in cipher.

CODE (CDE)

A fast message service consisting of words formed without condition or restriction, counted at 5 characters per word. Minimum charge of 5 words applies.

DEFERREDS (LC)

Plain language messages, subject to being deferred in favor of full rate and CDE messages.

NIGHT LETTERS (NLT)

Overnight plain-language messages. Minimum charge of 25 words applies.

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

JOSEPH L. EGAN
PRESIDENT

1201

DL - Day Letter
NL - Night Letter
LC - Deferred Cable
NLT - Cable Night Letter
Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

JOHN E COCHRAN JR=

$$: 164 =$$

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

LEA COUNTY OPERATORS COMMITTEE

DRAWER I

HOBBS, NEW MEXICO

October 23, 1948

File: GHC-2213-310.17

Re: Case No. 164 -

In the matter of the Application of the Grayburg Oil Company of New Mexico, and the Western Production Company, Inc. for an Order granting Permission to Unitize Certain Tracts within the Boundaries of the Grayburg Cooperative and Unit Area, in Township 17 South, Ranges 29 and 30 East, N.M.P.M., in the Grayburg-Jackson Pool of Eddy County, New Mexico for Proration and Allowable Purposes.

A I R M A I L

Mr. R. R. Spurrier
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Dear Sir:

At the hearing held on July 29, 1948, on the application of the Grayburg Oil Company and the Western Production Company, Inc. for an order granting permission to drill certain unorthodox wells and to allocate the allowable on a basic lease basis, Mr. J. O. Seth, representing the Lea County Operators Committee, stated that we did not have any objection to the granting of unorthodox locations, and requested that action of the Commission regarding an allocation of allowables be deferred.

The Grayburg Oil Company and the Western Production Company, Inc. have submitted a revised application to the Commission covering the allocation of allowables on the leases affected, which was forwarded to the Executive Committee of the Lea County Operators Committee with Mr. C. G. Staley's letter of September 27, 1948. The Executive Committee, after reviewing the revised application, have voted 6 to 1 that they have no objection to this application in its present form.

The revised application has been sent to all operators under date of October 15, 1948, and any operator wishing to do so may enter an objection to the proposed order of the Grayburg Oil Company and Western Production Company, Inc. at the hearing to be held on October 28.

Yours very truly,



G. H. Card, Chairman

GHC:gp
cc: J.O.Seth
John E. Cockran, Jr.

Charge to the account of **OIL CONSERVATION COMMISSION**

CLASS OF SERVICE DESIRED	
TELEPHONE	CABLE
DAY LETTER	ORDINARY
NIGHT LETTER	URGENT
DEFERRED	DEFERRED
NIGHT LETTER	NIGHT LETTER
SUP	SUP
TELEGRAM	TELEGRAM

WESTERN UNION 1206-B

R. B. WHITE
PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

J. C. WILLEVER
FIRST VICE-PRESIDENT

CHECK

ACCOUNTING INFORMATION

TIME FILED

Please check class of service desired; otherwise the message will be transmitted as a telegram or ordinary telegram.

Send the following telegram, subject to the terms on back hereof, which are hereby agreed to

16 November 1948

MR. JOHN COCHRAN
CARPER BLDG.,
ARTESIA, NEW MEXICO

ORDER NO. 791 COVERS CASE 164

OIL CONSERVATION COMMISSION

R. R. SPURRIER - DIRECTOR

ALL MESSAGES TRANSMITTED BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To send a message by this company, the sender must agree to the following terms: For this, one-half the rate of the message is charged. The sender must also agree to the following terms: For this, one-half the rate of the message is charged.

1. The Company shall not be responsible for any delay in the transmission of any message, whether caused by the sender or by the Company, or for any error in the transmission of any message, whether caused by the sender or by the Company.
2. The Company shall not be responsible for any delay in the transmission of any message, whether caused by the sender or by the Company, or for any error in the transmission of any message, whether caused by the sender or by the Company.
3. The Company shall not be responsible for any delay in the transmission of any message, whether caused by the sender or by the Company, or for any error in the transmission of any message, whether caused by the sender or by the Company.
4. Domestic messages shall be transmitted by the Company's own lines, and shall be delivered to the office of the recipient within one mile of such office, or to the office of the sender, if the sender so requests, at the sender's expense, and within one mile of such office, if the sender so requests, at the sender's expense.
5. The Company shall not be responsible for any delay in the transmission of any message, whether caused by the sender or by the Company, or for any error in the transmission of any message, whether caused by the sender or by the Company.
6. The Company shall not be responsible for any delay in the transmission of any message, whether caused by the sender or by the Company, or for any error in the transmission of any message, whether caused by the sender or by the Company.
7. It is agreed that the Company shall not be responsible for any delay in the transmission of any message, whether caused by the sender or by the Company, or for any error in the transmission of any message, whether caused by the sender or by the Company.
8. The Company shall not be responsible for any delay in the transmission of any message, whether caused by the sender or by the Company, or for any error in the transmission of any message, whether caused by the sender or by the Company.
9. No employee of the Company is authorized to vary the foregoing.

THE WESTERN UNION TELEGRAPH COMPANY
INCORPORATED
N. B. WHITE, PRESIDENT

DOMESTIC SERVICES		CABLE SERVICES	
TELEGRAMS	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
A full-rate expedited service	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
DAY LETTERS	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
A deferred service at least than the standard telegram rate	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
SERIALS	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
Messages sent in serials during the same day	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
OVERNIGHT TELEGRAMS	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
Accepted up to 2 A.M. for delivery not earlier than the following morning at rates substantially lower than the standard telegram rate	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
SHIP RADIOGRAMS	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE
A service to ships at sea, by means of the company's radio stations, at rates which may be used.	QUICK SERVICE	QUICK SERVICE	QUICK SERVICE

THERE IS A SPECIAL LOW-RATE WESTERN UNION SERVICE FOR EVERY SOCIAL NEED	
Telegrams of the categories listed at the right, to any Western Union destination in the United States	
TELEGRAMS OF PRESCRIBED FIXED TEXT — — — — —	23¢
TELEGRAMS OF SENDER'S OWN COMPOSITION First 15 words — — — — —	35¢
LOCAL CITY TELEGRAMS — — — — —	20¢
TOURATE TELEGRAMS, for TRAVELERS. First 15 words — — — — —	35¢
(Additional Words, 2¢ each)	

GREETINGS AT	
Christmas	New Year
Valentine's Day	Mother's Day
Jewish New Year	Thanksgiving
Easter	Father's Day
CONGRATULATIONS ON	
Anniversaries	Weddings
Birthdays	Commencement
	Birth of a Child
MISCELLANEOUS	
Bon Voyage telegrams	"Pop" telegrams
Notograms (No 35¢ rate)	

ASK AT ANY WESTERN UNION OFFICE OR AGENCY FOR FULL INFORMATION

OFFICE OF PUBLICITY
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

The State of New Mexico by its Oil Conservation Commission hereby gives notice, pursuant to law, of the following public hearing to be held October 23, 1943, beginning at 10:00 o'clock A.M. on that day in the City of Santa Fe, New Mexico.

STATE OF NEW MEXICO TO:

All named parties in the following cases, and notice to the public:

CASE 161

In the matter of application of Magnolia Petroleum Company for an order approving a proposed unit agreement for the development and operation of the Cass Ranch Unit Area consisting of 10,230.27 acres situated in Townships 19 and 20^{South}, Ranges 23 and 24 East, N.M.P.M. in Eddy County, New Mexico.

CASE 162

In the matter of the application of the New Mexico Oil Conservation Commission upon its motion at the suggestion of the Lea County Operators Committee that Paragraph "G" of Section 2 of Commission Order 637 known as the State Wide Proration Order be amended so as to read as follows:

- (g) At the beginning of each calendar month, the distribution or proration to the respective units in each pool shall be changed in order to take into account all new wells which have been completed and were not in the proration schedule during the previous calendar month. Where any well is completed between the first and last day of the calendar month, its unit shall be assigned an allowable in accordance with whether such unit is marginal or non-marginal, beginning at 7 A.M., on the date of completion and for the remainder of that calendar month.

CASE 164

In the matter of the application of Grayburg Oil Company of New Mexico, and Western Production Company, Inc. for an order granting permission to unitize certain tracts within the boundaries of the Grayburg Cooperative and Unit Area, in Township 17 South, Ranges 29 and 30 East, N.M.P.M., in the Grayburg-Jackson Pool of Eddy County, New Mexico for proration and allowable purposes.

Given under the seal of the Oil Conservation Commission of New Mexico at Santa Fe, New Mexico, on October 13, 1943.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

BY R. R. Spurr
R. R. SPURR, Secretary

Afternoon session of the
hearing before the Oil
Conservation Commission
of July 29, 1942.

MR. SETH: On behalf of the Lea County Operators we would like to return to Case 152, the Grayburg and Western Production Co. matter. The announced decision of the Commission we fear will establish a bad precedent or a precedent that might be troublesome. It may be right in this case. But this departure from a unit allowable to a lease allowable might cause all manner of complications, and as I understand that application would--the order of the Commission would authorize that in certain cases. I would like on behalf of the Lea County Operators to have an opportunity to get a copy of the transcript and be further heard. The unit allowable has been the rule in this State for so long and operated so well we question anything that might be a departure from it. As soon as we can get the transcript and a copy of the application, Lea County Operators will either ask for further hearing or withdraw their objections. I also want to call your attention to the fact that the notice gave no warning other than unorthodox location of wells. It comes to us entirely by surprise, and as a matter of fact, we couldn't hear one third of the testimony taken on the matter this morning. I hope the stenographer could hear more of it.

COMMISSIONER SPURRIER: Judge, your thought is to ask for the case to be continued?

MR. SETH: That's right.

COMMISSIONER SPURRIER: More or less indefinitely?

MR. SETH: We don't want to delay these people. We want a chance to study the transcript. I hope the stenographer heard more of it than we did sitting in the back.

COMMISSIONER SPURRIER: The objection, if there is any, is to the allowable or to the proration scheme, not to the drilling of the unorthodox locations?

MR. SETH: Not at all, no. We have no objection to that. That is what we thought the application was for.

COMMISSIONER MILES: I tried to question somebody on that. I wasn't sure that I understood it fully, too. This morning I thought that perhaps somebody would bring up some objections and I talked to some of the people later, and they said they didn't hear the testimony.

MR. SETH: The matter is two wells on more than a 40-acre allowable being produced through those two wells, as I understand the proposition.

MR. COCHRAN: If the Commission please, Grayburg and Western Production Co. regret that some of the people here didn't hear all the testimony this morning. We certainly want Lea County Operators to have a chance to review the testimony. However, naturally since there is no objection to the drilling of unorthodox locations, and since Grayburg has two rigs available, they would like to proceed with the drilling of the first two wells.

MR. SETH: No objection on our part to that.

MR. COCHRAN: And naturally also with reference to the allowable question, they would like that the matter not be continued for any longer time than possible because it is an extensive drilling program and they would like to know what their allowable position is. Now, with reference to Mr. Seth's remarks about the notice. Well, my observation has been and I believe the Commission will agree that in an application asking for any unorthodox location it always involves a question of allowable. I mean that appears to me to be part of the question itself. And it certainly wasn't Grayburg's or Western Production Co.'s idea that the notice not disclose fully everything that they intended to present. And I know that wasn't in the mind of the Commission when they prepared the notice. But we would like to go ahead with the drilling of these wells, and go into this allowable question further with the Lea County Operators at the earliest possible date. It may be that Mr. Morrell might have some suggestions with reference to this that might be helpful.

MR. MORRELL: If the Commission please, the thought occurs to me in view of the fact that I had considerable contact with the formulation and preparation of the agreement leading to the application to the Commission that I might be able to add some history and background and thoughts that might be helpful to the operators in Lea County.

I wonder though at this time whether to save the time of the Commission to allow you to proceed with the remainder of the cases on your docket and upon completion of those I would be glad to make several remarks for the benefit of the Lea County Operators.

COMMISSIONER MILES: Mr. Seth, you wanted an opportunity to study the testimony?

MR. SETH: Yes. It may be that under the circumstances Grayburg is entirely proper. But we don't know and we don't want a precedent established. That is our whole interest.

COMMISSIONER MILES: You will as soon as possible -----

MR. SETH: As soon as we get it--the stenographer's transcript.

COMMISSIONER MILES: Then it will be continued until such time as you have an opportunity to study the transcript.

MR. SETH: All right.

MR. COCHRAN: The continuance will be only as to the allowable question? The unorthodox locations are granted?

COMMISSIONER MILES: Anybody else want to say anything?

MR. MORRELL: Will I have an opportunity to say something after the finish of this meeting?

COMMISSIONER MILES: Yes, sir.

MR. MORRELL: I may be able to answer some thoughts that have not been yet presented.

COMMISSIONER MILES: We will be glad to hear you. Call the next case.

(Mr. Graham reads the notice of publication in Case No. 155.)

MR. CARD: I represent Lea County Operators.

COMMISSIONER SPURRIER: Mr. Card, will you please come forward?

MR. CARD: I represent Lea County Operators Committee. This proposed order was considered at a meeting of the Lea County Operators Committee yesterday and it was unanimously--the motion was unanimously adopted that this proposed order should be presented to the Commission for adoption. Mr. Hosford,

MR. SETH: As the Commission sees, it is a paragraph to take the place of two paragraphs in the old Order 52. I would like to have Mr. Hosford sworn.

Eugene Hosford, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. SETH:

Q. Please state your name.

A. Eugene Hosford.

Q. By whom are you employed?

A. Gulf Oil Corporation.

Q. In what capacity?

A. Assistant Chief Production Engineer.

Q. You have never testified before this Commission.

A. No, sir.

Q. Will you please state your training and qualifications briefly? And experience.

A. I graduated from the University of Oklahoma with an engineering degree, and since that time, the last thirteen years, have been employed by Gulf as an engineer.

Q. In oil production?

A. In oil production.

Q. Have you been employed in Lea County?

A. No, sir, I have not.

Q. This order provides for the production of oil with a certain maximum per cent, above which they shall not go on any one day. Will you please state the substance of the order and your view as to whether it is proper or not?

A. In effect, the order states that any unit cannot be produced in excess of 125 per cent of its daily allowable in any one day. In my opinion, the amendment is a good one in that there is some question in the minds of the pipe line companies as to whether they should run available oil that would exceed the summation of the daily allowable to that date. Now this amendment will clarify this situation. It goes even further than that, and probably of more importance in that it is a conservation measure. First, it restricts the rate of flow, and does not permit excessive rates, and this in itself would be more conducive to the proper operation of the reservoir. Secondly, and even more important these days, is the fact that by distributing the

oil and gas production throughout the month in place of producing it in one or two days, or I should say in a week's time, it will make possible a more continuous flow of natural gas into the gasoline plants, and this in turn will permit more efficient operation of the plants and minimize wastage of gas.

Q. Under this order a man couldn't produce a week's allowable in one day?

A. That's right.

Q. It must be spread more or less evenly over the month?

A. That is correct.

Q. Do you favor its adoption as a conservation measure?

A. Yes, sir, I do.

MR. SETH: I believe that is all we have.

COMMISSIONER MILES: Anyone else have a question?

MR. MORRELL: I would like a clarification of that testimony just presented. A week's allowable could be made up in one day?

A. Could not be.

Q. I would also like a little clarification, if possible, for the benefit of those who were not in attendance of the Lea County Operators Committee meeting yesterday. There was one or two that made the comment that this would allow a well to be produced at the rate of 125 per cent normal allowable for each day in the calendar month. I don't think that this is what the order intends.

A. I don't believe the order says that, Mr. Morrell. I believe it says that the owner or operator shall not produce from any unit during any calendar month any more oil than the allowable production for such unit as shown by the proration schedule. That is pretty plain. The other provision is that it shouldn't be produced over 125 per cent of the daily allowable on any one day.

Q. I think your statement is correct. I just wanted to call your attention to the fact so that there wouldn't be any erroneous impressions.

COMMISSIONER MILES: You were reading from the order?

A. From the proposed amendment.

COMMISSIONER MILES: Anyone else? If not, we will take it under advisement. Next case.

(Mr. Graham reads the notice of publication in Case No. 156.)

MR. CARD: I represent Lea County Operators Committee. This proposed order likewise was considered yesterday in the meeting of the Lea County Operators and a motion was unanimously adopted that the proposed order be presented for adoption to the Commission.

R. S. Dewey, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. SETH:

Q. State your name, please.

A. R. S. Dewey.

Q. By whom are you employed?

A. I am employed by the Humble Oil and Refining Co.

MR. SETH: I don't think it is necessary to qualify Mr. Dewey before this Commission.

COMMISSIONER SPURRIER: No.

Q. Mr. Dewey, please state to the Commission the effect of this proposed amendment and your views as to whether it is a proper one for conservation of gas and oil.

A. As I understand the intent and purpose of this amendment, it is to establish a method of gas proration in an oil reservoir on a comparable and similar basis to the method now used for prorating oil in the same reservoir. When and if the Commission sees fit to adopt this amendment, the effect will be to automatically set a top allowable for gas production on a unit basis similar to the top allowable that is now in effect for oil production on a unit basis.

Q. It is applicable only to pools producing both oil and gas?

A. That's right. It is limited to those oil and gas reservoirs in which the Commission has deemed it advisable to set a limiting gas-oil ratio. It does not refer at all to gas fields where no oil production is available. I believe that it is a conservation measure in keeping with the statutes as outlined in Section 12, and that it will afford the operators an opportunity to more nearly recover their proportionate part of the oil and gas underlying their properties. I think the first paragraph has particular reference to the first paragraph of Section 12 of the statutes. I believe

that is all I have to say, unless somebody has a question they care to ask.

Q. The effect of it would be this, as I understand it. If the oil-gas ratio is 4,000, and the top unit allowable is 40 barrels, it would be 40 times 4,000, which would be all the gas from a field producing both oil and gas--all the gas they would be permitted to produce?

A. That is correct. If an operator on one unit had an oil well under the current proration schedule the Commission had established--a limiting ratio of 4,000 for that particular reservoir and the allowable of 40 barrels--then the operator on that adjoining tract of land who had a gas well would be permitted to produce 40 times 4,000 cu. ft. of gas per day.

Q. You welcome its adoption?

A. I do.

Q. And you appear here for the Lea County Operators?

A. I do.

MR. SETH: That is all.

COMMISSIONER SPURRIER: Mr. Dewey, just for the purpose of clarification for myself

COMMISSIONER MILES: And me to. (Laughter)

COMMISSIONER SPURRIER: And Governor Miles. I interpret what you have said, and Judge Seth has said, to mean that any pool in New Mexico, or Lea, Eddy and Chaves counties, New Mexico, that has a gas-oil ratio will fall within the meaning of this order. But that fields which do produce oil--well, for example Langlie-Mattix--and have no gas-oil ratio will not be affected by this order.

A. That is my interpretation of it. I think that is the intent of this amendment.

COMMISSIONER SPURRIER: While the Commission has no order which defines a gas well from an oil well, or a gas pool from an oil pool, this order has the purpose of preventing the withdrawal of excessive amounts of reservoir energy in the form of gas from a pool which is primarily an oil pool?

A. That's right. It is an order to equalize the withdrawals between operators, to give everybody the same opportunity to recover the fluids and benefit by the energy contained in the gas.

COMMISSIONER SPURRIER: That is all I have.

COMMISSIONER MILES: Anyone else have any statements or questions?

MR. MORRELL: Governor Miles, I would like to enter in the record that we do concur in that proposed order as to Federal lands. We are at the present time using that exact process. We have two wells on a Federal lease in the Square Lake pool producing solely gas from a definite oil-producing zone. And they have been allowed--although not taken the opportunity--to produce the allowable gas-oil ratio to the top oil allowable for that pool. We are doing the same thing for the Amon G. Carter well in Section 22 South, 37 East, which was recently completed as a gas producing well in the Drinkard zone. And they are limited to withdrawals exactly in accordance with this proposed order.

COMMISSIONER MILES: Anyone else wish to ask any questions or make any statements regarding this matter? If not, it will be taken under advisement.

MR. GRAHAM: May I ask one question? Judge Seth, this suggested amendment to the Commission's order. Where do you suggest it go?

MR. SETH: I don't think it is on the general Lea County order. That is where I think it belongs. 712.

MR. GRAHAM: 712, but no specific section?

MR. SETH: No, just a new rule.

MR. GRAHAM: That will be an addition to that order?

MR. SETH: Yes, that's right.

COMMISSIONER SPURRIER: I have a question. I believe that Order 52 applies to Lea County only. Is that right?

MR. SETH: We recommend that it apply to all of them.

COMMISSIONER SPURRIER: The recommendation is that this order apply to Lea, Eddy, and Chaves counties?

COMMISSIONER MILES: What was the answer, yes?

MR. SETH: Yes.

COMMISSIONER MILES: This case will be taken under advisement and we will proceed with the next case.

(Mr. Graham read the notice of publication in Case No. 110)

MR. CARD: I rephrase. Lea County Operators Committee. This proposed order covering Case No. 110 was also considered in the meeting of the Lea County Operators Committee yesterday. And a motion was unanimously adopted that the proposed order be submitted to the Commission for their adoption. We would like to call your attention to the fact that this proposed order doesn't cover gasoline plants and pipe line operations with regard to reclaiming waste oil, and it is suggested that the Commission appoint a committee representative of the gasoline plant operators to write a proposed order.

R. S. Dewey, recalled for further testimony, testified as follows:

DIRECT EXAMINATION BY MR. SETH:

Q. You are the same R. S. Dewey that testified in the preceding case?

A. I am.

Q. Have you gone over this proposed order?

A. I have.

Q. To get the record clear. It is limited entirely to lease oil, is it not?

A. That's right. It is an operator's order.

Q. And it has nothing to do with pipe cleaning, pipeline tank bottoms or the recovery of drippings from gasoline plants?

A. That's right. It might have some application in that it sets up some rules and regulations about cleaning plants and that sort of thing, but it is not applicable to either pipe lines or gasoline plants in the full sense.

Q. Will you discuss the purpose of the order and your view as to it, Mr. Dewey?

A. The purpose of this order, as I see it, is to set up the mechanics to be followed by the oil producer in the reclamation of tank bottoms and provide means that such reclaimed production can be disposed of under the regulations of the Commission. The proposed order sets out in detail the method of making reports to the Commission relative to the amount of reclaimed merchantable oil, and provides a means for a processing plant to dispose of the merchantable oil, all under the Commission's direction. It also sets out a means for any person or firm desiring to enter into the reclamation of tank bottoms as a business, how they shall proceed to obtain a permit from the Commission to engage in that business. Besides the reclamation of tank bottoms, it also provides for a means for reclaiming ~~merchantable~~ ~~oil that is incident to drilling in operations or otherwise lost in pits.~~ The order further defines the terms that are used in the main body of the order.

Q. It requires this reclaimed oil to be charged back against allowable of the unit, does it not?

A. That's right. Whatever oil merchantable oil accumulates and can be recovered from tank bottoms is subject to the royalty being paid by the producer.

Q. In your opinion, does it provide proper safeguards against any possible abuse through these reclamation plants?

A. I think that it will prevent abuse by these reclamation plants due to the fact that sworn statements are required from the operator or producer relative to the location and amount of tank bottoms that are to be processed. And also by the reclamation unit in the amount of recoverable merchantable oil that they obtain from such tank bottoms.

Q. It requires the operator of one of these reclamation plants to give bond to comply with the law?

A. That's right. His charter can be revoked.

Q. His permit is good only for one year and has to come up for review of the situation every year. Is that right?

A. That's right.

MR. SETH: I believe that is all I have.

COMMISSIONER MILES: Anybody else have any questions or statements regarding the matter?

MR. FARMARISS: If the Commission please. Mr. Dewey, under rule 1, section d, the first sentence.

COMMISSIONER MILES: What are you referring to now?

MR. FARMARISS: Rule , section d. In this section the following words appear;

"Nothing contained in this Order shall apply to tank bottoms used on the lease from which the tank bottoms accumulated." Is this construed to mean that if a tank is cleaned and the bottom used on the lease, no tank cleaning permit is necessary or must be filed with the Commission, and that there shall be no charge back of any allowable in this instance?

A. That is my understanding of it, Mr. Famariss. That is, if the operator wants to clean his own tanks, and the oil is not disposed of except in the regular manner similar to any oil produced on the lease. The operator doesn't have to get a permit to clean his tanks.

Q. What do you mean by if it is disposed of in the regular manner?

A. I think under C-110, the regular form that the operator....

Q. Isn't that taken care of in the second part, "or to the treating of tank bottoms on the lease by the producer or operator where the merchantable oil recovered therefrom is disposed of through a duly authorized transporter as shown on Form C-110 filed with the Commission." Is that particular instance permitting the producer the rightful liberty to treat his own tank bottoms and run them through a pipe line?

A. That is the intent of the order. If a producer desires to treat his own tank bottoms, he should be permitted to do so.

Q. Yes, but the first thought in my mind would not indicate that. In other words, nothing contained in this order shall apply to tank bottoms used on the lease.

Not treated and sold through a pipe line.

A. As I understand the intent of this, Mr. Famariss, it is that every operator in his discretion has the right to go in and clean his tanks and recover what merchantable oil he can, and that merchantable oil can be pumped right into the other stock tanks on the lease and be disposed of in the normal manner through some authorized transporter. There will probably be some residue that accumulates in that process that there would be no point in making a report to the Commission relative to.

Q. If we delete my citation, would not that liberty still exist?

A. Oh, I think the inference would be there that the operator still had the right. This just sets it out specifically. He has the right to reclaim his own oil and dispose of it.

Q. That part I thoroughly agree with.

A. Which part do you wish to delete?

COMMISSIONER MILES: And why.

MR. FAMARISS: I wish to delete the following: "Nothing contained in this order shall apply" and delete the words "to tank bottoms used on the lease from which the tank bottoms accumulated or". The deletion is as follows: "to tank bottoms used on the lease from which the tank bottoms accumulated or" Just these words. They are the exact deletions in my request.

THE WITNESS: Would you mind reading out--reading it after you got through with all this deletion business? I can't write as rapidly as this gentlemen here.

MR. FAMARISS: Yes, sir. Nothing contained in this Order shall apply to the treating of tank bottoms on the lease by the producer or operator where the merchantable oil recovered therefrom is disposed of through a duly authorized transporter as shown on Form C-110 filed with the Commission."

A. You know I can't keep up with this gentleman in taking this thing down. If you wouldn't mind going a little bit slower.

MR. FAMARISS: All right. "Nothing contained in this Order shall apply to the treating of tank bottoms on the lease by the producer or operator where the merchantable oil recovered therefrom is disposed of through a duly authorized transporter as shown on Form C-110 filed with the Commission." If the Commission please, that request is made with the following thought. It would seem that a producer could have the right to clean a tank bottom into a pit, which would constitute its remaining on the lease, and destroy that tank bottom. And by the inference contained in the words which I requested be deleted, he therefore would come under no provisions of this order. He would not have to file a tank cleaning report. He would have no allowable charge back. So, in deduction, it would round itself out to mean that if a producer--of which there are some--wishes to market his emulsion through a reclamation plant, then he must fill out under oath a tank cleaning order.

He must go through a very elaborate test of that emulsion by virtue of A.P.I. Code 25, Section 5--by the way, a minimum number of turns of the centrifuge machine is 9,000--and then it is to be charged back against his allowable. I can only construe this to mean that in order to do business with a reclamation plant, the operator must therefore suffer expense and penalty. Whereby, were those words which I requested deleted, there would be no one exempt from filing a tank cleaning report if he had a tank to clean, and the merchantable oil therefrom returned by the A.P.I. test would be charged back against his allowable from the producing unit from which the accumulation came. In other words, in my opinion it is an instance to evade any jurisdiction of the order in that specific instance. I have no quarter to ask at all in the producer being able to treat his own bottoms. I think that is just good oil business. I would like also to have clarified this matter of the shake-out test.

COMMISSIONER MILES: The matter of what?

MR. FAMARISS: Shake-out test. Rule 1, Section b, where it states that the emulsion shall be subject to the centrifuge test as provided under A.P.I. Code 25, Section 5. Could someone explain to me what would constitute the merchantable oil? Shall it be that mass above the water line, or shall it be that fluid oil above the solid line? The reason I ask that is, in a shake-out test--in a shake-out of a tank bottom there is a very substantial section of solids above your water. And my interpretation is that the crude oil lies above those solids. I would like to have that clarified by someone capable of answering it.

COMMISSIONER MILES: Anyone care to clarify the paragraph?

THE WITNESS: When you heat that oil to 120 degrees as provided here, won't most of those solids that are--that may be considered as merchantable hydrocarbons, won't they go into solution then?

MR. FAMARISS: No, Mr. Dewey, the tank bottoms which we are marketing attain fluidity somewhere above 150 degrees. In other words, at 120 degrees you will have a solid mass above your water line.

MR. DUNLAVEY: Mr. Dunlavey of Skelly Oil. Where are you getting those 150 degrees?

MR. FAMARISS: I have not secured, nor solicited, or processed in any manner or obtained a production tank bottom. The order as submitted covered the producer, and inasmuch as there has never been any specific clear method of obtaining a production tank bottom, we have never handled one.

MR. DUNLAVEY: How many shake-outs have you taken on a producing property from the time you have been in business? Not very many on a producing property.

MR. FAMARISS: I have taken several shake-outs on tank bottoms.

MR. DUNLAVEY: What was the temperature of the oil?

MR. FAMARISS: Everything from cold to 180 degrees.

MR. DUNLAVEY: 180 degrees?

MR. FAMARISS: 180 degrees.

MR. DUNLAVEY: What do you take a shake-out in?

MR. FAMARISS: In a centrifuge machine.

MR. DUNLAVEY: Under what conditions?

MR. FAMARISS: How do you mean?

MR. DUNLAVEY: You develop a heat of 180 degrees.

MR. FAMARISS: We don't heat.

MR. DUNLAVEY: In hot water?

MR. FAMARISS: No, steam. Subject your centrifuge to the steam. Subject your mass before you pour it in to steam.

MR. DUNLAVEY: And you come up with?

MR. FAMARISS: That depends upon what we were sampling. If sampling an unclean bottom, we might come up with sixty per cent water, thirty per cent of a paraffine-natured thick mass, and ten per cent of what could be construed to be oil.

MR. DUNLAVEY: I see. If it please the Commission. About eighty-five per cent of the operators have asked and petitioned the Commission that this proposed order be adopted. I would like to ask Mr. Famarriss if he is an oil producer in Lea County?

MR. FAMARRIS: No, I am not.

MR. DUNLAVEY: Thank you.

MR. KELLY: I am an independent. I would like Mr. Famarriss to clarify a statement he just made. I didn't sit in on the Lea County Operators Committee order. But Mr. Famarriss has stated that one producer can clean his own tank bottoms, circulate that good oil back into other tanks and sell to a pipe line, or he can hire a service company to do that job for him.

MR. FAMARRISS: Sure.

MR. KELLY: What if a producer doesn't want to do either?

MR. FAMARRISS: What do you mean?

MR. KELLY: Will you drive your service outfit 150 miles to service a tank bottom?

MR. FAMARRISS: Yes, if there be sufficient oil.

MR. KELLY: In other words, you are stating that the independent operator has to hire at a high fee someone to service his oil that would not be worth the service his oil that would not be worth the service charge?

MR. FAMARRISS: No.

MR. KELLY: You state a producer that does not wish to--suppose a man with a one-well lease. The way he cleans his tank is get his run the best he can and drag the residum out on the ground. He can't do that you think?

MR. FAMARRISS: If that was the inference that was made it was certainly unintentional. If there is an allowable charge back--that by virtue of its going into a reclamation market--the charge back is established by any other disposition agreement, including the district, is not charged back against the operator.

MR. KELLY: In order to further clarify it, would you please read through it again?

MR. FAMARRISS: Yes, sir.

COMMISSIONER MILES: I think if you will just strike out the words he wants deleted you can read it.

MR. KELLY: All right, sir.

MR. MORRELL: I would like to interject a thought. That the suggestion that Mr. Famarriss has made for deletion is rather academic inasmuch as every lease operator has that right under his lease instrument to use oil produced on the property on the leasehold. And that is all that phrase means. As I would take it, the primary purpose is that there would be nothing under this proposed order to prevent an operator from doing what he could do to take a tank bottom and put it on the leasehold.

MR. FAMARRISS: But then if there is a tank cleaning order--do you believe that there should be exceptions to the tank cleaning order?

MR. MORRELL: It wouldn't make any difference whether it is in the order or not. Actually this is for transporting and reclamation, and if you use it on a leasehold, you are not doing anything that comes under this order.

MR. KELLY: Would you answer this? If the tank bottom goes into a reclamation market, a tank cleaning permit must be secured, but if anyone else--but if anything else is done with it, it is not necessary to secure one, and there is no allowable charge back.

MR. MORRELL: I think you have a point there. And right along that line, I want to suggest something that may answer Mr. Famarriss' proposal. We have a reference under rule 2, (d) to the treating of tank bottoms on the lease. Now, that is the only reference that I find, by quick observation, throughout the whole order to a lease. It occurred to me--the thought I had was to possibly include in the reference clause in the third paragraph, "the following rules and regulations are hereby adopted to govern, regulate and control the cleaning of all tanks used in the handling, production, and/or measuring, and storing of crude oil in the State of New Mexico, the processing of tank bottoms, the construction and operation of treating plants, and the picking up" and insert after "picking up" "the removal from the leasehold on which such oil was produced."

MR. FAMARRISS: Then what, Mr. Morrell?

MR. MORRELL: The reclamation from the leasehold on which such oil is produced. This would be an order authorizing that reclamation from the leasehold. I think that would take care of the point that you have in mind.

MR. FAMARRISS: Really what I tried to bring out--I can't say in so many words--was that in order to do business with the reclamation plant, the operator suffers a penalty. And that is the way I construed that to be. In other words, the order applies when it hits a reclamation plant, but when not, it doesn't. Naturally,

it goes back to the same argument I have put before the Commission for the last year, that no producer will sell me something for twenty-five cents a barrel that he can dispose of and draw two and a half dollars from the well and market.

MR. KELLY: Mr. Morrell, here, clears up the point I was bring up. That the operator have the full right to use his oil any way he wants to on the lease.

MR. FAMARISS: Oh, yes.

MR. MORRELL: I would like to ask one further question.

Under this circumstance to which you refer, an operator could clean his own tanks and place the merchantable oil in a pit and that pit oil could be transported to this reclamation....?

MR. FAMARISS: No, that is covered in that order. He still has to have a charge back, whether picked up from the tank or pit. What I was trying to get at is that there was no tank cleaning order involved until it was brought to a reclamation plant.

MR. MORRELL: What did you say about putting merchantable oil into a pit?

MR. FAMARISS: I said a tank could be drawn off into a pit and burned and no charge back.

MR. MORRELL: But should the producer choose to sell it into the market, then he has to go through a tank cleaning permit?

MR. FAMARISS: And A.P.I. test of the emulsion and allowable charge back.

MR. MORRELL: Or if removed from the leasehold?

MR. FAMARISS: In other words, what I am trying to imply is that in order to do business with a reclamation plant an intentional penalty is assessed against the producer that would remove the producer from the market entirely. If I am wrong, I would be very happy to be advised of it.

MR. DEWEY: It is the purpose and intent on the part of the operators in inserting this requirement that operators make application for disposal of tank bottoms off the lease.

We have been operating in Lea County since 1928, and up until the last six months we have done a pretty good job without reclamation plants, and I don't know of any waste oil that hasn't been taken care of by the operators. And the purpose or intent of this order is that if the operator wishes to dispose of his oil that he file an application and obtain a permit, and that is the guts of the whole order.

COMMISSIONER MILES: Have you any further statements, Mr. Famariss?

MR. FAMARISS: Yes, I have some I would like to make, please sir. Under Rule 2, Section a in the fourth line. The word "bond" that it be preceded by the word "surety".

COMMISSIONER MILES: What is that again?

COMMISSIONER SPURRIER: I don't find that.

MR. DEWEY: At the foot of the page in Section c.

MR. FAMARISS: No, it is in the second paragraph under Section a, the fourth line out towards the end. It says "approval of bond". Insert the word "surety." It is in section c. It was omitted in that other one.

COMMISSIONER MILES: What is your comment?

MR. FAMARISS: That that word "surety" be inserted preceding the word "bond" to further clarify it. This order as suggested, I believe in the test provision, stated that a reclamation plant operator would have to come up once a year and petition for a hearing and come before the Commission and go through the expense and procedure that originally included getting a permit. I would like to suggest to the Commission that in lieu of that that some provision for a renewal by consent be placed in the order. And as a suggestion--this was very hurriedly written and there may be a loophole in it-- that the following words be added to Rule 2, Section a, fourth paragraph, "Renewal of permit may be secured by consent of the Commission for an additional period of one year without the necessity of additional hearing or notice."

MR. GRAHAM. By inspection and recommendation? It occurred to me by inspection of your plant and a recommendation by somebody.

MR. FAMARISS: That would be a good idea. By inspection of the operation. In other words, that the Commission satisfy themselves that the operation is legal and properly operated. I would like also to have a clarification for my benefit that should the Commission adopt this suggested order of the operators, would it

mean that my operations are permitted to go on for one year past the date of adoption of the order? Should No. 726, which is my permit to operate-- it has no time limit in it. And how would it be construed upon the adoption of this order?

COMMISSIONER SPURRIER: Is there someone from Lea County Operators that could answer that question?

MR. DEWEY: I think it would be a matter for the Commission to decide.

MR. SETH: It probably would extend a year.

COMMISSIONER SPURRIER: And while we are talking and getting comments, how about Mr. Famariss' question that he just raised on this fourth paragraph. What is any operator's comment on that?

MR. DEWEY: We thought that this paragraph has covered that situation, and that the plant operator should come back once a year and renew their permit. Give the Commission a chance to review the matter.

COMMISSIONER SPURRIER: By what specific method, Mr. Dewey?

Open hearing before the Commission or inspection of his plant by some employee of the Commission or some other means?

MR. DEWEY: Well, that is left to the discretion of the Commission. How they would care to handle that.

MR. FAMARISS: Then the opinion seems to be that the order as existing-726--would continue for one year past the date of adoption of this order.

MR. SETH: Isn't that subject to the third paragraph?

MR. FAMARISS: That is why I asked for an opinion.

MR. CARD: Your present order would be subject to the hold orders as stated in Section 2, a.

COMMISSIONER MILES: Is this being discussed for the benefit of the Commission, or is it a private hearing? I am not getting a word of it.

COMMISSIONER SPURRIER: Are you getting it, Gene?

THE REPORTER: Yes.

MR. FAMARISS: Judge Seth, would you care to discuss this?

MR. SETH: My opinion is that the new order doesn't apply to him until a year after it is issued. He has a year after that time.

MR. FAMARISS: I wanted that part. If those changes in the order suggested-- particularly the deletion and clarification of the method of renewal, whatever it may be--in other words, clarify that. I would like to concede my argument of a no allowable charge back. I haven't changed my opinion about it, nor have I in any manner changed my thoughts as to what is right and wrong. However, this controversy can't go on forever, and if the Commission pleases, and it is agreeable to make those changes which I have suggested, I would like the Commission to know that the order is acceptable to me. Without the revisions which I have suggested, I have two thoughts. One, the matter be continued. That covers them both anyway.

COMMISSIONER MILES: Let's go back to this "d" under Rule 1. Was there ever any conclusion with regard to whether these words should be deleted from the paragraph?

MR. SETH: I believe they should be left there, if the Commission please. Because the oil can be used on the lease. There is no question about that.

MR. SANDERSON: Engineer of production of the Gulf Oil Corporation. I think it is very important that statement "d" be left in the order. For the reason that we would like the right to use the bottoms, what remains after the--for the purpose of use on the lease, for roads, and any other purpose we see fit to use it for.

COMMISSIONER MILES: That is the manner in which it has been handled prior to the time of any order. The way you choose to do so now. Mr. Famariss, what is your objection to the words?

MR. FAMARISS: That in order to do business with the reclamation plant, the operator must file a tank cleaning permit. He must make a very exacting shakeout of his emulsion and he must charge it back against his allowable. But if he doesn't do business with the reclamation plant, then none of the provisions of the order apply.

COMMISSIONER MILES: Any dispute on that matter?

MR. SANDERSON: None of the oil could be used without a permit. I can't understand Mr. Famariss' objection. It can't be taken away. And as Mr. Morrell suggested, the basic lease has given you the right to use it for any purpose you want to use it for. I can't see how there will be any waste or any chance of anyone marketing

oil not accounted for

MR. FAMARISS: If the basic lease gives the right to use the oil for maintenance of the lease, why is it necessary to further state it in this order?

MR. SANDERSON: This is simply for clarification. Because the lease is subject to the orders of the Commission.

MR. MORRELL: In connection with Mr. Famariss' statement about the necessity of a producer, in order to do business with a reclamation plant, as compelled to get a permit, I would like to add for his information and the information of the operators on public lands that they will also have to come to us in addition to the State. It is provided in the regulations that no oil should be taken off a lease without an approved sales contract, diversion order, or other arrangement first approved. And in that same paragraph it is set forth here for clarification purposes, similar to the manner in which it is included in this proposed order that all contracts for the disposition of production on the leased land, except that portion used for purposes of production on the leased land. We have that same type of provision in our regulations. It is merely for clarification in this proposed order. I believe--I see no objection to it.

MR. FAMARISS: If there is nothing else, I have one more piece of information.

MR. LOVERING: Shell Oil Company. Mr. Famariss stated that it would be an imposition on the operators to make out these permits, etc., and get rid of the oil off the lease. The operators together made up this resolution here and knowing that it would cause them additional paper work to handle their oil, and even knowing that, were unanimous in their agreement in having this thing presented to the Commission as it is. It is also inferred by Mr. Famariss that since we are going to be penalized on that little detail we should be penalized on all tank cleaning operations which are normally much greater than treated by an assayer. I don't think it is necessary, and I recommend that paragraph (d) be left in.

MR. FAMARISS: I have this other information to place in the record.

COMMISSIONER MILES: Yes.

MR. FAMARISS: In the hearing of the Commission in the Case 104 and 110, October 15, 1947, the controversy of allowable charge back or no charge back was propounded at quite some length before the Commission. The Commission made the suggestion at that time--I believe if I am correct it came from Governor Mabry--that a committee be appointed of the industry to examine the controversy. Included on that committee, Mr. Spurrier, was a pipeline company, a major oil company, a gasoline plant, an independent operator, a refinery, the United States Geological Survey, and Lea County Operators. That committee met on October 31 and transmitted to the Commission on November 3 a suggested order. I don't believe that this has ever been made a matter of a hearing record, and for that reason I would like to present it. I think everybody here is acquainted with the order. I would like to present it and have it made a part of this hearing. These are my originals from my files. Will you need those?

COMMISSIONER SPURRIER: No, we have copies.

MR. FAMARISS: That is all I have.

MR. SETH: If the Commission please, the proposed order that Mr. Famariss referred to was never circulated among the operators. And we don't know whether or not the committee that prepared the proposed order were representatives of all the producers involved--purchasers, producers, tank cleaners. The suggestion made by Mr. Morrell about going off the lease. We thoroughly approve that. To limit the scope of the order.

COMMISSIONER MILES: Anyone else have any statements regarding this matter?

MR. DEWEY: I discussed this matter of the amount of heat that should be applied in a centrifuge test with our Chief Pipeline Gauger, and he expressed the opinion to me that if you had to heat it much above 120 degrees you get a lot of material that would settle out as soon as the temperature was reduced. That is, the lighter oil--elements of the oil were driven off by the heat and just the heavier hydrocarbons were left, and that from the pipeline standpoint they were not interested in having somebody try to sell them some oil that had been subject to too much heat. It had been their experience where they had taken oil of that nature that as soon as the oil had cooled down that it settled out in the first tank along the pipeline system, and

they had paid for something that they would have to--that they couldn't get down to the refinery. And it would tend to fill up their tanks and cost them money to dispose of. So, I don't know whether that is permissible evidence or not in this hearing. I have no experience myself about the matter. It is just the opinion he expressed to me about it.

MR. FAMARISS: You say the oil then above the solid mass would be considered merchantable oil?

MR. DEWEY: I would think that is the case. But as I say, I have no experience outside of his statement to me to justify it.

MR. FAMARISS: I would like to make a statement that we in processing tank bottoms that we sell no pipeline oil. Tank bottoms are not sold for crude oil. They are sold and shipped in tank cars to chemical companies for the recovery of waxes. Not one barrel of tank bottoms we have produced ever entered the crude oil market. The price is higher for wax purposes.

COMMISSIONER SPURRIER: What do you do with the crude oil after treating it?

MR. FAMARISS: Our operation is the dehydration and the clearing up of sediment, and then shipping the entire mass, which includes the wax and pipeline oil. And our experience is that that oil is somewhere between 10 and 20 per cent. We can't get it out. If we had a cracking unit we could. But there is no practical way to do it in the field. It goes to Kansas from Hobbs on our operation at the present time. The freight rates on that oil into Kansas run somewhere in the neighborhood of \$1.27 and they receive on the Kansas market after distillation of the crude \$1.75 for it. So, you see there is no economic value in handling that crude oil.

COMMISSIONER SPURRIER: There is some in it, but you include it with your shipment?

MR. FAMARISS: Yes, but it is impossible to get it out.

MR. DUNLAVEY: Are you talking about pipeline tank bottoms?

A. Yes.

MR. DUNLAVEY: You are not talking about stock tank bottoms?

MR. FAMARISS: Yes.

MR. DUNLAVEY: You should clarify yourself.

MR. FAMARISS: I did, I said that my statement was for the information of the Commission and the operators on our present tank bottom operations. And we take no producing tank bottoms at all.

COMMISSIONER MILES: Anyone else wish to be heard on this matter? Any other business before this Commission?

COMMISSIONER SPURRIER: May I ask a question before the case is closed? Mr. Dewey, in connection with what you said. When is the classification of your oil taken?

MR. DEWEY: They go right to the lease stock tanks. The pipeline gauger does.

COMMISSIONER SPURRIER: And all oil is bought on a classification basis?

MR. DEWEY: That is right.

COMMISSIONER SPURRIER: I might add something to the record....I must add something to the record. W. C. Garand, attorney for Hardin-Houston, addressed a letter to the Commission regarding this case, and he stated that Hardin-Houston had no objection to the order proposed by Lea County Operators. While I don't have the letter right here, we will make that a part of this record.

COMMISSIONER MILES: I assume there is no objection from the operators to that?

MR. DEWEY: I have no objection.

COMMISSIONER MILES: Any other business? Mr. Morrell wanted to make a statement, I believe.

MR. GRAHAM: It was on a previous case.

MR. McCORMICK: It was in 152 that Mr. Morrell wanted to make a statement.

COMMISSIONER SPURRIER: Mr. Morrell, before you start, do you want this for the record?

MR. MORRELL: That would be as the Commission pleases. They may enter it if they so desire for consideration. This would be an extension of my remarks under Case No. 152 on the application of Grayburg. Based somewhat on the request made by Judge Seth for further consideration by the Lea County Operators. This morning I mentioned a distinction between plant cooperative unit operations as contrasted with those of an operator solely operating on his own lease. Reviewing the history of a cooperative unit agreement as affecting the Federal lands, which the Grayburg application does, the department does not approve any unit or cooperative agreement of producing pro-

perties unless some action is taken over and above normal operations. By that I mean a secondary recovery project. That is the basis on which the Grayburg cooperative and unit agreement was approved by the Department of the Interior. They agreed to a single operator for the unit area and to install a plant to inject gas, which they have done in approximately nine different wells, and at the present time are injecting into five. The matter of unitizing 40 acres in connection with the drilling of unorthodox wells has now been before the Commission for several years. We have several in the Grayburg and Square Lake pools in which a third well is drilled on 80 acres and those two 40's are communitized. The 80-acre unit is to receive more than twice the top unit allowable to be distributed among the three wells, as the operator sees fit. We have others in the east end of the Maljamar field involving 160-acre tracts. So, the basic principle of unitizing for proration purposes is approved, but in all cases still limiting those units, whatever their size, to the top unit allowable per 40 times the developed 40 acres. I have observed for a number of years a situation under our present proration plan of the Commission that as we approach stripper conditions in the older areas, that production on some leases is actually done on a lease basis by virtue of the collecting of oil from three or four or more wells into a single tank battery. The effect being that the actual amount of oil from each individual well is not made of record. Well, that situation has made it very unfortunate and undesirable for record purposes in connection with secondary recovery situations. The operators found that to be true in the Maljamar, in the Vacuum studies. In connection with the studies of a proposed secondary recovery in the north end of the Langlie-Mattix pool. It seems to me that if this basic lease allowable for a stripper production could be actually set forth by the Commission, we may be able to have official records in the State shown in such a manner that the engineering data is available for secondary study purposes. That particular statement goes beyond the intent and purpose of this particular case. That is merely made for information purposes. In the instant case of the Grayburg, they have an approved agreement. They have a plan for the drilling of 28 wells. If we can get additional expenditure of capital for the recovery of oil, I think we should encourage it. The only objection that I could see--rather, the point that the Lea County Operators would be interested in--would be how they would be adversely affected by an order on the Grayburg. And so long as the Grayburg order is limited, not in excess of a top allowable, the Lea County Operators would not be adversely affected any more than they had been in the past when all wells were a one well to a 40 and were top allowable wells. They will endeavor to keep the total production up to top production by virtue of the additional wells. I would suggest that you encourage the additional drilling of five-spot wells on unorthodox locations, as they may be called, in Lea County, might be considered on a somewhat similar basis, otherwise we will not obtain all the oil that could be otherwise recovered. I believe that I have nothing further. I believe that is about the sum and substance of the thoughts I have. There may be some questions. If the Lea County Operators have any at the present time I would be glad to endeavor to add to it.

COMMISSIONER MILES: Anyone wish to ask Mr. Morrell any questions relative to the matter?

MR. LOVERING: What becomes the limiting factor in the number of unorthodox wells on any particular sized unit? As you say, we admit that every well you get down might get another barrel of oil, but where is the limiting factor?

MR. MORRELL: You mean as to the total number of wells to be drilled?

MR. LOVERING: What would keep you from having three or four unorthodox wells on one 40 for that matter?

MR. MORRELL: I don't see any limiting factor except the economics involved.

MR. LOVERING: Who would determine that?

MR. MORRELL: The operator. For instance, we have right now in the Russell pool--20-28--five wells to the 40. We are using one 40 acre unit allowable for the five wells. If we have a basic lease with eleven productive 40-acre tracts, we would have 11 times 40 barrels for the basic lease allowable. That is the most that that lease might be produced. It would not make any difference it seems to me to the Lea County Operators whether it was produced out of 11 wells or 44 wells.

MR. LOVERMAN: It might make some difference to one party who shows and thinks it is more economical to produce with a dozen wells than two or four. He might have to drill and produce from each of these offset operators, put in all those unorthodox locations.

MR. MORRELL: We have that exact procedure in effect in the Fren pool in 7-31. Max Friess came to us several years ago and said to us in his opinion he could drill two wells to the 40 in the seven Rivers pay. In order to work out a well-spacing pattern so that it would be in a universal manner, and that is one of the things that should be done and considered in any of these type of well spacings--we called a meeting of the operators--Danciger, Skelly, Fren, and one or two individuals. We worked out and approved two wells to the 40 to the Seven Rivers pay. With that approved, we set up also a well-spacing pattern for Skelly and Danciger on adjoining leases. They did not desire to drill two to a 40. At that time they considered it uneconomic. Our approval was given to Fren Oil Co. with the understanding that it did not require an offset to the second well by the adjoining operators. They would have the same privilege and same right to follow the same spacing pattern, but it was left to them. They have since followed it and are drilling 20-acre wells. Danciger is.

COMMISSIONER MILES: Gentlemen, I am sure that this is a matter of great interest to all, but as far as what it will accomplish here at this time, I can't see. I think it should be called at a meeting of the operators and discussed at some future time.

MR. MORRELL: The only reason I mention it here at the time is you might want to hear it.

MR. COCHRAN: The Grayburg has outlined a specific program. This thought has occurred to me. As Mr. Morrell has said, in some instances there have been 4 wells drilled on a 40-acre tract. In many instances, 5 wells on a 160 acre tract. In the proposed drilling of the Grayburg wells, this situation may occur. That on 160-acre tracts there may be four wells of which three wells are top allowable wells. And the fourth well doesn't quite make top allowable. And in this spacing pattern, I believe the five-spots are located about 25 feet south and 25 feet east of the center of the 160. Well, undoubtedly the Grayburg, if it happened that the second well on a 40 fell on a 40 that there was a well that would make top allowable, then they would have to come in in order to produce top allowable from 4 wells out of 5 wells, and either ask that that location be moved 50 feet to the 40-acre tract where there was a well that didn't quite make allowable, or they would have to go through this cooperative unit and file with the Commission and ask permission to unitize each 160-acre tract. So that they could produce the allowable for four wells out of five wells. If they are not permitted to do it on a lease basis, then that can destroy to a certain extent the spacing pattern and some of the wells may have to be changed.

COMMISSIONER MILES: Anything else?

MR. COCHRAN: One more thing. On using 160-acre units. That would mean that every other five-spot would have to be eliminated because there would be a five-spot in between.

COMMISSIONER MILES: I lost the first part of that statement.

MR. COCHRAN: I say if it is necessary in order to produce this allowable from 160 from 5 wells, then every other five-spot location would be affected in that there will be a five-spot between the north row of wells on a 160, and the South row of wells on the adjoining 160. So a number of those might have to be eliminated.

COMMISSIONER MILES: Does anyone else have a statement to make? If not, the Commission will be adjourned.

C E R T I F I C A T E

I HEREBY CERTIFY that the foregoing transcript of the afternoon proceedings before the Oil Conservation Commission of the State of New Mexico in Santa Fe on July 29, 1948, is a true record of such proceedings to the best of my knowledge, skill and ability.

I FURTHER CERTIFY that I am the Official Reporter for the United States District Court for the District of New Mexico.

DATED at Santa Fe August 9, 1948.

LEA COUNTY OPERATORS COMMITTEE, HOBBS, N.M.
AUGUST 13, 1948

E. E. Greeson
COURT REPORTER

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 164
ORDER NO. 802

THE APPLICATION OF GRAYBURG OIL COMPANY
OF NEW MEXICO, AND WESTERN PRODUCTION
COMPANY, INC., FOR AN ORDER GRANTING
PERMISSION TO UNITIZE CERTAIN TRACTS
WITHIN THE BOUNDARIES OF THE GRAYBURG
COOPERATIVE AND UNIT AREA, IN TOWNSHIP
17 SOUTH, RANGES 29 AND 30 EAST, N.M.P.
M., IN THE GRAYBURG-JACKSON POOL OF
EDDY COUNTY, NEW MEXICO, FOR PRORATION
AND ALLOWABLE PURPOSES

ORDER OF THE COMMISSION

BY THE COMMISSION:

This matter came on for hearing at 10:00 o'clock A. M. on the
28 day of October, 1948, at Santa Fe, New Mexico, before the Oil
Conservation Commission of New Mexico, hereinafter referred to as the
"Commission".

NOW, on this 19 day of November, 1948, the Commission,
having before it for consideration the testimony adduced at said hearing and
being fully advised in the premises,

FINDS:

1. That due public notice having been given, as provided by
law, the Commission has jurisdiction of this cause.
2. That the acreage involved in the Application is Federally
owned and the Supervisor of the United States Geological Survey interposes no
objections to the Application.
3. That heretofore, in Case No. 152, upon which hearing was
held before the Commission on July 29, 1948, the Commission granted to Appli-
cants herein, permits to drill twenty-eight unorthodox "five spot" locations,
upon the leases described in this Application.
4. That the creation and establishment of the tracts of land
described in the Application, into unitized tracts for proration and allowable
purposes only, will enable Grayburg Oil Company of New Mexico and Western Pro-
duction Company, Inc. to produce the wells upon the respective proposed uniti-
zed tracts at a more efficient rate of withdrawal; that a greater ultimate re-

covery of oil will be obtained from each of said unitized tracts, and that such method of operation will be in the interest of conservation, prevent waste and enable Applicants to produce substantial quantities of oil that would not otherwise be recovered.

IT IS, THEREFORE, ORDERED, that the Application of Grayburg Oil Company of New Mexico and Western Production Company, Inc., for an order authorizing the unitization for proration and allowable purposes of the tracts therein described, be and the same is hereby granted and approved, and it is further ordered that the following tracts of land located in the Grayburg-Jackson Pool of Eddy County, New Mexico are hereby established as unitized tracts for proration and allowable purposes:

GRAYBURG OIL COMPANY OF NEW MEXICO UNITS:

UNIT G-1, described as S/2 S/2 Section 18,
N/2 and N/2 S/2 Section 19, Township 17
South, Range 30 East, N.M.P.M.

UNIT G-2, described as S/2 SW/4 Section
19, NW/4 Section 30, Township 17 South,
Range 30 East, N.M.P.M.

UNIT G-3, described as SW/4 Section 23,
Township 17 South, Range 29 East, N.M.P.M.

UNIT G-4, described as N/2 NW/4, SW/4 NW/4,
N/2 SW/4, N/2 SE/4 and NE/4 Section 24,
Township 17 South, Range 29 East, N.M.P.M.

UNIT G-5, described as S/2 SW/4 Section 24,
N/2 NW/4 Section 25, E/2 Section 26, Township
17 South, Range 29 East, N.M.P.M.

WESTERN PRODUCTION COMPANY, INC. UNITS:

UNIT W-1, described as S/2 SE/4 Section 19,
N/2 NE/4 Section 30, Township 17 South,
Range 30 East, N.M.P.M.

UNIT W-2, described as SE/4 Section 23,
Township 17 South, Range 29 East, N.M.P.M.

UNIT W-3, described as W/2 Section 26,
Township 17 South, Range 29 East, N.M.P.M.

UNIT W-4, described as S/2 SE/4 Section 24,
S/2 NW/4, SW/4 and E/2 Section 25, Town-
ship 17 South, Range 29 East, N.M.P.M.

IT IS FURTHER ORDERED, and Applicants are hereby authorized to produce from each unitized tract, hereinabove described, the total allowable production, as fixed by the Commission for the total number of developed forty acre proration units comprising such unitized tract, and that Applicants are hereby authorized to produce the total allowable, so fixed by the Commission for each unitized tract, from all of the wells located upon or that may be hereafter drilled upon such unitized tract, producing from the Grayburg-Jackson Pay.

IT IS FURTHER ORDERED, that no well located upon any unitized tract shall be permitted to produce at a rate in excess of the top allowable as fixed by the Commission

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

CHAIRMAN

John E. Miles.

MEMBER

R. R. Surrier

SECRETARY

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 152
ORDER NO. _____

THE APPLICATION OF GRAYBURG OIL COMPANY
OF NEW MEXICO, AND WESTERN PRODUCTION
COMPANY, INC., FOR AN ORDER GRANTING
PERMISSION TO DRILL TWENTY-EIGHT UNORTHOD-
DOX LOCATIONS ON LEASES WITHIN THE BOUND-
ARIES OF THE GRAYBURG COOPERATIVE AND
UNIT AREA, IN TOWNSHIP 17 SOUTH, RANGES
29 AND 30 EAST, N.M.P.M., IN THE GRAYBURG-
JACKSON POOL OF EDDY COUNTY, NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION:

This matter came on for hearing at 10 o'clock
A. M. on the 29th day of July, 1948 at Santa Fe, New
Mexico, before the Oil Conservation Commission of New
Mexico, hereinafter referred to as the "Commission".

NOW, on this _____ day of _____, 1948,
the Commission, having before it for consideration the
testimony adduced at said hearing and being fully advis-
ed in the premises,

FINDS:

1. That due public notice having been given
as provided by law, the Commission has jurisdiction of
this cause.
2. That the acreage involved in the applica-
tion is federally owned and the Supervisor of the United

states Geological Survey interposes no objections to the Application.

3. That leases covering the following described lands in said Grayburg Cooperative Unit Area are owned by Grayburg Oil Company of New Mexico:

BURCH "A" LEASE, Las Cruces Serial No. 028793, described as S/2 S/2 Section 18, N/2 and N/2 S/2 Section 19, Township 17 South, Range 30 East, N.M.P.M.

BURCH "B" LEASE, Las Cruces Serial No. 028793-84, described as NE/4, N/2 SW/4 Section 18, S/2 SW/4 Section 19, NE/4 Section 30, Township 17 South, Range 30 East; NE/4 and SW/4 Section 23, Township 17 South, Range 29 East, N.M.P.M.

KEELY "A" LEASE, Las Cruces Serial No. 028784, described as NE/4 SE/4, S/2 S/2 Section 13, N/2 NW/4, SW/4 NW/4, N/2 SW/4, NE/4, N/2 SE/4 Section 24, Township 17 South, Range 29 East, N.M.P.M.

KEELY "B" LEASE, Las Cruces Serial No. 028784-93, described as S/2 SW/4 Section 24, N/2 NW/4 Section 25 and S/2 Section 26, Township 17 South, Range 29 East, N.M.P.M.

DEXTER LEASE, Las Cruces Serial No. 054406 described as SE/4 NW/4 Section 24, Township 17 South, Range 29 East, N.M.P.M.

That leases covering the following described lands in said Grayburg Cooperative and Unit Area are owned by Western Production Company, Inc.

BURCH "C" LEASE, Las Cruces Serial No. 028793, described as NE/4, N/2 SE/4 Section 18, S/2 SE/4 Section 19, NE/4 and S/2 Section 30, Township 17 South, Range 30 East, N.M.P.M.; NW/4 and SE/4 Section 23, Township 17 South, Range 29 East, N.M.P.M.

KEELY "C" LEASE, Las Cruces Serial No. 028784, described as N/2 SW/4, NW/4 SE/4 Section 13, S/2 SE/4 Section 24, S/2 NW/4, NE/4 and S/2 Section 25, N/2 Section 26, Township 17 South, Range 29 East, N.M.P.M.

That all of the leases covering the lands above described comprise and are situated within the boundaries of the Grayburg Cooperative and Unit Area.

4. That one well located in the center of each forty-acre legal subdivision is not sufficient to obtain all of the recoverable oil under any forty-acre tract and that the drilling of "five spot" wells, as proposed in the Application of Grayburg Oil Company of New Mexico, and Western Production Company, Inc., at the locations designated, would be in the interest of conservation, prevent waste and enable Applicants to obtain a greater ultimate recovery of oil, in that Applicants would be able to recover substantial quantities of oil which would otherwise not be produced if such "five spot" locations were not drilled.

5. That in said cause, Grayburg Oil Company of New Mexico, and Western Production Company, Inc. asked for permission to unitize each basic lease for proration and allowable purposes, but thereafter, by motion filed and granted by the Commission, that part of the Application in the above cause with reference to unitizing basic leases within the boundaries of the Grayburg Cooperative and Unit Area for allowable and proration purposes was dismissed.

IT IS, THEREFORE, ORDERED, by the Commission that the Application of Grayburg Oil Company of New Mexico, and Western Production Company, Inc., for an order granting permits to drill the twenty-eight unorthodox "five spot" locations described in said Application, be

and the same is hereby granted and approved.

The numbers and locations of the wells to be drilled by Grayburg Oil Company of New Mexico are as follows:

BURCH NO. 19-A: Section 19, Township 17 South, Range 30 East, N.M.P.M., Unit B, NE/4 NE/4, 2615 feet from East Line, 25 feet from North Line;

BURCH NO. 20-A: Section 19, Township 17 South, Range 30 East, N.M.P.M., Unit A, NE/4 NE/4, 165 feet from North Line, 1155 feet from East Line;

BURCH NO. 21-A: Section 19, Township 17 South, Range 30 East, N.M.P.M., Unit F, NE/4 NW/4, 1485 feet from North Line, 1260 feet from West Line;

BURCH NO. 22-A: Section 19, Township 17 South, Range 30 East, N.M.P.M., Unit H, SE/4 NE/4, 1345 feet from North Line, 1295 feet from East Line;

BURCH NO. 23-A: Section 19, Township 17 South, Range 30 East, N.M.P.M., Unit I, NE/4 SW/4, 2615 feet from South Line, 905 feet from East Line;

BURCH NO. 24-A: Section 19, Township 17 South, Range 30 East, N.M.P.M., Unit G, SW/4 NE/4, 2310 feet from North Line, 2615 feet from East Line;

BURCH NO. 25-A: Section 19, Township 17 South, Range 30 East, N.M.P.M., Unit I, NE/4 SE/4, 2615 feet from South Line, 1295 feet from East Line;

BURCH NO. 14-B: Section 23, Township 17 South, Range 29 East, N.M.P.M., Unit H, SE/4 SW/4, 1295 feet from South Line, 1345 feet from West Line;

BURCH NO. 15-B: Section 30, Township 17 South, Range 30 East, N.M.P.M., Unit C, NE/4 NW/4, 330 feet from North Line, 1260 feet from West Line;

BURCH NO. 16-B: Section 30, Township 17 South, Range 30 East, N.M.P.M., Unit F, SE/4 NW/4, 1345 feet from North Line, 1260 feet from West Line;

WELLY NO. 14-A: Section 24, Township 17
South, Range 29 East, N.M.P.M., Unit H,
SE/4 NE/4, 1345 feet from North Line,
1295 feet from East Line;

WELLY NO. 14-B: Section 25, Township 17
South, Range 29 East, N.M.P.M., Unit G,
SE/4 NE/4, 25 feet from North Line, 1345
feet from East Line;

WELLY NO. 15-A: Section 26, Township 17
South, Range 29 East, N.M.P.M., Unit I,
NE/4 SE/4, 2615 feet from South Line,
1295 feet from East Line;

WELLY NO. 16-B: Section 26, Township 17
South, Range 29 East, N.M.P.M., Unit J,
SE/4 SE/4, 1295 feet from South Line,
1295 feet from East Line.

The numbers and locations of the wells to be
drilled by Western Production Company, Inc. are as fol-
lows:

BURCH NO. 10-C: Section 23, Township 17
South, Range 29 East, N.M.P.M., Unit P,
SE/4 SE/4, 1295 feet from South Line,
1295 feet from East Line;

BURCH NO. 11-C: Section 19, Township 17
South, Range 30 East, N.M.P.M., Unit Q,
SE/4 SE/4, 990 feet from South Line, 1295
feet from East Line;

BURCH NO. 12-C: Section 19, Township 17
South, Range 30 East, N.M.P.M., Unit O,
SW/4 SE/4, 25 feet from South Line, 1345
feet from East Line;

WELLY NO. 28-C: Section 25, Township 17
South, Range 29 East, N.M.P.M., Unit A,
NE/4 NE/4, 25 feet from North Line, 1295
feet from East Line;

WELLY NO. 29-C: Section 26, Township 17
South, Range 29 East, N.M.P.M., Unit F,
SE/4 NE/4, 1345 feet from North Line,
1345 feet from East Line;

WELLY NO. 30-C: Section 25, Township 17
South, Range 29 East, N.M.P.M., Unit H,
SE/4 NE/4, 1345 feet from North Line,
1295 feet from East Line;

WELLY NO. 31-C: Section 26, Township 17
South, Range 29 East, N.W. 1/4, Unit A,
NE/4 SW/4, 2615 feet from South Line,
1345 feet from East Line;

WELLY NO. 32-C: Section 25, Township 17
South, Range 29 East, N.W. 1/4, Unit B,
NE/4 SW/4, 2615 feet from South Line,
1345 feet from East Line;

WELLY NO. 33-C: Section 25, Township 17
South, Range 29 East, N.W. 1/4, Unit J,
NE/4 SW/4, 2615 feet from South Line,
2615 feet from East Line;

WELLY NO. 34-C: Section 25, Township 17
South, Range 29 East, N.W. 1/4, Unit I,
NE/4 SW/4, 2615 feet from South Line,
1295 feet from East Line;

WELLY NO. 35-C: Section 26, Township 17
South, Range 29 East, N.W. 1/4, Unit H,
SE/4 SW/4, 1295 feet from South Line,
1345 feet from East Line;

WELLY NO. 36-C: Section 25, Township 17
South, Range 29 East, N.W. 1/4, Unit G,
SE/4 SW/4, 1295 feet from South Line,
1345 feet from East Line;

WELLY NO. 37-C: Section 25, Township 17
South, Range 29 East, N.W. 1/4, Unit C,
SW/4 SE/4, 1295 feet from South Line,
2615 feet from East Line;

WELLY NO. 38-C: Section 25, Township 17
South, Range 29 East, N.W. 1/4, Unit F,
SE/4 SE/4, 1295 feet from South Line,
1295 feet from East Line.

IT IS FURTHER ORDERED that production from
any well hereinabove authorized, when added to the produc-
tion of any existing well in the same forty-acre unit,
shall not be produced in excess of the forty-acre allow-
able as now, or as may be hereafter fixed for the Gray-
burg-Jackson Pool, until further ordered by the Commis-
sion.

IT IS FURTHER ORDERED that the Applicants shall
file with the Commission copies of Federal location notices

for the hereinabove described locations after approval
thereof by the Oil and Gas Supervisor.

DONE at Santa Fe on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

*Approved on to form
a legal sufficiency
Don L. McCombs*

CHAIRMAN

MEMBER

SECRETARY

LAW OFFICES
JOHN E. COCHRAN, JR.
CARPER BUILDING
ARTESIA, NEW MEXICO

October 12, 1948

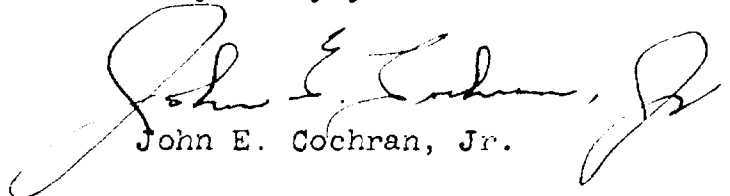
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

Enclosed herewith is Application of Grayburg Oil Company of New Mexico and Western Production Company, Inc., for an order granting permission to unitize certain tracts within the boundaries of the Grayburg Cooperative and Unit Area in Township 17 South, Ranges 29 and 30 East, N.M.P.M., in the Grayburg-Jackson Pool of Eddy County, New Mexico, for pro-rata and allowable purposes.

It would be very much appreciated by Grayburg Oil Company and Western Production Company if notice of hearing on this Application could be published promptly so that this Application may be set at the hearing to be held by the Oil Conservation Commission on October 28, 1948.

Very truly yours


John E. Cochran, Jr.

JEC:rm
Encls

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF APPLICATION OF GRAYBURG
OIL COMPANY OF NEW MEXICO, AND WESTERN
PRODUCTION COMPANY, INC., FOR AN ORDER
GRANTING PERMISSION TO UNITIZE CERTAIN
TRACTS WITHIN THE BOUNDARIES OF THE GRAY-
BURG COOPERATIVE AND UNIT AREA, IN TOWN-
SHIP 17 SOUTH, RANGES 29 AND 30 EAST, N.
M. P. M., IN THE GRAYBURG-JACKSON POOL OF
EDDY COUNTY, NEW MEXICO, FOR PRORATION AND
ALLOWABLE PURPOSES

NO. 164

APPLICATION

GRAYBURG OIL COMPANY OF NEW MEXICO, and
WESTERN PRODUCTION COMPANY, INC., Applicants herein, are
both corporations organized and existing under and by
virtue of the laws of the State of New Mexico, and in
connection herewith respectfully show to the Oil Conserva-
tion Commission:

1. Applicants are the owners and holders,
respectively, of all of the Federal Oil and Gas Leases
comprising what is known as the Grayburg Cooperative and
Unit Area, situated in Eddy County, State of New Mexico.

That leases covering the following described
lands in said Grayburg Cooperative and Unit Area are own-
ed by Grayburg Oil Company of New Mexico:

BURCH "A" LEASE, Las Cruces Serial No.
028793, described as S/2 S/2 Section 18,
N/2 and N/2 S/2 Section 19, Township 17
South, Range 30 East, N.M.P.M.

BURCH "B" LEASE, Las Cruces Serial No.
028793-84, described as NW/4, N/2 SW/4

Section 18, S/2 SW/4 Section 19, NW/4
Section 30, Township 17 South, Range 30
East; NE/4 and SW/4 Section 23, Township
17 South, Range 29 East, N.M.P.M.

KEELY "A" LEASE, Las Cruces Serial No.
028784, described as NE/4 SE/4, S/2 S/2
Section 13, N/2 NW/4, SW/4 NW/4, N/2
SW/4, NE/4, N/2 SE/4 Section 24, Town-
ship 17 South, Range 29 East, N.M.P.M.

KEELY "B" LEASE, Las Cruces Serial No.
028784-93, described as S/2 SW/4 Section
24, N/2 NW/4 Section 25 and E/2 Section
26, Township 17 South, Range 29 East, N.
M.P.M.

DEXTER LEASE, Las Cruces Serial No. 054406
described as SE/4 NW/4 Section 24, Town-
ship 17 South, Range 29 East, N.M.P.M.

That leases covering the following described
lands in said Grayburg Cooperative and Unit Area are own-
ed by Western Production Company, Inc.

BURCH "C" LEASE, Las Cruces Serial No.
028793, described as NE/4, N/2 SE/4 Sec-
tion 18, S/2 SE/4 Section 19, NE/4 and
S/2 Section 30, Township 17 South, Range
30 East, N.M.P.M.; NW/4 and SE/4 Section
23, Township 17 South, Range 29 East, N.
M.P.M.

KEELY "C" LEASE, Las Cruces Serial No.
028784, described as N/2 SW/4, NW/4 SE/4
Section 13, S/2 SE/4 Section 24, S/2 NW/4,
NE/4 and S/2 Section 25, W/2 Section 26,
Township 17 South, Range 29 East, N.M.P.M.

2. That from inception of production to the
present time there have been drilled a total of 80 produc-
ing oil wells and a total of 5 gas injection wells; that
said producing wells are all producing from the Grayburg-
Jackson Pay of the Upper San Andres Formation encounter-
ed at an approximate depth of 2800 feet, with the excep-
tion of the Keely Well No. 27-C of Western Production
Company, Inc., located in the NW/4 of Section 26, Town-
ship 17 South, Range 29 East, N.M.P.M., which is produc-

ing from the sub-Grayburg Section encountered at an approximate depth of 3300 feet. That each of said producing wells has been drilled on a spacing pattern of one well to a legal forty-acre subdivision, except Grayburg Oil Company of New Mexico's Burch Well No. 13-B, located in the SE/4 SW/4 Section 19, Township 17 South, Range 30 East, and its Keely Well No. 11-A, located in the NE/4 SE/4 Section 24, Township 17 South, Range 29 East, which said two wells are drilled on a ten-acre spacing pattern, and its Keely Well No. 13-B in the SE/4 NE/4 of Section 26, Township 17 South, Range 29 East, N.M.P.M., which is drilled on a "five spot" location.

3. That heretofore, in Case No. 152, upon which hearing was held before the New Mexico Oil Conservation Commission on July 29, 1948, the Oil Conservation Commission granted to Applicants herein permits to drill twenty-eight unorthodox "five spot" locations upon the leases hereinabove described, said locations being shown on map attached hereto, marked Exhibit "A" and by reference made a part hereof.

That reference is hereby made to the complete file of the New Mexico Oil Conservation Commission in Case No. 152 for the exact locations from section lines of said twenty-eight unorthodox locations.

4. That it is Applicants' belief that by unitizing certain tracts out of the above described leases for allowable and proration purposes, that the creation of such unitized tracts will enable Applicants to produce the wells upon such respective tracts at a more efficient rate of withdrawal; that a greater ultimate

recovery of oil could be obtained from each of said unitized tracts, and that such method of operation of Applicants' wells would be in the interest of conservation and prevent waste, and that substantial quantities of oil could be produced which would not otherwise be recovered.

5. That Applicants desire to create and establish the following tracts of land into unitized tracts for proration and allowable purposes only:

GRAYBURG OIL COMPANY OF NEW MEXICO UNITS:

UNIT G-1, described as S/2 S/2 Section 18, N/2 and N/2 S/2 Section 19, Township 17 South, Range 30 East, N.M.P.M.

UNIT G-2, described as S/2 SW/4 Section 19, NW/4 Section 30, Township 17 South, Range 30 East, N.M.P.M.

UNIT G-3, described as SW/4 Section 23, Township 17 South, Range 29 East, N.M.P.M.

UNIT G-4, described as N/2 NW/4, SW/4 NW/4, N/2 SW/4, N/2 SE/4 and NE/4 Section 24, Township 17 South, Range 29 East, N.M.P.M.

UNIT G-5, described as S/2 SW/4 Section 24, N/2 NW/4 Section 25, E/2 Section 26, Township 17 South, Range 29 East, N.M.P.M.

WESTERN PRODUCTION COMPANY, INC. UNITS:

UNIT W-1, described as S/2 SE/4 Section 19, N/2 NE/4 Section 30, Township 17 South, Range 30 East, N.M.P.M.

UNIT W-2, described as SE/4 Section 23, Township 17 South, Range 29 East, N.M.P.M.

UNIT W-3, described as W/2 Section 26, Township 17 South, Range 29 East, N.M.P.M.

UNIT W-4, described as S/2 SE/4 Section 24, S/2 NW/4, SW/4 and E/2 Section 25, Township 17 South, Range 29 East, N.M.P.M.

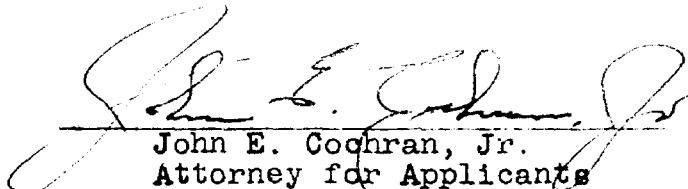
That each of said above described units are shown and outlined on map attached hereto, marked Exhibit "A" and by reference made a part hereof.

6. That upon each of said above units permits have heretofore been granted by the Oil Conservation Commission to drill one or more "five spot" locations.

7. That in the drilling of the unorthodox locations, in nearly all instances, the drilling of each location will constitute a second well upon a forty acre proration unit and, in the event an order is entered by the Oil Conservation Commission granting permission to unitize for allowable and proration purposes the tracts hereinabove last described, it is not Applicants' intention, nor do Applicants ask that they be granted any allowable in addition to the daily allowable as fixed by the Oil Conservation Commission for the total number of developed forty acre proration units comprising the unitized tracts hereinabove described, nor is it Applicants' intention to produce any well on any unitized tract in excess of the current top allowable set by the Oil Conservation Commission, but Applicants desire to produce the total allowable, as fixed by the Oil Conservation Commission, for each unitized tract, hereinabove described, from all of the wells located upon such unitized tract, insofar as all wells located on said unitized tracts are producing from the same horizon.

WHEREFORE, Applicants pray that this Commission set a date for hearing this Application, and give notice thereof in accordance with its rules and regulations, and that upon presentation of this Application, an order be entered unitizing the tracts hereinabove last described, respectively, for proration and allowable purposes; that Applicants be permitted to produce from each

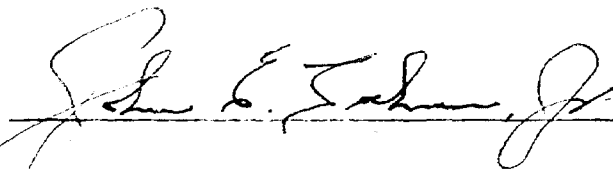
unitized tract the total allowable production, as fixed by the Oil Conservation Commission for such unitized tract, from all of the wells located upon such unitized tract, but that no well located upon any unitized tract shall be permitted to produce at a rate in excess of the top allowable, as fixed by the Oil Conservation Commission.


John E. Cochran, Jr.
Attorney for Applicants

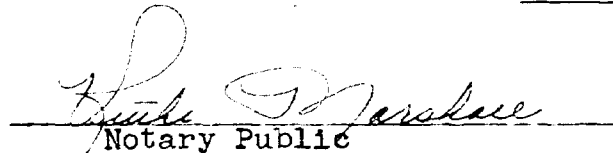
Grayburg Oil Company of New Mexico
Western Production Company, Inc.

STATE OF NEW MEXICO)
 : ss.
COUNTY OF EDDY)

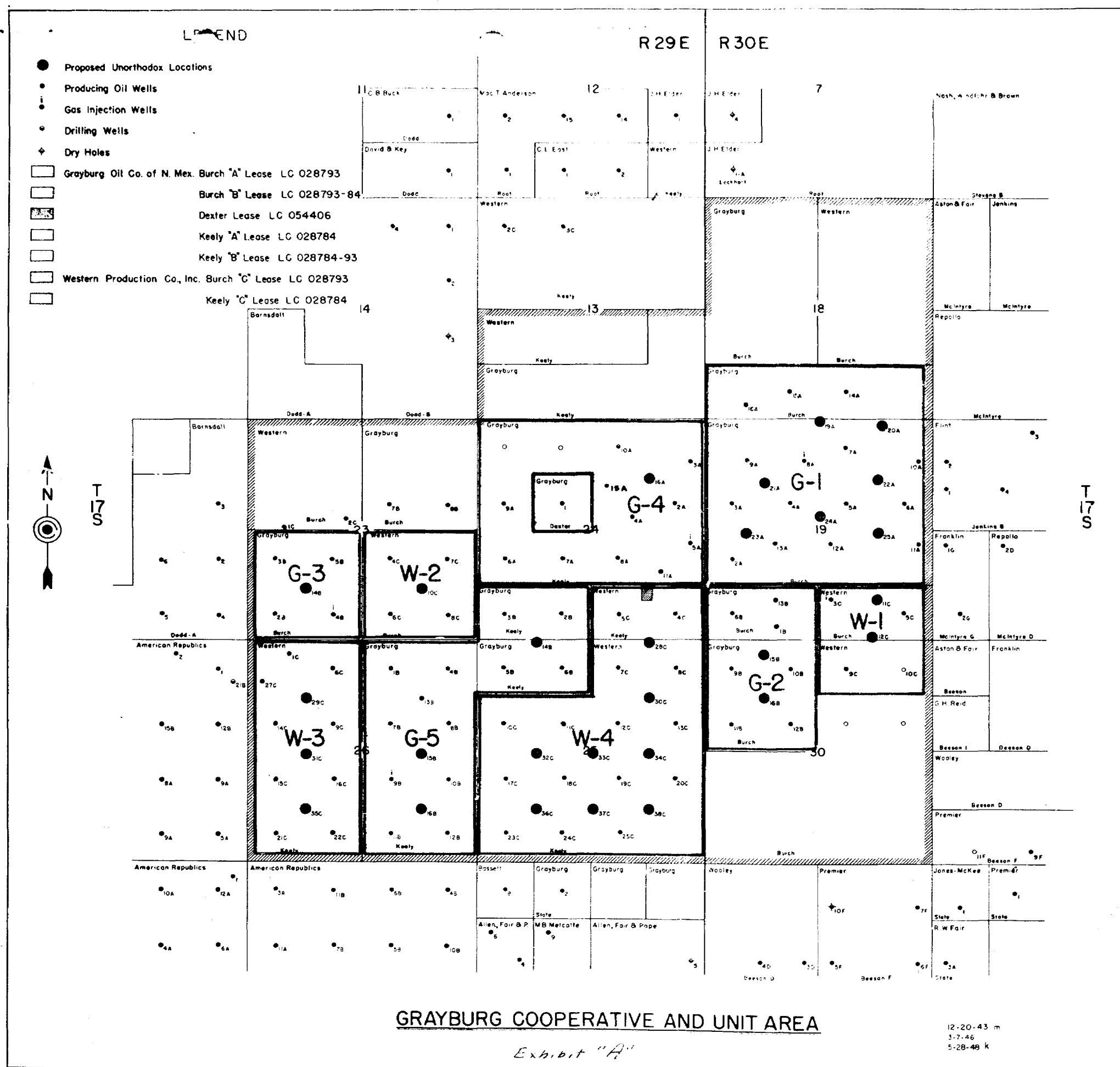
JOHN E. COCHRAN, JR., being first duly sworn upon his oath deposes and states: That he is attorney for the Applicants in the above and foregoing Application, and that he has read the same and from personal knowledge knows the matters therein contained to be true and correct, except such statements as are alleged upon information and belief, and as to those, he verily believes them to be true; that this verification is made by him on behalf of Grayburg Oil Company of New Mexico and Western Production Company, Inc.



SUBSCRIBED AND SWORN TO before me this 11th
day of ~~September~~ ^{October}, 1948.


Notary Public

My commission expires:
April 15, 1950



BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF APPLICATION OF GRAYBURG
OIL COMPANY OF NEW MEXICO, AND WESTERN
PRODUCTION COMPANY, INC., FOR AN ORDER
GRANTING PERMISSION TO UNITIZE CERTAIN
TRACTS WITHIN THE BOUNDARIES OF THE GRAY-
BURG COOPERATIVE AND UNIT AREA, IN TOWN-
SHIP 17 SOUTH, RANGES 29 AND 30 EAST,
N.M.P.M., IN THE GRAYBURG-JACKSON POOL OF
EDDY COUNTY, NEW MEXICO, FOR PRODUCTION AND
ALLOWABLE PURPOSES

CASE NO. 164

APPLICATION

GRAYBURG OIL COMPANY OF NEW MEXICO, and WESTERN PRODUCTION COMPANY, INC., Applicants herein, are both corporations organized and existing under and by virtue of the laws of the State of New Mexico, and in connection herewith respectfully show to the Oil Conservation Commission:

1. Applicants are the owners and holders, respectively, of all of the Federal Oil and Gas Leases comprising what is known as the Grayburg Cooperative and Unit Area, situated in Eddy County, State of New Mexico.

That leases covering the following described lands in said Grayburg Cooperative and Unit Area are owned by Grayburg Oil Company of New Mexico:

BURCH "A" LEASE, Las Cruces Serial No. 028792, described as S/2 S/2 Section 18, N/2 and N/2 S/2 Section 19, T.17 S, R.30 E, N.M.P.M.

BURCH "B" LEASE, Las Cruces Serial No. 028793-84, described as NW/4, N/2 SW/4 Section 18, S/2 SW/4 Section 19, NW/4 Section 30, T.17 S, R.30 E; NE/4 and SW/4 Section 23, T.17 S, R.29 E, N.M.P.M.

KEELY "A" LEASE, Las Cruces Serial No. 028784, described as NE/4 SE/4, S/2 S/2 Section 13, N/2 NW/4 SW/4 NW/4, N/2 SW/4, NE/4, N/2 SE/4 Section 24, T.17 S, R.29 E, N.M.P.

KEELY "B" LEASE, Las Cruces Serial No. 028784-93, described as S/2 SW/4 Section 24, N/2 NW/4 Section 25 and E/2 Section 26, T.17 S, R.29 E, N.M.P.M.

DEXTER LEASE, Las Cruces Serial No. 054406, described as SE/4 NW/4 Section 24, T.17 S, R.29 E, N.M.P.M.

That leases covering the following described lands in said Grayburg Cooperative and Unit Area are owned by Western Production Company, Inc.

BURCH "C" LEASE, Las Cruces Serial No. 028793, described as NE/4, N/2 SE/4 Section 18, S/2 SE/4 Section 19, NE/4 and S/2 Section 30, T.17 S, R.30 E, N.M.P.M.; NW/4 and SE/4 Section 23, T.17 S, R.29 E, N.M.P.M.

KEELY "C" LEASE, Las Cruces Serial No. 028784, described as N/2 SW/4, NW/4 SE/4 Section 13, S/2 SE/4 Section 24, S/2 NW/4, NE/4 and S/2 Section 25, W/2 Section 26, T.17 S, R.29 E, N.M.P.M.

2. That from inception of production to the present time there have been drilled a total of 80 producing oil wells and a total of 5 gas injection wells; that said producing wells are all producing from the Grayburg-Jackson Pay of the Upper San Andres Formation encountered at an approximate depth of 2800 feet, with the exception of the Keely Well No. 27-C of Western Production Company, Inc., located in the NW/4 of Section 26, T.17 S, R.29 E, N.M.P.M., which is producing from the sub-Grayburg Section encountered at an approximate depth of 3300 feet. That each of said producing wells has been drilled on a spacing pattern of one well to a legal forty-acre subdivision, except Grayburg Oil Company of New Mexico's Burch Well No. 13-B, located in the SE/4 SW/4 Section 19, T.17 S, R.30 E, and its Keely Well No. 11-A, located in the NE/4 SE/4 Section 24, T.17 S, R.29 E, which said two wells are drilled on a ten-acre spacing pattern, and its Keely Well No. 13-B in the SE/4 NE/4 of Section 26, T.17 S, R.29 E, N.M.P.M., which is drilled on a "five spot" location.

3. That heretofore, in Case No. 152, upon which hearing was held before the New Mexico Oil Conservation Commission on July 29, 1948, the Oil Conservation Commission granted to Applicants herein permits to drill twenty-eight unorthodox "five spot" locations upon the leases hereinabove described, said locations being shown on map attached hereto, marked Exhibit "A" and by reference made a part hereof.

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4. That it is Applicants' belief that by unitizing certain tracts out of the above described leases for allowable and proration purposes, that the creation of such unitized tracts will enable Applicants to produce the wells upon such respective tracts at a more efficient rate of withdrawal; that a greater ultimate recovery of oil could be obtained from each of said unitized tracts, and that such method of operation of Applicants' wells would be in the interest of conservation and prevent waste, and that substantial quantities of oil could be produced which would not otherwise be recovered.

5. That Applicants desire to create and establish the following tracts of land into unitized tracts for proration and allowable purposes only:

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UNIT G-2, described as S/2 SW/4 section 19, NW/4 section 30, T.17 S, R.30 E, N.M.P.M.

UNIT G-3, described as SW/4 section 23, T.17 S, R.29 E, N.M.P.M.

UNIT G-4, described as N/2 NW/4, SW/4 NW/4, N/2 SW/4, N/2 SE/4 and NE/4 section 24, T.17 S, R.29 E, N.M.P.M.

UNIT G-5, described as S/2 SW/4 section 24, N/2 NW/4 section 25, E/2 section 26, T.17 S, R.29 E, N.M.P.M.

WESTERN PRODUCTION COMPANY, INC. UNITS:

UNIT W-1, described as S/2 SE/4 section 19, N/2 NE/4 section 30, T.17 S, R.30 E, N.M.P.M.

UNIT W-2, described as SE/4 section 23, T.17 S, R.29 E, N.M.P.M.

UNIT W-3, described as W/2 section 26, T.17 S, R.29 E, N.M.P.M.

UNIT W-4, described as S/2 SE/4 section 24, S/2 NW/4, SW/4 and E/2 section 25, T.17 S, R.29 E, N.M.P.M.

That each of said above described units are shown and outlined on map attached hereto, marked Exhibit "A" and by reference made a part hereof.

6. That upon each of said above units permits have heretofore been granted by the Oil Conservation Commission to drill one or more "five spot" locations.

7. That in the drilling of the unorthodox locations, in nearly all instances, the drilling of each location will constitute a second well upon a forty acre proration unit and, in the event an order is entered by the Oil Conservation Commission granting permission to unitize for allowable and proration purposes the tracts hereinabove last described, it is not Applicants' intention, nor do Applicants ask that they be granted any allowable in addition to the daily allowable as fixed by the Oil Conservation Commission for the total number of developed forty acre proration units comprising the unitized tracts hereinabove described, nor is it Applicants' intention to produce any well on any unitized tract in excess of the current top allowable set by the Oil Conservation Commission, but Applicants desire to produce the total allowable, as fixed by the Oil Conservation Commission, for each unitized tract, hereinabove described, from all of the wells located upon such unitized tract, insofar as all wells located on said unitized tracts are producing from the same horizon.