

Case No.

Grayburg first agreement

Application, Transcript,  
Small Exhibits, Etc.

**NEW MEXICO  
OIL CONSERVATION COMMISSION**

**GOVERNOR JOHN J. DEMPSEY**  
CHAIRMAN  
**LAND COMMISSIONER H. R. RODGERS**  
MEMBER  
**STATE GEOLOGIST JOHN M. KELLY**  
SECRETARY



**DIRECTOR**  
**JOHN M. KELLY**  
ADDRESS ALL COMMUNICATIONS  
TO THE DIRECTOR

*Santa Fe, New Mexico*

November 29, 1943

Mr. John M. Kelly, Director  
Oil Conservation Commission  
Santa Fe, New Mexico

Dear Mr. Kelly:

Reference is made to the "Grayburg Cooperative and Unit Agreement, Eddy County, New Mexico", dated June 3, 1943—and all United States Government land project with no State or privately owned land committed to said agreement. In relation to this Commission Section 22 is lacking in clarity. That section reads:

"All production and the disposal thereof shall be in conformity with allocations, allotments, and quotas made or fixed by any duly authorized person or regulatory body under any Federal or State statute; provided, that the Secretary of the Interior is vested with authority, pursuant to the amendatory acts of March 4, 1931, and of August 21, 1935, to alter or modify from time to time in his discretion, the rate of prospecting and development and the quantity and rate of production under this agreement, such authority being hereby limited to alteration or modification in the public interest, the purpose thereof and the public interest served thereby to be stated in the order of alteration or modification."

The proviso in the latter portion of the Section just quoted can mean that the Secretary of the Interior, as such, can set the rate of production at any figure within his discretion regardless of the allowable that may be set by the Commission. Should the Secretary set the allowable above the rate prescribed by the Commission, the provisions of the Connally Act and at once exceeded when such excess oil is placed into interstate transportation. In the event of a Connally Act violation:

Section 2 (1). "The term 'oil' shall mean petroleum, which, or any constituent part of which, was produced, in whole or in part, from storage in excess of the amount permitted to be produced, transported, or within the State or otherwise, and shall include any petroleum or other product of the same, whether or not it is a constituent part of such petroleum."

Section 3. "The shipment or transportation in interstate commerce from any state of contraband oil produced in such state is hereby prohibited. For the purposes of this section contraband oil shall not be deemed to have been produced in a state if none of the petroleum constituting such contraband oil, or from which it was produced or derived, was produced, transported, or withdrawn from storage in excess of the amounts permitted to be produced, transported, or withdrawn from storage under the laws of such state or under any regulation or order prescribed thereunder by any board, commission, officer, or other duly authorized agency of such state."

On the other hand, Section 22 of the agreement could receive the administrative interpretation by the Secretary, in substance - the Secretary may prescribe the rate of production within the limits of the allowable set by the State Regulatory Board. That interpretation is supported by the following:

Section 1 of the Agreement, after providing that the Federal Oil and Gas Leasing Act, as amended, together with the regulations made thereunder, shall be accepted as operating regulations as part of the Agreement, then makes the following qualification:

"Provided, that no such regulations hereby accepted shall be inconsistent with the specific terms of the leases or of this agreement, particularly in the matter of rates of royalty and rental, or in conflict with the laws of the State in which the unit area is situated."

Section 17 of the Agreement in part provides:

"Operations shall be conducted so as to provide for the most economical and efficient recovery of unitized substances to the end that maximum ultimate yield may be obtained without waste. For the purpose of more properly conserving the natural resources of the lands embraced within this agreement, the production of unitized substances shall at all times be without waste as defined by State or Federal law; ~~as follows:~~"

In this connection the question arises, what State Laws would be specifically pertinent? The State Oil Conservation Act, as amended, provides:

"Section 2. ~~Article~~ (c) The production of crude petroleum oil in this state in excess of the reasonable market demand for such crude petroleum oil. Such excess production causes or results in waste which is prohibited by this Act. The words "reasonable market demand," as used herein, shall be construed to mean the demand for such crude petroleum oil for reasonable current requirements for current consumption and use within or outside the state, together with the demand for such amounts as are reasonably necessary for building up or maintaining reasonable storage reserves of crude petroleum oil or the products thereof, or both such crude petroleum oil and products."

John M. Kelly

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11-29-43

Section 12 of the State Oil Conservation Act, as amended, empowers the Commission to set and prorate the allowable for any field or pool in the State. The same section in the last paragraph provides:

"Crude petroleum oil produced within the allowable as fixed by the Commission shall therein be referred to as 'legal oil', and crude petroleum oil produced in excess of such allowable shall be 'illegal oil'."

With the foregoing sections of the Oil Conservation Act read in connection with the provisions of the Connally Act, above referred to, and sections 22, 1 and 17 of the Agreement, said section 22 would be better revised to read in substance as hereinafter indicated: "The Secretary may prescribe the rate of production within the limits of the allowable set by the State Regulatory Board".

Should it become necessary for a unit of proration to produce more oil than the State allowable or to produce the allowable for another unit of proration, permission so to do should be received through this Commission upon petition and hearing as provided by the State Law in order to come within the provisions of the State Law and of the Connally Act.

The Agreement contemplates operations from two zones, the Grayburg and the Sub-Grayburg. In this respect the Agreement anticipates production from two separate zones or pools.

Under Section 24 of the Oil Conservation Act, as amended, there can be two pools, one above the other where they are completely separated. If an allowable is to be produced from both pools through wells upon the same proration unit a petition should be presented to the Commission as provided by law for a fact determination of complete separation of the two pools and for an order for allowable from each. This in order to conform to State Law and the Connally Act already referred to.

Very truly yours,

*Carl B. Livingston*  
Carl B. Livingston  
Chief Clerk & Legal Advisor

C.L.H.

John M. Kelly

-3-

11-28-43

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Very truly yours,

*Carl B. Livingston*  
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Chief Clerk & Legal Advisor

CML:13

*Grayburg Cooperative  
and  
Unit Agreement*



*Eddy County, New Mexico*

## GRAYBURG COOPERATIVE AND UNIT AGREEMENT

THIS AGREEMENT, entered into as of the 3 day of June, 1943, by and between the parties subscribing or consenting hereto,

### WITNESSETH:

Whereas, the parties subscribing hereto are the owners of operating, royalty, or other oil or gas interests in the area subject to this Cooperative and Unit Agreement;

WHEREAS, it is the purpose of the parties hereto to conserve natural resources, prevent avoidable waste, and secure other benefits obtainable through development and operation of the area subject to this Cooperative and Unit Agreement under the terms, conditions, and limitations set forth under and pursuant to the provisions of Sections 17, 27, and 32 of the Act of Congress approved February 25, 1920, entitled "An Act to promote the mining of coal, phosphate, oil, oil shale, gas, and sodium on the public domain," 41 Stat. 443, 448, 450, as amended or supplemented by the Acts of March 4, 1931, 46 Stat. 1525, and August 21, 1935, 49 Stat. 677, 678; 30 U. S. C. 226, 184, and 189:

NOW, THEREFORE, in consideration of the premises, and the promises hereinafter contained, the parties hereto and the parties consenting hereto agree severally among themselves, and with the Secretary of the Interior, as follows:

- ENABLING ACT** 1. That the said Act of February 25, 1920, as amended, and all pertinent regulations heretofore and all pertinent and reasonable regulations hereafter issued thereunder, including operating regulations, are accepted and made a part of this agreement; Provided, that no such regulations hereby accepted shall be inconsistent with the specific terms of the leases or of this agreement, particularly in the matter of rates of royalty and rental, or in conflict with the laws of the State in which the unit area is situated.
- AND**
- REGULATIONS**
- COOPERATIVE** 2. The following described lands are hereby designated and recognized as constituting the cooperative and unit area, for convenience generally referred to herein as the "unit area:"
- AND**
- UNIT AREA**

### NEW MEXICO MERIDIAN

T. 17 S., R. 29 E.,	Sec. 13, S-1/2
	Sec. 23, all
	Sec. 24, all
	Sec. 25, all
	Sec. 26, all
T. 17 S., R. 30 E.,	Sec. 18, all
	Sec. 19, all
	Sec. 30, all

The above-described unit area shall be enlarged or contracted whenever such action is necessary or desirable to conform with the purposes of this agreement. Notice of any proposed enlargement or contraction shall be given by Operator to all parties affected thereby at least 30 days prior to submission to the Secretary with proof of service of such notice. Such enlargement or contraction shall be effective upon approval by the Secretary of the Interior.

Exhibit "A" attached hereto is a map on which is outlined the herein-established unit area, together with the ownership of the land and leases in said area. Exhibit "B" attached hereto is a schedule showing the nature and extent of ownership of oil and gas rights in all land in the unit area

to which this agreement will become applicable by signature hereto, or to a counterpart hereof, by the owners of such rights. Said schedule shall be revised by the Operator whenever any change in the unit area or ownership of rights renders such change necessary, and the revised schedule shall be filed with the record of this agreement.

**UNITIZED  
SUBSTANCES**

3. All oil, gas, natural gasoline, and associated fluid hydrocarbons producible from the land subject to this agreement, in any and all sands or horizons, are unitized under the terms of this agreement and are hereinafter called "unitized substances."

**UNITIZED  
ZONES**

4. For the purposes of this agreement, the unitized deposits shall be separated into two zones which are hereby designated respectively, the Grayburg zone and the Sub-Grayburg zone. The Grayburg zone shall include all unitized deposits producible from any sand or horizon not more than 3,300 feet below the surface of the unit area, including unitized deposits producible from wells heretofore drilled and completed in said area. The Sub-Grayburg zone shall include all sands or deposits located below the Grayburg zone.

- OPERATOR** 5. Grayburg Unit Association is hereby designated as Operator and by signature hereto commits to this agreement all interests in unitized substances vested in it, if any, as set forth in the schedule attached hereto marked Exhibit B, and agrees and consents to accept the duties and obligations of Operator to conduct and manage the operation of said unit area for the discovery and development of unitized substances as hereinafter provided and is hereinafter called "Operator."

The right to relinquish all rights as Operator may be exercised whenever said Operator is not in default under this agreement, but no Operator shall be relieved from the duties and obligations of Operator for a period of 6 months after notice of intention to relinquish such duties and obligations has been served by it on all other parties hereto and the Secretary of the Interior, unless a new Operator shall have been selected and approved and shall have taken over and assumed the duties and obligations of Operator prior to the expiration of said period. At any time prior to the date on which relinquishment by or removal of Operator becomes effective, the parties hereto or a duly qualified new Operator may elect to purchase on reasonable terms all or any part of the retiring Operator's equipment, material, and appurtenances in or upon the land subject to this agreement, provided that no such equipment, material, or appurtenances so selected for purchase shall be removed pending determination of reasonable terms of purchase. Any equipment, material, and appurtenances not so purchased and not necessary for the preservation of wells may be removed by the retiring Operator at any time within 6 months after the relinquishment or removal becomes effective, but if not so removed shall become the joint property of the owners of operating rights in land then subject to this agreement.

Assignment of any right or rights as Operator shall be subject to approval by the Secretary of the Interior.

- SUCCESSOR  
OPERATOR** 6. Whenever the Operator shall discontinue or relinquish its rights as Operator or shall fail to fulfill its duties and obligations as Operator under this agreement, the owners of the majority of the participating acreage operating interests in the unit area, or the owners of operating rights according to their total acreage interest in the unit area until a participating area shall have been established, shall select a new Operator. Such selection shall not become effective until (a) an Operator so selected shall agree and consent in writing to accept the duties and responsibilities of Operator, and (b) the selection shall have been approved by the Secretary of the Interior. In the absence of the selection of an acceptable Operator by owners of operating rights within 90 days of notice so to do by the Secretary of the Interior, said Secretary may designate



an Operator or declare this agreement terminated. The Operator shall be subject to removal by the owners of operating rights in the same manner as herein provided for the selection of a new Operator.

**RIGHTS AND  
OBLIGATIONS  
OF OPERATOR**

7. Except as hereinafter specified, the exclusive right, privilege, and duty of exercising any and all rights of the parties signatory hereto which are necessary or convenient for prospecting for, producing, storing, and disposing of the unitized substances are hereby vested in Operator and shall be exercised by said Operator as provided in this agreement. Acceptable evidence of title to said rights shall be deposited with said Operator, and, together with this agreement, shall constitute and define Operator's rights, privileges, and obligations in the premises; provided, that nothing herein shall be construed to transfer title to any land or leases, it being understood that Operator shall have rights of possession and use only and exclusively for the purposes herein specified. Operator shall pay all costs and expenses of operations with respect to unitized land, and shall charge such costs to the account of the operating rights in the tracts comprising said land until a participating area shall have been established, and thereafter such costs shall be charged to the account of the operating rights in the participating area. On or before the 25th day of each calendar month, Operator shall render to the owners of unitized interests entitled thereto an accounting of the operations on unitized lands during the previous calendar month, and shall pay in value or deliver to each party entitled thereto a proportionate and allocated share of the products produced hereunder.

The development and operation of land subject to this agreement under the terms hereof shall be deemed full performance by Operator of all obligations for such development and operation with respect to each and every part or separately owned tract subject to this agreement, regardless of whether there is any development of any particular part or tract of the unit area.

✓ **REPRESSURING** 8. (a) **Conservation:** All natural gas produced from the cooperative and unit area, subject hereto, (except the amount used for development and operations in the said area or unavoidably lost), shall be returned to one or more of the oil producing formations of the said area; for which purpose the Operator shall acquire and install all necessary equipment, pipe lines, and other facilities, shall use existing wells or drill wells for gas input purposes, make alterations in existing wells or drill new wells for the purpose of increasing the supply of natural gas from zones productive of oil and gas, or of gas only, and in general do all things deemed to be desirable or necessary for the maintenance of formation pressures and repressuring of the area subject hereto, including the shutdown of any well producing with an excessive gas-oil ratio; and that all gas produced from the said area may be used for such repressuring purposes without accounting or compensation to the lessee of the lands from which it is produced. The Operator shall submit for approval by the oil and gas supervisor a plan of operations to carry out the purposes of this paragraph, which plan shall be effective upon approval of said supervisor and shall be subject to modification whenever such action is deemed necessary or advisable by the supervisor to accomplish the purposes of this agreement.

(b) **Natural Gasoline:** The Operator is hereby specifically authorized, in its sole discretion, to acquire and install equipment and facilities for the extraction of natural gasoline, and in the event that any natural gasoline or other products are sold the proceeds therefrom shall be credited to the respective leases covering the participating area subject hereto in the manner that the costs of conducting repressuring operation are distributed to such leases.

(c) **Plant Investment:** All capital charges for the acquisition and installment of equipment, pipe lines, drilling of input wells, and of gas wells for the repressuring system, shall be borne by the owners of operating rights of lands subject hereto in the proportion that the number of acres of each participating in production hereunder bears to the total number of acres participating in production hereunder, it being understood that 40 acres shall be regarded as participating for each well produced from the Grayburg zone as herein defined, and that as to deeper zones the participating area

shall be determined as set forth in paragraph 11 hereof; and it is further understood that where the participating area of any deeper zone or zones is overlapped by the participating area of an upper zone or zones, the acreage of said overlapped area shall be multiplied by two or more according to the number of overlapping zones.

(d) **Operating Expenses:** All costs of operating the repressuring system, including maintenance of (but not additions to) plant, equipment, pipe lines, gas and input wells, shall be borne by the owners of operating rights of lands subject hereto in the proportion that production of oil from the lands of the respective owners of operating rights bears to the total production hereunder.

**PARTICIPATION** 9. Each of the parties shall participate in the production from the said Gray-  
**GRAYBURG ZONE** burg zone to the extent that such production is obtained from lands contributed to the unit plan by them. All costs of drilling, equipping, re-drilling or abandoning wells and of the construction of service equipment and facilities to be used in the operation of wells or for the handling, treating, processing, or storage of the products thereof and of all repairs of a substantial nature, including replacement of equipment, shall be borne by the lessee of the land upon which said wells are drilled. Operating expenses, (exclusive of major repairs), and administrative expenses of the operator shall be borne by each of the parties in the proportion that the number of wells producing on the lands of each party hereto bears to the total number of producing wells operated hereunder.

**DRILLING** 10. Within 90 days after notice by the Secretary of the Interior so to do, Opera-  
**TO** tor shall begin to drill an adequate test well at a location to be approved by the  
**DISCOVERY** Federal oil and gas supervisor and thereafter continuously drill such well to a depth of approximately 5,000 feet, unless a horizon commercially productive of oil or gas shall be discovered below the Grayburg zone or the well shall be demonstrated unsuccessful below said zone at a depth of less than 5,000 feet, and thereafter, within 90 days after further notice from the Secretary of the Interior, shall continue drilling one well at a time until a commercially productive well is completed to the satisfaction of said supervisor unless or until it is reasonably proven that the unit area subject to this agreement is incapable of commercial production below said Grayburg zone; provided that, except as provided in Section 18 hereof, no notice shall be given by the Secretary of the Interior under the provisions of this section within two years after the effective date of this agreement; and provided further that, unless otherwise directed by said Secretary, Operator may so drill on his own initiative.

**PARTICIPATION** 11. The cost of drilling a test well or wells, as provided in the preceding section,  
**DEEPER ZONES** shall be borne by the owners of operating rights committed to this agreement in proportion to the acreage interests of each such owner, and upon completion of a commercially productive well in any measure below the Grayburg zone as hereinabove defined, Operator shall submit for approval by the Secretary of the Interior a schedule of lands, based on aliquot parts of subdivisions of the public-land survey, including all lands within the unit area subject to this agreement then regarded as reasonably proven to be commercially productive of oil or gas; all lands in said schedule on approval by said Secretary to constitute a participating area, effective as of the date of first production. Said schedule shall set forth the ownership of operating rights to all lands included therein and the percentage acreage interest of each owner in the total participating area subject to this agreement. Such percentage acreage interest shall govern the participation of the owner in costs and benefits of operation from and after the date the participating area becomes effective. The participating area so established shall be revised from time to time, in like manner and subject to like approval, to include additional lands regarded as reasonably proven to have been commercially productive or to exclude lands regarded as reasonably proven not to have been commercially productive; and a new schedule of percentage acreage interests conformable thereto shall thereupon be fixed. No land shall be excluded from the participating area on account of depletion of the unitized

substances. It is the intent of this section that the participating area shall at all times represent the area known or reasonably estimated to be commercially productive as of the effective date of the participating area first submitted and approved; and when such productive limits of the unit area under agreement shall have been fully and finally determined, the participating area shall become fixed; and all accounts, including any contribution toward the cost of exploratory operations, shall be adjusted, with interest allowance at five per cent (5%) as though such fixed participating area had been the participating area first constituted after completion of a commercially productive well. This section shall not provide for retroactive adjustment of royalties to the United States.

For the purpose of making such adjustment or of enforcing any payment by any party, Operator is authorized to withhold from such party any payments that might be otherwise due him, and to apply such further legal or equitable remedies as may be appropriate.

**ALLOCATION OF PRODUCTION** 12. As to any measure below the aforesaid Grayburg zone, all unitized substances produced from each participating area subject to this agreement, except any part thereof used for production and development purposes thereunder, or unavoidably lost, shall be apportioned among and allocated on an acreage basis to the several tracts of land comprising said participating area and each such tract shall have allocated to it such percentage of said production as its area bears to the said participating area.

**DEVELOPMENT AFTER DISCOVERY** 13. Upon completion, to the satisfaction of the Federal oil and gas supervisor, of a commercially productive well in any zone below the Grayburg zone in the area subject hereto, Operator shall submit for the approval of said supervisor a plan for the further development of the unit area as to said zone, which plan when so approved shall constitute the further drilling obligations of Operator and shall include an adequate and effective well-casing and well-spacing program, shall provide for complete exploration of the unit area under agreement and for the determination of the commercially productive area thereof, shall afford protection to the interests of the parties hereto and of the United States against operations not under this agreement, and shall specify the number of wells proposed to be drilled to production during each calendar year; provided that, upon approval of said supervisor, said plan for further development may be modified from time to time to meet changed conditions and the drilling obligations shall be conformed thereto. All parties hereto and any and all interested parties approving or consenting to this agreement agree that after completion of one commercially productive well no further wells, except such as may be necessary to afford protection against operations not under this agreement, shall be drilled until such plan of development shall have been approved in writing by said supervisor, and that all drilling requirements of leases, operating agreements, or other contracts affecting the unit area subject to this agreement are hereby modified to conform to and be satisfied by the drilling requirements of this agreement.

**DEVELOPMENT OR OPERATION BY PARTIES OTHER THAN OPERATOR** 14. Any party hereto owning or controlling a majority interest of the operating rights in any tract included in the non-participating area having thereon a regular well location in accordance with the approved well spacing program may drill a well at such location at his own expense, unless Operator elects and commences to drill such well within 90 days of receipt of notice from said party of his intention to drill the well.

If such well, drilled at the expense of said party, results in production such that the land upon which it is situated may properly be included in the participating area said party shall be reimbursed one hundred percent (100%) of the average cost of drilling similar producing wells in the participating area subject to this agreement and appropriate revision shall be made in the participating area.

If any well drilled on the non-participating area by Operator or by said party obtains production insufficient to justify inclusion in the participating area of the land on which said well is situated, said party at his election, within 30 days of determination of such insufficiency, shall be wholly re-

substances. It is the intent of this section that the participating area shall at all times represent the area known or reasonably estimated to be commercially productive as of the effective date of the participating area first submitted and approved; and when such productive limits of the unit area under agreement shall have been fully and finally determined, the participating area shall become fixed; and all accounts, including any contribution toward the cost of exploratory operations, shall be adjusted, with interest allowance at five per cent (5%) as though such fixed participating area had been the participating area first constituted after completion of a commercially productive well. This section shall not provide for retroactive adjustment of royalties to the United States.

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**✓ ALLOCATION  
OF  
PRODUCTION**

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**DEVELOPMENT  
AFTER  
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13. Upon completion, to the satisfaction of the Federal oil and gas supervisor, of a commercially productive well in any zone below the Grayburg zone in the area subject hereto, Operator shall submit for the approval of said supervisor a plan for the further development of the unit area as to said zone, which plan when so approved shall constitute the further drilling obligations of Operator and shall include an adequate and effective well-casing and well-spacing program, shall provide for complete exploration of the unit area under agreement and for the determination of the commercially productive area thereof, shall afford protection to the interests of the parties hereto and of the United States against operations not under this agreement, and shall specify the number of wells proposed to be drilled to production during each calendar year; provided that, upon approval of said supervisor, said plan for further development may be modified from time to time to meet changed conditions and the drilling obligations shall be conformed thereto. All parties hereto and any and all interested parties approving or consenting to this agreement agree that after completion of one commercially productive well no further wells, except such as may be necessary to afford protection against operations not under this agreement, shall be drilled until such plan of development shall have been approved in writing by said supervisor, and that all drilling requirements of leases, operating agreements, or other contracts affecting the unit area subject to this agreement are hereby modified to conform to and be satisfied by the drilling requirements of this agreement.

**✓ DEVELOPMENT OR  
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THAN OPERATOR**

14. Any party hereto owning or controlling a majority interest of the operating rights in any tract included in the non-participating area having thereon a regular well location in accordance with the approved well spacing program may drill a well at such location at his own expense, unless Operator elects and commences to drill such well within 90 days of receipt of notice from said party of his intention to drill the well.

If such well, drilled at the expense of said party, results in production such that the land upon which it is situated may properly be included in the participating area said party shall be reimbursed one hundred percent (100%) of the average cost of drilling similar producing wells in the participating area subject to this agreement and appropriate revision shall be made in the participating area.

If any well drilled on the non-participating area by Operator or by said party obtains production insufficient to justify inclusion in the participating area of the land on which said well is situated, said party at his election, within 30 days of determination of such insufficiency, shall be wholly re-

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For the purpose of making such adjustment or of enforcing any payment by any party, Operator is authorized to withhold from such party any payments that might be otherwise due him, and to apply such further legal or equitable remedies as may be appropriate.

**ALLOCATION OF PRODUCTION** 12. As to any measure below the aforesaid Grayburg zone, all unitized substances produced from each participating area subject to this agreement, except any part thereof used for production and development purposes thereunder, or unavoidably lost, shall be apportioned among and allocated on an acreage basis to the several tracts of land comprising said participating area and each such tract shall have allocated to it such percentage of said production as its area bears to the said participating area.

**DEVELOPMENT AFTER DISCOVERY** 13. Upon completion, to the satisfaction of the Federal oil and gas supervisor, of a commercially productive well in any zone below the Grayburg zone in the area subject hereto, Operator shall submit for the approval of said supervisor a plan for the further development of the unit area as to said zone, which plan when so approved shall constitute the further drilling obligations of Operator and shall include an adequate and effective well-casing and well-spacing program, shall provide for complete exploration of the unit area under agreement and for the determination of the commercially productive area thereof, shall afford protection to the interests of the parties hereto and of the United States against operations not under this agreement, and shall specify the number of wells proposed to be drilled to production during each calendar year; provided that, upon approval of said supervisor, said plan for further development may be modified from time to time to meet changed conditions and the drilling obligations shall be conformed thereto. All parties hereto and any and all interested parties approving or consenting to this agreement agree that after completion of one commercially productive well no further wells, except such as may be necessary to afford protection against operations not under this agreement, shall be drilled until such plan of development shall have been approved in writing by said supervisor, and that all drilling requirements of leases, operating agreements, or other contracts affecting the unit area subject to this agreement are hereby modified to conform to and be satisfied by the drilling requirements of this agreement.

✓ **DEVELOPMENT OR OPERATION BY PARTIES OTHER THAN OPERATOR** 14. Any party hereto owning or controlling a majority interest of the operating rights in any tract included in the non-participating area having thereon a regular well location in accordance with the approved well spacing program may drill a well at such location at his own expense, unless Operator elects and commences to drill such well within 90 days of receipt of notice from said party of his intention to drill the well.

If such well, drilled at the expense of said party, results in production such that the land upon which it is situated may properly be included in the participating area said party shall be reimbursed one hundred percent (100%) of the average cost of drilling similar producing wells in the participating area subject to this agreement and appropriate revision shall be made in the participating area.

If any well drilled on the non-participating area by Operator or by said party obtains production insufficient to justify inclusion in the participating area of the land on which said well is situated, said party at his election, within 30 days of determination of such insufficiency, shall be wholly re-

sponsible for and may operate and produce the well at his sole expense and for his sole benefit. If such well was drilled by Operator, said party shall pay the Operator a fair salvage value price for the casing and other equipment left in the well.

Wells drilled at the sole expense of any party or produced at his sole expense and for his sole benefit shall be subject to the drilling and producing requirements of this agreement the same as though drilled or produced by Operator; and royalties in amount or value of production from any such well on land of the United States shall be paid as specified in the lease affected, unless otherwise authorized in writing by the Secretary of the Interior.

**RENTAL AND ROYALTY PAYMENTS** 15. Operator, on behalf of the respective lessees, shall pay all rentals and royalties due the United States on account of lands subject to this agreement and shall distribute the cost thereof to the parties hereto conformably with their respective rental and royalty obligations. On request of any party hereto, Operator shall pay other royalties on his behalf in accordance with a schedule furnished by him and charge the cost thereof to his account; provided, that Operator shall incur thereby no responsibility to pay royalty owner, but such responsibility shall be and remain an obligation of the owners of the operating rights on the lands subject hereto.

**GOVERNMENT ROYALTIES AND RENTALS** 16. Royalty to the United States shall be paid at the rates specified in the respective Federal leases based on the amount of production from the Grayburg zone of each leasehold and as to the Sub-Grayburg zone based on the amount of production allocated to the tracts thereof; provided that, for leases in which the royalty rate on oil depends on the average daily oil production per well, the royalty rate in each participating area shall be determined for each lease by the average daily production of the oil wells subject to this agreement producing from that participating area; and for leases in which the royalty rate on gas depends on the average daily gas production per well, the royalty in each participating area shall be determined for each lease by the average daily production of gas per well subject to this agreement producing from that participating area.

**CONSERVATION** 17. Operations shall be conducted so as to provide for the most economical and efficient recovery of unitized substances to the end that maximum ultimate yield may be obtained without waste. For the purpose of more properly conserving the natural resources of the lands embraced within this agreement, the production of unitized substances shall at all times be without waste as defined by State or Federal law; shall be limited to such production as can be put to beneficial use with adequate realization of fuel values; and in the discretion of the Secretary of the Interior shall be limited by the beneficial demand as determined by said Secretary for gas or for oil, whichever would tend to avoid excessive production of either oil or gas.

**DRAINAGE** 18. Operator shall take appropriate and adequate measures to prevent drainage of oil or gas from lands subject to this agreement by wells on land not subject to this agreement, or, with approval of the Secretary of the Interior, pay a fair and reasonable compensatory royalty as determined by the Federal oil and gas supervisor.

**LEASES CONFORMED TO AGREEMENT** 19. The parties hereto or consenting hereto holding leases embracing lands of the United States subject to this agreement consent that the Secretary of the Interior shall, and said Secretary by his approval of this agreement does, establish, alter, change, or revoke the drilling, producing, and royalty requirements of such leases and the regulations in respect thereof, to conform said requirements to the provisions of this agreement.

The Secretary of the Interior further agrees and consents that during the effective life of this agreement, the prospecting, drilling, and producing operations performed by the operator upon any lands subject hereto will be accepted and deemed to be operations under and for the benefit of all such leases; that suspension of operations or production on any such lease shall be deemed not to have occurred if there be operations or production on any part of the unit area subject to this agreement; that no such lease shall be deemed to expire by reason of failure to produce wells situated on land therein embraced; and that suspension of all operations and production on the unit area pursuant to direction or consent of said Secretary shall be deemed to constitute such suspension pursuant to such direction or consent with respect to each such lease.

**COVENANTS RUN WITH LAND** 20. The covenants herein run with the land until this agreement terminates, and any grant, transfer, or lease of interest in lands or leases subject hereto shall be conditioned on the assumption of all privileges and obligations hereunder by the grantee, transferee, lessee, or other successor in interest and as to Federal land shall be subject to approval by the Secretary of the Interior.

**EFFECTIVE DATE AND TERM** 21. This agreement shall become effective on the first of the calendar month next following approval by the Secretary of the Interior and shall terminate one year from said date unless (1) such date of expiration is extended by the Secretary of the Interior; or (2) there shall have been placed in operation a compressor plant capable of returning to the formation as much gas as is being produced from the Grayburg zone at the effective date of this agreement and an acceptable plan for the operation of said plant has been approved under the terms of this agreement, in which case this agreement shall remain in effect as long as unitized substances can be produced from the unitized lands in paying quantities; or (3) it is proved at an earlier date that the repressuring of the Grayburg zone is incapable of successful operation and, with the approval of the Secretary of the Interior, notice of termination is given by Operator to all parties in interest at their last known address; provided that this agreement may be terminated at any time by consent of the owners of 75 per centum on an acreage basis of the operating rights signatory hereto with the approval of the Secretary of the Interior.

**RATE OF DEVELOPMENT AND PRODUCTION** 22. All production and the disposal thereof shall be in conformity with allocations, allotments, and quotas made or fixed by any duly authorized person or regulatory body under any Federal or State statute; provided, that the Secretary of the Interior is vested with authority, pursuant to the amendatory acts of March 4, 1931, and of August 21, 1935, to alter or modify from time to time in his discretion, the rate of prospecting and development and the quantity and rate of production under this agreement, such authority being hereby limited to alteration or modification in the public interest, the purpose thereof and the public interest served thereby to be stated in the order of alteration or modification.

**DETERMINATIONS BY OPERATOR AND REVIEW THEREOF** 23. Operator shall determine the date of first authentic knowledge of information on which revision of any participating area shall be predicated; shall determine whether any well, horizon, land, or area subject to this agreement is proven or regarded as reasonably proven to be or to have been commercially productive or not commercially productive, it being understood and agreed that commercial productivity shall be the productive capacity estimated to be sufficient to return normal drilling and production costs under wise and skillful management; and shall determine other matters involved in this agreement for which a different method of determination is not herein established: Provided, that Operator shall give timely notice of all such determinations to all interested parties, including the Secretary of the Interior: Provided, further, that all such determinations may be reviewed by the Secretary of the Interior on his own initiative or on written request of any interested party, notice of any such review to be given to all interested parties, including Operator, within 60



days after receipt of notice of Operator's determination; and provided, further, that any matters so reviewed, on request or consent of Operator, may be submitted to a committee of three competent persons appointed by said Secretary, one on nomination of Operator, one on nomination of the other interested parties, and the third on nomination of the first two, the cost of such committee to be a cost of operation and its report (which shall be binding on the committee when concurred in by any two of its members) to be submitted to said Secretary and copies thereof by him to Operator and other interested parties; and Provided, further, that opportunity shall be given in said review for all interested parties to present their contentions and supporting evidence by written or oral communication to said committee or said Secretary, and that after consideration of all credible evidence said Secretary shall render a reasonable decision based thereon and in conformity therewith, which decision, so made and rendered, shall be final and binding on all parties hereto or consenting hereto.

**COUNTERPARTS** 24. This agreement may be executed in any number of counterparts with the same force and effect as if all parties had signed the same document.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by their officers thereunto duly authorized the 3 day of June, 1943.

ATTEST:

H. B. DUCHAND  
Asst. Secretary

GRAYBURG UNIT ASSOCIATION

By C. C. SPICER  
President

*Reg 6-1-43 Amelch*

ATTEST:

H. B. DUCHAND  
Secretary

GRAYBURG OIL COMPANY OF NEW MEXICO

By C. C. SPICER  
President

ATTEST:

M. C. CAMPBELL  
Asst. Secretary

WESTERN PRODUCTION COMPANY, INC.

By H. H. MADDREN  
Vice President

*Reg 7-14-43 Amelch*

State of California }  
County of Los Angeles } ss.

On this 3 day of June A. D., 1943, before me personally appeared C. C. Spicer, to me personally known, who, being by me duly sworn, did say that he is the President of Grayburg Unit Assn., a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and said C. C. Spicer acknowledged said instrument to be the free act and deed of said corporation.

In Witness Whereof I have hereunto set my hand and affixed my official seal on the day and year first above written.

CHAUNCEY C. JOHNSTON  
Notary Public in and for said County and State  
My Commission Expires July 15, 1946

State of California }  
County of Los Angeles } ss.

On this 3 day of June A. D., 1943, before me personally appeared C. C. Spicer, to me personally known, who, being by me duly sworn, did say that he is the President of Grayburg Oil Co. of N. M., a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and said C. C. Spicer acknowledged said instrument to be the free act and deed of said corporation.

In Witness Whereof I have hereunto set my hand and affixed my official seal on the day and year first above written.

CHAUNCEY C. JOHNSTON  
Notary Public in and for said County and State  
My Commission Expires July 15, 1946

State of California }  
County of Los Angeles } ss.

On this 3 day of June A. D., 1943, before me personally appeared H. H. Maddren, to me personally known, who, being by me duly sworn, did say that he is the Vice President of Western Production Co. Inc., a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and said H. H. Maddren acknowledged said instrument to be the free act and deed of said corporation.

In Witness Whereof I have hereunto set my hand and affixed my official seal on the day and year first above written.

CHAUNCEY C. JOHNSTON  
Notary Public in and for said County and State  
My Commission Expires July 15, 1946

#### **APPROVAL—CERTIFICATION—DETERMINATION**

Pursuant to the statutory authority in the Secretary of the Interior under the Act approved March 4, 1931, 46 Stat. 1523, 30 U. S. C. 184, and the Act approved August 21, 1935, 49 Stat. 674, 30 U. S. C. 222, amending the Act approved February 25, 1920, 41 Stat. 437, 30 U. S. C. 181, in order to secure the proper protection of the public interest, I, Oscar L. Chapman, Assistant Secretary of the Interior, this 5th day of Oct., 1943, hereby take the following action:

A. Approve the attached cooperative and unit agreement entered into between Grayburg Unit Association and others subscribing thereto.

B. Determine and certify that the plan of development and operation of the area subject to the GRAYBURG COOPERATIVE AND UNIT AGREEMENT, NEW MEXICO, contemplated in said agreement is for the purpose of more properly conserving the oil or gas resources of said area and is necessary and advisable in the public interest.

C. Certify that each and every lease heretofore or hereafter issued for lands of the United States and made subject to said agreement, from the effective date thereof, and concurrently therewith, shall be modified as to the drilling, producing, and royalty provisions of such lease to conform with said agreement, that the prospecting, drilling, and producing operations performed by the operator upon any lands subject to said agreement will be accepted and deemed to be operations under and for the benefit of all subject leases, and each such lease shall be deemed to continue in force and effect so long as oil or gas is produced in paying quantities anywhere in said area, including the term of any suspension of operations pursuant to any order or consent of the Secretary of the Interior and to continue until the termination of said agreement.

(SEAL)

OSCAR L. CHAPMAN  
Assistant Secretary of the Interior

**CONSENT OF ROYALTY OWNER**

The undersigned, \_\_\_\_\_, owner \_\_\_\_\_ of royalty interest as to lands subject to the foregoing Grayburg Cooperative and Unit Agreement, which said royalty interest and lands are described below, does hereby consent to the inclusion of said lands under said Grayburg Cooperative and Unit Agreement, and does hereby ratify, approve and consent to all the terms thereof.

DESCRIPTION \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

State of \_\_\_\_\_ }  
County of \_\_\_\_\_ } ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, A. D., 1943, before me personally appeared \_\_\_\_\_ known to me to be the person described in and who executed the foregoing Instrument, and acknowledged to me that he executed the same as \_\_\_\_\_ free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

\_\_\_\_\_  
Notary Public in and for said County and State  
My Commission Expires

**CONSENT OF ROYALTY OWNER**

The undersigned, \_\_\_\_\_, owner \_\_\_\_\_ of royalty interest as to lands subject to the foregoing Grayburg Cooperative and Unit Agreement, which said royalty interest and lands are described below, does hereby consent to the inclusion of said lands under said Grayburg Cooperative and Unit Agreement, and does hereby ratify, approve and consent to all the terms thereof.

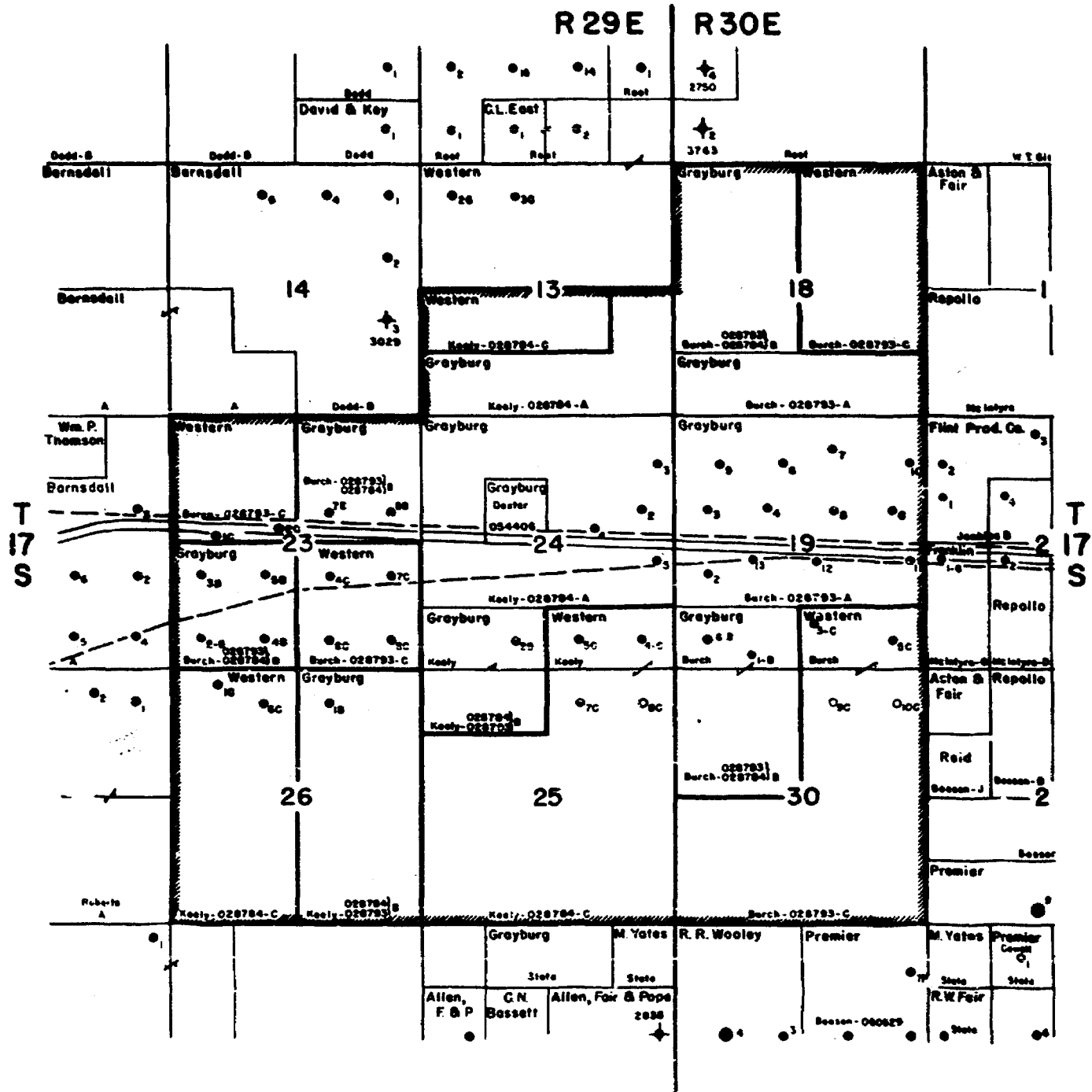
DESCRIPTION \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

State of \_\_\_\_\_ }  
County of \_\_\_\_\_ } ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, A. D., 1943, before me personally appeared \_\_\_\_\_ known to me to be the person described in and who executed the foregoing Instrument, and acknowledged to me that he executed the same as \_\_\_\_\_ free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

\_\_\_\_\_  
Notary Public in and for said County and State  
My Commission Expires



# **LEGEND**

Keely-028784-C Las Cruces (U.S.A) Permit or Lease Number

- Producing Wells
- Drilling Wells
- Locations
- Operators Boundary
- Area Boundary

## **EXHIBIT "A"**

### **OWNERSHIP MAP Of the GRAYBURG COOPERATIVE AND UNIT AREA**

Eddy County, New Mexico  
Scale 1" = 3000'

5-4-43 m

**GRAYBURG COOPERATIVE AND UNIT AREA  
OWNERSHIP OF OIL AND GAS RIGHTS**

Name of Lease	U. S. Serial No.	Description of Lands	Acreage	Minimum U. S. Government Royalty (Per cent)	Overriding Royalties	Per cent	Maximum Net Company Interest (per cent)
<b>GRAYBURG OIL COMPANY OF NEW MEXICO:</b>							
Burch	028793-A	S $\frac{1}{2}$ -S $\frac{1}{2}$ N $\frac{1}{4}$	Sec. 18-T17S-R30E ..... 157.43 Sec. 19-T17S-R30E ..... 472.27 Total Burch "A" Lease..... 629.70	5.0	Mary Lorenz Higgins, Trustee..... .5 Zana May Welter..... 1.0 J. D. Long..... .25 Howe Walker..... .25 B. F. Rose..... .25 Anna R. Welter..... 1.0 C. H. Kyte..... .5 Ronald K. Deford..... .5 J. B. Purcell..... .25 Marshall & Winston..... .5 F. A. Andrews..... .5 F. S. Winston..... 1.5 Mrs. Geo. H. Williams..... .5 7.50		87.5
Keely	028784-A	NE-SE S $\frac{1}{2}$ -S $\frac{1}{2}$ N $\frac{1}{2}$ -N $\frac{1}{2}$ SW-NW S $\frac{1}{2}$ -NE N $\frac{1}{2}$ -S $\frac{1}{2}$	Sec. 13-T17S-R29E ..... 40 " " " " ..... 160 Sec. 24 " " " " ..... 160 " " " " ..... 40 " " " " ..... 80 " " " " ..... 160 Total Keely "A" Lease..... 640	5.0	Mary Lorena Higgins, Trustee..... 1.6875 Mrs. C. A. Russell..... .25 Oil Royalties Corp. .... .5 Marshall & Winston..... 1.5 F. S. Winston..... .375 J. D. Long..... .25 Howe Walker..... .25 R. L. Long..... .5 Leah McDonald..... .9375 Elvv Barker..... .5 Quilla Dexter..... .5625 H. G. Watson, Trustee..... 1.875 7.5000		87.5
Burch	028793 } B 028784 } Cons.	N $\frac{1}{4}$ -W $\frac{1}{2}$ S $\frac{1}{2}$ -SW NW NE SW	Sec. 18-T17S-R30E ..... 232.17 Sec. 19 " " " " ..... 77.41 Sec. 30 " " " " ..... 154.94 Sec. 23-T17S-R29E ..... 160 " " " " ..... 160 Total Burch "B" Lease..... 784.52	12.5			87.5
Keely	028784 } B 028793 } Cons.	E $\frac{1}{2}$ S $\frac{1}{2}$ -SW N $\frac{1}{2}$ -NW	Sec. 26-T17S-R29E ..... 320 Sec. 24 " " " " ..... 80 Sec. 25 " " " " ..... 80 Total Keely "B" Lease..... 480	12.5			87.5
Dexter	054406	SE-NW	Sec. 24-T17S-R29E ..... 40 Total Grayburg Acreage..... 2574.22	12.5			87.5
<b>WESTERN PRODUCTION COMPANY, INC.:</b>							
Burch	028793-C	NW SE N $\frac{1}{4}$ -E $\frac{1}{2}$ S $\frac{1}{2}$ -SE NE S $\frac{1}{2}$	Sec. 23-T17S-R29E ..... 160 " " " " ..... 160 Sec. 18-T17S-R30E ..... 240 Sec. 19 " " " " ..... 80* Sec. 30 " " " " ..... 160 " " " " ..... 315.22 Total Burch Lease..... 1115.22	12.5	C. J. Dexter..... 2.5 J. W. Berry..... 2.5 5.0		82.5
Keely	028784-C	W $\frac{1}{2}$ S $\frac{1}{2}$ -SE E $\frac{1}{2}$ S $\frac{1}{4}$ -W $\frac{1}{2}$ N $\frac{1}{2}$ -SW NW-SE	Sec. 26-T17S-R29E ..... 320* Sec. 24 " " " " ..... 80* Sec. 25 " " " " ..... 320 " " " " ..... 240 Sec. 13 " " " " ..... 80 " " " " ..... 40 Total Keely Lease..... 1080 Total Western Acreage..... 2195.22 Total Grayburg Acreage..... 2574.22 Total Acreage..... 4769.44	12.5	C. J. Dexter..... 2.5 J. W. Berry..... 2.5 5.00		82.5

\* Royalties on these properties slightly exceed  $\frac{1}{8}$ , being computed on basis of daily production in accordance with royalty table as set forth in leases.  
Exchange leases on straight  $\frac{1}{8}$  royalties have been applied for.

EXHIBIT B1

OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

C  
O  
P  
Y

December 16, 1943

Mr. C. J. Duster  
Gaughey Oil Company of N. M.  
Artesia, New Mexico

Dear Mr. Duster:

At the present time the Commission is not contemplating a meeting until possibly the latter part of January. Therefore, if you will submit your plan not later than January 15th I believe it can be properly advertised and published in order that we may take the matter under advisement at our January meeting.

However, until the Commission issues an approval of the plan, the present well allowable as stated on the Production Schedule for any current month must be followed. No adjustments of this allowable between wells under the plan can be allowed until the full plan is submitted to this Commission.

With kindest personal regards and best wishes for a Happy Holiday Season, I am

Very truly yours,

John M. Kelly  
Director.

JMK:MS

**GRAYBURG OIL COMPANY  
OF NEW MEXICO**

**ARTESIA, NEW MEXICO**

December 13, 1943

Mr. John M. Kelly, Secretary  
Oil Conservation Commission  
Santa Fe, New Mexico

Dear Mr. Kelly:

With reference to our plan of operations in connection with our repressuring plant, wish to state that it looks like at this time it may not be possible to submit this plan to you before the end of December, and as we will be ready to commence operations not later than January 15, I am wondering if plan was submitted a few days after the first of January you would be able to take care of this matter during your January meeting.

Thanking you for your interest in this matter and wishing you a pleasant Christmas and a prosperous New Year, I am

Yours sincerely,

CJD:rb

  
C.J. Dexter



OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

C  
O  
P  
Y

*file*  
*notes collected*  
*phone and*  
*change of paper*  
February 24, 1944

Mr. C. J. Dexter  
Artesia, New Mexico

Re: Plan of operation for the Grayburg Zone under  
Grayburg Cooperative & Unit Agreement, Eddy  
County, New Mexico.

Dear Mr. Dexter:

The above captioned matter concerning which you  
mentioned by phone when I was in Carlsbad on February 21  
will be brought to the immediate attention of Mr. Kelly  
on his return from Washington.

The plan in question is in connection with the Unit  
Agreement for the same project which has heretofore been  
filed for the consideration of the Commission.

Very truly yours,

John M. Kelly, Director

By

Chief Clerk & Legal Adviser

CBL:MS

Jim:

Please read this over  
and let me know your  
ideas.

Jim

PLAN OF OPERATION FOR THE GRAYBURG ZONE  
UNDER  
GRAYBURG COOPERATIVE AND UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

To Supervisor, United States Geological Survey  
Roswell, New Mexico

Now comes, Grayburg Unit Association, the Unit Operator designated in the Grayburg Cooperative and Unit Agreement in Eddy County, New Mexico, and submits for the approval of the Oil and Gas Supervisor a plan of operation as agreed in accordance with Section 8 of said Agreement. The following plan of operation and development is for the present producing zone referred to in the Agreement as the Grayburg Zone and this plan of operation, when approved by said Oil and Gas Supervisor, shall constitute the further drilling and operating obligations of the Unit Operator under the Agreement as to that zone.

1. Development to Date: As of February 15, 1944, there have been drilled within the unit area, fourteen wells on the Grayburg Oil Company of New Mexico Burch "A" lease, including Burch #1 "A", 81 feet North of the South Line and 155 feet West of the East Line of NW/4 of Sec. 18, T 17S., R 30E., which was drilled to a total depth of 500 feet and operations were suspended on June 5, 1925. Report of plugging and abandonment of this well was approved on January 29, 1927. The 13 wells drilled subsequently to #1 "A" Burch are all producing oil wells. On the Burch "B" lease there are nine wells, all of which are producing oil wells. On the Grayburg Keely "A" lease nine wells, including Keely #1 "A", 402 feet S of N Line and 238 feet E of W Line of the NE/4 of Sec. 18, T 17S., R 30E., which was drilled to the total depth of 500 feet and operations suspended on August 1, 1925. Report of plugging and abandonment was approved in August, 1935. The eight wells drilled subsequent to #1 "A" Keely are all producing oil wells. On the Grayburg Keely "B" lease, five wells have been drilled, all of which are producing oil wells. On the Western Production Company Burch "C" lease there are eight wells, all of which are producing oil wells, and on the Western Production Company Keely "C" lease there are eight wells, all of which are producing oil wells, however, #2 C and 3 "C" Keely are not included in the Agreement as they are located outside the lease area. The unit area is as shown on the map attached hereto.

wells there has been drilled one producing oil well on the Grayburg Oil Company of New Mexico Dexter lease. These 50 oil wells are producing from Zone 5 to Zone 10 in the Grayburg and San Andres Limestone formations of Permian age, these zone numbers being as designated by the United States Geological Survey. The majority of the wells are producing from Zones 9 and 10, located approximately 275 feet to 350 feet below the top of the San Andres Lime. Zones #9 and 10 are those from which the most prolific production is obtained and into which the gas is to be returned. All production developed to date at a depth of less than 3300 feet below the surface is that referred to in the Agreement as the Grayburg Zone.

2- Plan of Development Grayburg Zone:

(a) Well Spacing: All future wells shall be drilled in approximately the center of each 40 acre legal subdivision. Provided that upon acceptable showing by Unit Operator of necessary dissability therefore based on structural or producing conditions and with approval of the Oil and Gas Supervisor, a well may be drilled at another location within a forty acre tract.

(b) Casing Program: The casing program shall be such as approved by the Oil and Gas Supervisor in connection with the notice of intention to drill each well to be drilled hereunder, and shall include a requirement for a string of casing to be set immediately above top of the salt and cemented with 50 sacks of cement, preceded by mud and circulated to the surface. With further provision for a production string of casing to be set not higher than the base of Zone 6 and cemented with 100 sacks of cement, preceded by mud and circulated to the surface, provided that such production string may be set at a lesser depth where commercial production should be encountered at such lesser depth and with approval of the Oil and Gas Supervisor.

Operator will set casing in such a manner as to properly conserve untiled substances, to adequately shut off any water and to expose all commercially productive horizons.

(c) Proposed Wells: Wells will be drilled in workman-like manner and at a reasonable rate of exploitation with the intention of defining the limits of commercial production in the Grayburg Zone at the earliest possible date. Unit Operator proposes to commence the drilling of four wells during the calendar year of 1944, such wells to be located as follows: Grayburg Oil Company of New Mexico #10 "B" Burch to be located C NENE of Sec. 30, T 17S., R 30E., Grayburg Oil Company of New Mexico #4 "B" Keely to be located C NENE of Sec. 26, T 17S., R 29E., Western Production Company #10 "C" Keely to be located C SEW of Sec. 25, T 17S., R 29E., Western Production Company #11 "C" Keely to be located C SENE of Sec. 25, T 17S., R 29E. Unit Operator may drill such additional wells as he sees fit and with the approval of the Oil and Gas Supervisor. If any well to be drilled hereunder proves to be a non-commercial well or dry hole, then in such event the obligation to drill subsequent wells provided for herein during the period covered by this plan of development may be modified with the approval of the Oil and Gas Supervisor.

(d) Operation of Repressuring Project:

1. Injection Wells: The following described wells have been selected for injection of gas. Grayburg Oil Company of New Mexico #5 "B" Burch, C NENE of Sec. 25, T 17S., R 29E., Grayburg Oil Company of New Mexico #3 "B" Keely, C SWSW of Sec. 24, T 17S., R 29E., Grayburg Oil Company of New Mexico #5 "A" Keely, C NENESE of Sec. 24, T 17S., R 29E., Western Production Company #3 "C" Burch, C NENESE of Sec. 19, T 17S., R 30E., Grayburg Oil Company of New Mexico #3 "A" Burch, C SENEW of Sec. 19, T 17S., R 30E. These wells were selected as injection wells from available data relating to bottom hole pressures, gas-oil ratios and producing zones which may be efficiently used for the injection of gas. Grayburg Oil Company of New Mexico #5 "B" Burch with a bottom hole pressure of 611 pounds is located in the intermediate pressure zone and has both zones 9 and 10 open, Grayburg Oil Company of New Mexico #3 "B" Keely with a bottom hole pressure

of 526 pounds is located in the intermediate pressure area and has Zone 9 open, Grayburg Oil Company of New Mexico #5 "A" Keely with a bottom hole pressure of 547 pounds is located in the intermediate pressure area and has Zones 9 and 10 open, Western Production Company #3 "C" Burch with a bottom hole pressure of 397 pounds is located in the low pressure area and has Zones 9 and 10 open. These wells will be used for the first injection of gas when operations are commenced on the repressuring program. The Grayburg Oil Company of New Mexico #8 "A" Burch has also been selected for an injection well to be used if sufficient volume of gas is available and if Unit Operator feels that inclusion of said well would be beneficial. Grayburg Oil Company of New Mexico #8 "A" Burch with a bottom hole pressure of 291 pounds is located in the low pressure area and among the older wells which have been more nearly depleted than those in other parts of the field, and has Zones 9 and 10 open. The low pressure area is that part of the field with a bottom hole pressure of 0 to 400 pounds, the intermediate pressure area is from 400 to 700 pounds and the high pressure area is that with a bottom hole pressure of 700 pounds or higher. It is felt that inasmuch as the three wells in the western part of the field in the intermediate pressure area will contribute toward the repressuring of the intermediate zone and will increase the formation pressure in this area, at the same time maintaining the pressure in the high pressure area of the central part of the field. The injection well on the eastern side of the field being Western Production Company #3 "C" Burch should serve to increase the pressure in that low pressure area. The inclusion of Grayburg Oil Company of New Mexico #8 "A" Burch in the north eastern part of the field, which is the low pressure area, will tend to either form a gas cap exerting a downward pressure and or will tend to repressure the low pressure area, either of which should have some beneficial effect on ultimate recovery.

In order to control the injection of gas into Zones 9 and 10, Unit Operator will install tubing and packers in each injection well in such a manner that gas will be confined to those

zones below the packer. Packer points will be as follows:  
Grayburg Oil Company of New Mexico #5 "B" Burch, 2675 feet,  
Grayburg Oil Company of New Mexico #3 "B" Keely, 2800 feet,  
Grayburg Oil Company of New Mexico #5 "A" Keely, 2845 feet,  
Western Production Company #3 "C" Burch, 2950 feet, Grayburg  
Oil Company of New Mexico #8 "A" Burch, 2925 feet. Upon  
installation of packer, annular space behind tubing will be  
filled with a gel-substance from the top of the packer back to  
within the casing shoe of the production string thus effectively  
sealing the formation above the packer, and annular space will  
then be loaded with oil on top of the gel and sufficient back  
pressure built up at surface with tubing head closed to assure  
an effective packer seal. Packer points have been selected so  
as to be in the hardest possible formation available between  
desired producing zones.

2- Compressors and Gas Volume: Operator has installed  
3 compressors with total of 330 H.P. and capacity of 1,250,000  
cubic feet of gas operating under 20 pound intake pressure and  
900 pound discharge pressure.

During January 1944, on test, gas volume from the field  
averaged 1,354 MCF with an average production of 1,428 BOPD  
and an average gas-oil ratio of 347 CFG/1B0.

Operator proposes to inject gas into the various wells at  
a maximum pressure of 700 pounds which will be sufficient to  
cause a differential in all of the selected injection wells.  
Gas volume for the various wells will be allocated in accordance  
with their capacity and ability to take the gas and depending  
upon pressure build up and observed reservoir behavior. Unit  
Operator feels that due to intangible factors involved in regard  
to capacity of injection wells and related reservoir, volume  
should be regulated in this manner until some results are  
observed.

3- Production: Unit Operator will produce the wells  
in such a manner as to efficiently and economically obtain the

maximum recovery. Top allowable wells with a gas-oil ratio in excess of 2,500 and marginal wells with ratios in excess of 3,500 will be shut in, the oil production adjusted to reduce the ratio, or remedial work will be performed. It is intended that an average overall gas-oil ratio of not to exceed 2,000 will be maintained in the field so as to conserve gas and reservoir energy.

As long as present top allowable is 48 barrels per day, or more, Unit Operator will forfeit allowable normally allocated to the injection wells. However, if present top allowable of 48 barrels of oil per day is decreased to a lesser figure, this plan may be modified with the approval of the Oil and Gas Supervisor, *upon get a go order from the NGLCC which will* so as to allow operator to reallocate to various other wells on the same basic lease, the production which would normally be allowed the various injection wells.

4- Engineering Data: Operator will take such tests as is necessary to determine at all times the condition of the reservoir pressure, gas-oil ratio, productivity and condition of producing wells, and to accomplish this, field wide gas-oil ratio and bottom hole pressure tests will be taken at intervals of at least every three months, with appropriate records of all such tests and information kept up to date at all times and available to the Oil and Gas Supervisor at any time. In event of excessive gas through-put at any time, individual gas-oil ratios will be taken immediately and corrective steps performed.

3. Modification of Plan: This plan may be modified from time to time by the Unit Operator with the approval of The Oil and Gas Supervisor to meet changed conditions or to take advantage of information obtained from drilling of any said wells which might make the location of any subsequent well to be drilled hereunder unreasonable or to meet changed



✓ conditions which may develop in the operation of the repressur-  
ing program. This plan of operation to remain in effect to  
December 31, 1944, prior to which date Unit Operator shall  
submit for the approval of the Oil and Gas Supervisor a new  
plan of operation or appropriate modification or amendment of  
this plan, for the calendar year of 1945.

Respectfully submitted,  
GRAYBURG UNIT ASSOCIATION

By:

APPROVED this the \_\_\_\_\_ day  
of \_\_\_\_\_, 1944

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Oil and Gas Supervisor  
Roswell, New Mexico

OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

April 19, 1944

Mr. C. J. Dexter, Vice-Pres.  
Grayburg Oil Company  
Artesia, New Mexico

Dear Mr. Dexter:

I am returning two copies of "Plan of Operation for the Grayburg Zone Under Grayburg Cooperative and Unit Agreement".

The Commission has gone over this plan of operation and feels that it adequately protects the interests of the State of New Mexico. Thank you very much for bringing this instrument to our attention and assuring you of our cooperation to make this plan a success.

Very truly yours,

John M. Kelly  
Director.

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**GRAYBURG OIL COMPANY  
OF NEW MEXICO**

**ARTESIA, NEW MEXICO**

**April 8, 1944**

Mr. John M. Kelly  
Oil Conservation Commission  
Santa Fe, New Mexico

Dear Mr. Kelly:

We are enclosing herewith, for your approval, three copies of "Plan of Operation for the Grayburg Zone Under Grayburg Cooperative and Unit Agreement", also a letter from Mr. L. G. Snow, Supervisor, Oil and Gas Operations, U. S. Geological Survey, Roswell, New Mexico, which explains the reason for the two changes made by the Government.

We hope you will find this instrument in order for your approval and we will appreciate you returning two approved copies to our company.

Thanking you for your continued cooperation.

Yours very truly,

GRAYBURG OIL COMPANY OF  
NEW MEXICO

BY

  
C. J. Dexter, Vice-Pres.

CJD:SK  
Encl-3

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the agreement

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PLAN OF OPERATION FOR THE GRAYBURG ZONE  
UNDER  
GRAYBURG COOPERATIVE AND UNIT AGREEMENT  
EDDY COUNTY, NEW MEXICO

To Supervisor, United States Geological Survey  
Roswell, New Mexico

Roswell, New Mexico

Now comes, Grayburg Unit Association, the Unit Operator designated in the Grayburg Cooperative and Unit Agreement in Eddy County, New Mexico, and submits for the approval of the Oil and Gas Supervisor a plan of operation as agreed in accordance with Section 8 of said Agreement. The following plan of operation and development is for the present producing zone referred to in the Agreement as the Grayburg Zone and this plan of operation, when approved by said Oil and Gas Supervisor, shall constitute the further drilling and operating obligations of the Unit Operator under the Agreement as to that zone.

1. Development to Date: As of February 15, 1944, there have been drilled within the unit area, fourteen wells on the Grayburg Oil Company of New Mexico Burch "A" lease, including Burch #1 "A", 81 feet North of the South Line and 155 feet West of the East Line of NW/4 of Sec. 19, T 17S., R 30E., which was drilled to a total depth of 500 feet and operations were suspended on June 5, 1925. Report of plugging and abandonment of this well was approved on ~~January 29, 1937~~ <sup>August 30, 1933</sup>. The 13 wells drilled subsequently to #1 "A" Burch are all producing oil wells. On the Burch "B" lease there are nine wells, all of which are producing oil wells. On the Grayburg Keely "A" lease nine wells, including Keely #1 "A", 402 feet S of N Line and 238 feet E of W Line of the NE/4 of Sec. 26, T 17S., R 29E., which was drilled to the total depth of 500 feet and operations suspended on August 1, 1925. Report of plugging and abandonment was approved in August, 1933. The eight wells drilled subsequent to #1 "A" Keely are all producing oil wells. On the Grayburg Keely "B" lease, five wells have been drilled, all of which are producing oil wells. On the Eastern Production Company Burch "C" lease there are eight wells, all of which are producing oil wells, and on the Eastern Production Company Keely "C" lease there are eight wells, all of which are producing oil wells, however, #2 C and 3 "C" Keely are not included in the agreement as they are located outside the boundaries of the unit area. In addition to the aforesaid

wells there has been drilled one producing oil well on the Grayburg Oil Company of New Mexico Dexter lease. These 50 oil wells are producing from Zone 5 to Zone 10 in the Grayburg and San Andres Limestone formations of Permian age, these zone numbers being as designated by the United States Geological Survey. The majority of the wells are producing from Zones 9 and 10, located approximately 275 feet to 350 feet below the top of the San Andres Lime. Zones #9 and 10 are those from which the most prolific production is obtained and into which the gas is to be returned. All production developed to date at a depth of less than 3300 feet below the surface is that referred to in the Agreement as the Grayburg Zone.

2- Plan of Development Grayburg Zone:

(a) Well Spacing: All future wells shall be drilled in approximately the center of each 40 acre legal subdivision. Provided that upon acceptable showing by Unit Operator of necessary disability therefore based on structural or producing conditions and with approval of the Oil and Gas Supervisor, a well may be drilled at another location within a forty acre tract.

(b) Casing Program: The casing program shall be such as approved by the Oil and Gas Supervisor in connection with the notice of intention to drill each well to be drilled hereunder, and shall include a requirement for a string of casing to be set immediately above top of the salt and cemented with 50 sacks of cement, preceded by mud and circulated to the surface. With further provision for a production string of casing to be set not higher than the base of Zone 6 and cemented with 100 sacks of cement, preceded by mud and circulated to the surface, provided that such production string may be set at a lesser depth where commercial production should be encountered at such lesser depth and with approval of the Oil and Gas Supervisor.

Operator will set casing in such a manner as to properly conserve unitized substances, to adequately shut off any water and to expose all commercially productive horizons.

(c) Proposed Wells: Wells will be drilled in workman-like manner and at a reasonable rate of exploitation with the intention of defining the limits of commercial production in the Grayburg Zone at the earliest possible date. Unit Operator proposes to commence the drilling of four wells during the calendar year of 1944, such wells to be located as follows: Grayburg Oil Company of New Mexico #10 "B" Burch to be located C NENW of Sec. 30, T 17S., R 30E., Grayburg Oil Company of New Mexico #4 "B" Keely to be located C NENE of Sec. 26, T 17S., R 29E., Western Production Company #10 "C" Keely to be located C SENW of Sec. 25, T 17S., R 29E., Western Production Company #11 "C" Keely to be located C SENE of Sec. 25, T 17S., R 29E. Unit Operator may drill such additional wells as he sees fit and with the approval of the Oil and Gas Supervisor. If any well to be drilled hereunder proves to be a non-commercial well or dry hole, then in such event the obligation to drill subsequent wells provided for herein during the period covered by this plan of development may be modified with the approval of the Oil and Gas Supervisor.

(d) Operation of Repressuring Project:

(1) Injection Wells: The following described wells have been selected for injection of gas. Grayburg Oil Company of New Mexico #5 "B" Burch, C NESW of Sec. 23, T 17S., R 29E., Grayburg Oil Company of New Mexico #3 "B" Keely, C SWSW of Sec. 24, T 17S., R 29E., Grayburg Oil Company of New Mexico #5 "A" Keely, C NENESW of Sec. 24, T 17S., R 29E., Western Production Company #3 "C" Burch, C NWSWSE of Sec. 19, T 17S., R 30E., Grayburg Oil Company of New Mexico #9 "A" Burch, C SENESE of Sec. 19, T 17S., R 30E. These wells were selected as injection wells from available data relating to bottom hole pressures, gas-oil ratios and producing zones which may be efficiently used for the injection of gas. Grayburg Oil Company of New Mexico #5 "B" Burch with a bottom hole pressure of 611 pounds is located in the intermediate pressure area and has both zones 9 and 10 open, Grayburg Oil Company of New Mexico #3 "B" Keely with a bottom hole pressure

of 526 pounds is located in the intermediate pressure area and has Zone 9 open, Grayburg Oil Company of New Mexico #5 "A" Keely with a bottom hole pressure of 547 pounds is located in the intermediate pressure area and has Zones 9 and 10 open, Western Production Company #5 "C" Burch with a bottom hole pressure of 397 pounds is located in the low pressure area and has Zones 9 and 10 open. These wells will be used for the first injection of gas when operations are commenced on the repressuring program. The Grayburg Oil Company of New Mexico #8 "A" Burch has also been selected for an injection well to be used if sufficient volume of gas is available and if Unit Operator feels that inclusion of said well would be beneficial. Grayburg Oil Company of New Mexico #8 "A" Burch with a bottom hole pressure of 281 pounds is located in the low pressure area and among the older wells which have been more nearly depleted than those in other parts of the field, and has Zones 9 and 10 open. The low pressure area is that part of the field with a bottom hole pressure of 0 to 400 pounds, the intermediate pressure area is from 400 to 700 pounds and the high pressure area is that with a bottom hole pressure of 700 pounds or higher. It is felt that ~~inasmuch as~~ the three wells in the western part of the field in the intermediate pressure area will contribute toward the repressuring of the intermediate zone and will increase the formation pressure in this area, at the same time maintaining the pressure in the high pressure area of the central part of the field. The injection well on the eastern side of the field being Western Production Company #3 "C" Burch should serve to increase the pressure in that low pressure area. The inclusion of Grayburg Oil Company of New Mexico #8 "A" Burch in the north eastern part of the field, which is the low pressure area, will tend to either form a gas cap exerting a downward pressure and or will tend to repressure the low pressure area, either of which should have some beneficial effect on ultimate recovery.

In order to control the injection of gas into Zones 9 and 10, Unit Operator will install tubing and packers in each injection well in such a manner that gas will be confined to those



sones below the packer. Packer points will be as follows:  
Grayburg Oil Company of New Mexico #5 "B" Burch, 2675 feet,  
Grayburg Oil Company of New Mexico #5 "B" Keely, 2800 feet,  
Grayburg Oil Company of New Mexico #5 "A" Keely, 2845 feet,  
Western Production Company #3 "C" Burch, 2950 feet, Grayburg  
Oil Company of New Mexico #8 "A" Burch, 2925 feet. Upon  
installation of packer, annular space behind tubing will be  
filled with a gel-substance from the top of the packer back to  
within the casing shoe of the production string thus effectively  
sealing the formation above the packer, and annular space will  
then be loaded with oil on top of the gel and sufficient back  
pressure built up at surface with tubing head closed to assure  
an effective packer seal. Packer points have been selected so  
as to be in the hardest possible formation available between  
desired producing zones.

(2) Compressors and Gas Volume: Operator has installed  
3 compressors with total of 350 H.P. and capacity of 1,250,000  
cubic feet of gas operating under 20 pound intake pressure and  
800 pound discharge pressure.

During January 1944, on test, gas volume from the field  
averaged 1,354 MCF with an average production of 1,428 BOPD  
and an average gas-oil ratio of 947 CFG/1BO.

Operator proposes to inject gas into the various wells at  
a maximum pressure of 700 pounds which will be sufficient to  
cause a differential in all of the selected injection wells.  
Gas volume for the various wells will be allocated in accordance  
with their capacity and ability to take the gas and depending  
upon pressure build up and observed reservoir behavior. Unit  
Operator feels that due to intangible factors involved in regard  
to capacity of injection wells and related reservoir, volume  
should be regulated in this manner until some results are  
observed.

(3) Production: Unit Operator will produce the wells  
in such a manner as to efficiently and economically obtain the

the maximum recovery. Top allowable wells with a gas-oil ratio in excess of 2,500 and marginal wells with ratios in excess of 3,500 will be shut in, the oil production adjusted to reduce the ratio, or remedial work will be performed. It is intended that an average overall gas-oil ratio of not to exceed 2,000 will be maintained in the field so as to conserve gas and reservoir energy.

As long as present top allowable is 48 barrels per day, or more, Unit Operator will forfeit allowable normally allocated to the injection wells. However, if present top allowable of 48 barrels of oil per day is decreased to a lesser figure, this plan may be modified with the approval of the Oil and Gas Supervisor, so as to allow operator to reallocate to various other wells on the same basic lease, the production which would normally be allowed the various injection wells.

(4) Regulations: Drilling and producing operations hereunder shall be conducted in conformance with applicable Federal and State laws and regulations. The allocation of production normally allowed injection wells to other wells on the same basic lease, as provided in Section 3 hereof, shall be subject to the prior approval of the New Mexico Oil Conservation Commission.

(5) Engineering Data: Operator will take such tests as is necessary to determine at all times the condition of the reservoir pressure, gas-oil ratio, productivity and condition of producing wells, and to accomplish this, field wide gas-oil ratio and bottom hole pressure tests will be taken at intervals of at least every three months, with appropriate records of all such tests and information kept up to date at all times and available to the Oil and Gas Supervisor at any time. In event of excessive gas through-put at any time, individual gas-oil ratios will be taken immediately and corrective steps performed.

3. Modification of Plan: This plan may be modified from time to time by the Unit Operator with the approval of The Oil and Gas Supervisor to meet changed conditions or to take advantage of information obtained from drilling of any said wells which might make the location of any subsequent well to be drilled hereunder unreasonable and to meet changed conditions which may develop in the operation of the repressuring program. This plan of operation to remain in effect to December 31, 1944, prior to which date Unit Operator shall submit for the approval of the Oil and Gas Supervisor a new plan of operation or appropriate modification or amendment of this plan, for the calendar year of 1945.

Respectfully submitted,

GRAYBURG UNIT ASSOCIATION

By: *L. H. Madden*

APPROVED this the 16th day

of April, 1944

*L. G. Snow*

Oil and Gas Supervisor  
Roswell, New Mexico