~~~		UNIT AGREEMENT
7	BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION  FORD EXHIBIT NO.  ASE NO. 6625	PAWNEE DEEP UNIT AREA LEA COUNTY, NEW MEXICO
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UNIT AGREEMENT FOR THE DEVELOPMENT AND OPERATION OF THE PAWNEE DEEP UNIT AREA COUNTY OF LEA STATE OF NEW MEXICO NO. THIS AGREEMENT, entered into as of the lst day of October, 1979, by and between the parties subscribing, ratifying, or consenting hereto, and herein referred to as the "parties hereto," WITNESSETH: WHEREAS the parties hereto are the owners of working, royalty, or other oil and gas interests in the unit area subject to this agreement; and WHEREAS the Mineral Leasing Act of February 25, 1920, 41 Stat. 437, as amended, 30 U. S. C. Secs. 181 et seq., authorizes Federal lessees and their representatives to unite with each other, or jointly or separately with oth-ers, in collectively adopting and operating a cooperative or unit plan of development or operation of any oil or gas pool, field, or like area, or any part thereof for the purpose of more properly conserving the natural re-sources thereof whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest; and WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (Sec. 19-10-45, 46, 47 N.M. Statutes 1978 Annotated) to consent to or approve this agreement on behalf of the State of New Mexico, insofar as it covers and includes lands and mineral interests of the State of New Mexico; and WHEREAS, the Oil Conservation Division of the State of New Mexico Energy and Minerals Department is authorized by an Act of the Legislature (Chapters 70 and 71, New Mexico Statutes 1978 Annotated) to approve this agreement and the conservation provisions hereof; and

WHEREAS the parties hereto hold sufficient Interests in the Pawnee Deep

Unit Area covering the land hereinafter described to give reasonably effec-

tive control of operations therein; and

WHEREAS it is the purpose of the parties hereto to conserve natural resources, prevent waste, and secure other benefits obtainable through development and operation of the area subject to this agreement under the terms, conditions, and limitations herein set forth;

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NOW, THEREFORE, in consideration of the premises and the promises herein contained, the parties hereto commit to this agreement their respective
interests in the below-defined unit area, and agree severally among themselves as follows:

- 1. ENABLING ACT AND REGULATIONS. The Mineral Leasing Act of
  February 25, 1920, as amended, supra, and all valid pertinent regulations,
  including operating and unit plan regulations hereafter issued thereunder or
  valid, pertinent, and reasonable regulations hereafter issued thereunder are
  accepted and made a part of this agreement as to Federal lands, provided such
  regulations are not inconsistent with the terms of this agreement; and as to
  non-Federal lands, the oil and gas operating regulations in effect as of the
  effective date hereof governing drilling and producing operations, not inconsistent with the terms hereof or the laws of the State in which the nonFederal land is located, are hereby accepted and made a part of this agreement.
- 2. UNIT AREA. The area specified on the map attached hereto marked

  Exhibit A is hereby designated and recognized as constituting the unit area,

  containing 3,840 acres, more or less, below the stratigraphic equivalent

  of the base of the Yates Formation found at 3,967 feet in the Humble #1

  South Lea Deep Unit well in Section 17, T-26-S, R-36-E, Lea County, New Mexico.

Exhibit A shows, in addition to the boundary of the unit area, the boundaries and identity of tracts and leases in said area to the extent known to the Unit Operator. Exhibit B attached hereto is a schedule showing to the extent known to the Unit Operator the acreage, percentage, and kind of ownership of oil and gas interests in all land in the unit area. However, nothing herein or in said schedule or map shall be construed as a representation by any party hereto as to the ownership of any Interest other than such interest or interests as are shown in said map or schedule as owned by such party. Exhibits A and B shall be revised by the Unit Operator whenever changes in the unit area render such revision necessary, or when requested by the Oil and Gas Supervisor, hereinafter referred to as "Supervisor," or

when requested by the Commissioner of Public Lands of the State of New Mexico, hereinafter referred to as "Commissioner," and not less than five copies of the revised exhibits shall be filed with the Supervisor, and two copies thereof shall be filed with the Commissioner, and one copy with the New Mexico Oil Conservation Division, hereinafter referred to as "Division".

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The above-described unit area shall when practicable be expanded to include therein any additional lands or shall be contracted to exclude lands whenever such expansion or contraction is deemed to be necessary or advisable to conform with the purposes of this agreement. Such expansion or contraction shall be effected in the following manner:

- (a) Unit Operator, on its own motion or on demand of the Director of the Geological Survey, hereinafter referred to as "Director," or on demand of the Commissioner, after preliminary concurrence by the Director and the Commissioner, shall prepare a notice of proposed expansion or contraction describing the contemplated changes in the boundaries of the unit area, the reasons therefor, and the proposed effective date thereof, preferably the first day of a month subsequent to the date of notice.
- (b) Said notice shall be delivered to the Supervisor, the Commissioner and the Division and copies thereof mailed to the last known address of each working interest owner, lessee, and lessor whose interests are affected, advising that 30 days will be allowed for submission to the Unit Operator of any objections.
- (c) Upon expiration of the 30-day period provided in the preceding item (b) hereof, Unit Operator shall file with the Supervisor, the Commissioner and the Division evidence of mailing of the notice of expansion or contraction and a copy of any objections thereto which have been filed with the Unit Operator, together with an application in sufficient number, or approval of such expansion or contraction and with appropriate joinders.
- (d) After due consideration of all pertinent information, the expansion or contraction shall, upon approval by the Supervisor, the Commissioner and the Division, become effective as of the date prescribed in the notice thereof.
- (e) All legal subdivisions of lands (i.e., 40 acres by Government survey or its nearest lot or tract equivalent; in instances of irregular

surveys, unusually large lots or tracts shall be considered in multiples of 40 acres or the nearest aliquot equivalent thercof), no parts of which are entitled to be in a participating area on or before the fifth anniversary of the effective date of the first initial participating area established under this unit agreement, shall be eliminated automatically from this agreement. effective as of said fifth anniversary, and such lands shall no longer be a part of the unit area and shall no longer be subject to this agreement, unless diligent drilling operations are in progress on unitized lands not entitled to participation on said fifth anniversary, in which event all such lands shall remain subject hereto so long as such drilling operations are continued diligently, with not more than 90 days' time elapsing between the completion of one well and the commencement of the next well. All legal subdivisions of lands not entitled to be in a participating area within 10 years after the effective date of the first initial participating area approved under this agreement shall be automatically eliminated from this agreement as of said tenth anniversary. All lands proved productive by diligent drilling operations after the aforesaid 5-year period shall become participating in the same manner as during said 5-year period. However, when such diligent drilling operations cease, all monparticipating lands shall be automatically eliminated effective as of the 91st day thereafter. The Unit Operator shall, within 90 days after the effective date of any elimination hereunder, describe the area so eliminated to the satisfaction of the Supervisor and the Commissioner, and promptly notify all parties in interest.

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If conditions warrant extension of the 10-year period specified in this subsection 2(e), a single extension of not to exceed 2 years may be accomplished by consent of the owners of 90% of the working interests in the current nonparticipating unitized lands and the owners of 60% of the basic royalty interests (exclusive of the basic royalty interests of the United States) in nonparticipating unitized lands with approval of the Director and Commissioner, provided such extension application is submitted to the Director and Commissioner not later than 60 days prior to the expiration of said 10-year period.

Any expansion of the unit area pursuant to this section which em-

braces lands theretofore eliminated pursuant to this subsection 2(e) shall not be considered automatic commitment or recommitment of such lands.

3. UNITIZED LAND AND UNITIZED SUBSTANCES. All land below the stratigraphic equivalent of the base of the Yates Formation found at 3,967 feet in the Humble #1 South Lea Deep Unit well in Section 17, T-26-S, R-36-E, Lea County, New Mexico, is committed to this agreement and shall constitute land referred to herein as "unitized land" or "land subject to this agreement." All oil and gas in any and all formations of the unitized land are unitized under the terms of this agreement and herein are called "unitized substances."

- 4. UNIT OPERATOR. GIFFORD, MITCHELL & WISENBAKER is hereby designated as Unit Operator and by signature hereto as Unit Operator agrees and consents to accept the duties and obligations of Unit Operator for the discovery. development and production of unitized substances as herein provided. Whenever reference is made herein to the Unit Operator, such reference means the Unit Operator acting in that capacity and not as an owner of interest in unitized substances, and the term "working interest owner" when used herein shall include or refer to Unit Operator as the owner of a working interest when such an interest is owned by it.
- 5. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time prior to the establishment of a participating area or areas hereunder, but such resignation shall not become effective so as to release Unit Operator from the duties and obligations of Unit Operator and terminate Unit Operator's rights as such for a period of 6 months after notice of intention to resign has been served by Unit Operator on all working interest owners and the Supervisor, the Commissioner and the Division . and until all wells then drilled hereunder are placed in a satisfactory condition for suspension or abandonment, whichever is required by the Supervisor as to Federal lands and by the Division as to State and privately owned lands, unless a new Unit Operator shall have been selected and approved and shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

Unit Operator shall have the right to resign in like manner and subject to like limitations as above provided at any time a participating area established hereunder is in existence, but, in all instances of resignation or removal, until a successor Unit Operator is selected and approved as hereinafter provided, the working interest owners shall be jointly responsible 37 for performance of the duties of Unit Operator, and shall, not later than 30 days before such resignation or removal becomes effective, appoint a common agent to represent them in any action to be taken hereunder.

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The resignation of Unit Operator shall not release Unit Operator from any liability for any default by it hereunder occurring prior to the effective date of its resignation.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by the same percentage vote of the owners of working interests as herein provided for the selection of a new Unit Operator. Such removal shall be effective upon notice thereof to the Supervisor and the Commissioner.

The resignation or removal of Unit Operator under this agreement shall not terminate its right, title or interest as the owner of a working interest or other interest in unitized substances, but upon the resignation or removal of Unit Operator becoming effective, such Unit Operator shall deliver possession of all wells, equipment, materials and appurtenances used in conducting the unit operations to the new duly qualified successor Unit Operator or to the common agent, if no such new Unit Operator is elected, to be used for the purpose of conducting unit operations hereunder. Nothing herein shall be construed as authorizing removal of any material, equipment and appurtenances needed for the preservation of any wells.

6. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender his or its resignation of Unit Operator or shall be removed as hereinabove provided, or a change of Unit Operator is negotiated by working interest owners, the owners of the working interests in the participating area or areas according to their respective acreage interests in such participating area or areas, or, until a participating area shall have been established, the owners of the working interests according to their respective acreage interests in all unitized land, shall by majority vote select a successor Unit Operator: Provided; That, if a majority but less than 75 percent of the working interests qualified to vote are owned by one party to this agreement, a concurring vote of one or more additional working interest owners shall be required to select a new operator. Such selection shall not become effective until:

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 (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator, and

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(b) the selection shall have been approved by the Supervisor and Commissioner.

If no successor Unit Operator is selected and qualified as herein provided, the Director and Commissioner at their election may declare this unit agreement terminated.

7. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. If the Unit Operator is not the sole owner of working interest, costs and expenses incurred by Unit Operator in conducting unit operations hereunder shall be paid and apportioned among and borne by the owners of working interests, all in accordance with the agreement or agreements entered into by and between the Unit Operator and the owners of working interests, whether one or more, separately or collectively. Any agreement or agreements entered into between the working interest owners and the Unit Operator as provided in this section, whether one or more, are herein referred to as the "unit operating agreement." Such unit operating agreement shall also provide the manner in which the working interest owners shall be entitled to receive their respective proportionate and allocated share of the benefits accruing hereto in conformity with their underlying operating agreements, leases or other independent contracts, and such other rights and obligations as between Unit Operator and the working interest owners; however, no such unit operating agreement shall be deemed either to modify any of the terms and conditions of this unit agreement or to relieve the Unit Operator of any right or obligation established under this unit agreement, and in case of any inconsistency or conflict between this unit agreement and the unit operating agreement, this unit agreement shall govern. Three true copies of any unit operating agreement executed pursuant to this section should be filed with the Supervisor and two true copies with the Commissioner and one true copy with the Commission, prior to approval of this unit agreement.

8. RIGHTS AND OBLIGATIONS OF UNIT OPERATOR. Except as otherwise specifically provided herein, the exclusive right, privilege, and duty of exercising any and all rights of the parties hereto which are necessary or convenient for prospecting for, producing, storing, allocating, and distributing

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9. DRILLING TO DISCOVERY. Within 6 months after the effective date hereof, the Unit Operator shall begin to drill an adequate test well at a location approved by the Supervisor, if on Federal land, or by the Commissioner if on State land, or by the Division if on fee land, unless on such effective date a well is being drilled conformably with the terms hereof, and thereafter continue such drilling diligently until the Fusselman formation has been tested or until at a lesser depth unitized substances shall be discovered which can be produced in paying quantities (to-wit: quantities sufficient to repay the costs of drilling, completing, and producing operations, with a reasonable profit) or the Unit Operator shall at any time establish to the satisfaction of the Supervisor if located on Federal lands, or the Commissioner if located on State lands, or the Division if located on fee lands, that further drilling of said well would be unwarranted or impracticable, provided, however, that Unit Operator shall not in any event be required to drill said well to a depth in excess of 17,500 feet. Until the discovery of a deposit of unitized substances capable of being produced in paying quantities, the Unit Operator shall continue drilling one well at a time, allowing not more than 6 months between the completion of one well and the beginning of the next well, until a well capable of producing unitized substances in paying quantities is completed to the satisfaction of said Supervisor if on Federal land, or the Commissioner if on State land, or the Division fee land, or until it is reasonably proved that the unitized land is incapable of producing unitized substances in paying quantities in the formations drilled hereunder. Nothing in this section shall be deemed to limit the right of the Unit Operator to resign as provided in Section 5 hereof, or as

10. PLAN OF FURTHER DEVELOPMENT AND OPERATION. Within 6 months after completion of a well capable of producing unitized substances in paying quantities, the Unit Operator shall submit for the approval of the Supervisor and the Commissioner an acceptable plan of development and operation for the unitized land which, when approved by the Supervisor and the Commissioner, shall constitute the further drilling and operating obligations of the Unit Operator under this agreement for the period specified therein. Thereafter, from time to time before the expiration of any existing plan, the Unit Operator shall submit for the approval of the Supervisor and the Commissioner a plan for an additional specified period for the development and operation of the unitized land.

Any plan submitted pursuant to this section shall provide for the exploration of the unitized area and for the diligent drilling necessary for determination of the area or areas thereof capable of producing unitized substances in paying quantities in each and every productive formation and shall be as complete and adequate as the Supervisor, the Commissioner and Division may determine to be necessary for timely development and proper conservation of the oil and gas resources of the unitized area and shall:

- (a) specify the number and locations of any wells to be drilled and the proposed order and time for such drilling; and
- (b) to the extent practicable, specify the operating practices regarded as necessary and advisable for proper conservation of natural resources.

Plans shall be modified or supplemented when necessary to meet changed conditions or to protect the interests of all parties to this agreement. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of development. The Supervisor and Commissioner are authorized to grant a reasonable extension of the 6-month period herein prescribed for submission of an initial plan of development where such action is justified because of unusual conditions or circumstances. After completion hereunder of a well capable of producing any unitized substances in paying quantities, no further wells, except such as may be necessary to afford protection against operations not under this agreement and such as may be specifically approved by the Supervisor and the Commissioner, shall be drilled except in accordance with a plan of development approved as herein provided.

11. PARTICIPATION AFTER DISCOVERY. Upon completion of a well capable of producing initized substances in paying quantities or as soon thereafter as required by the Supervisor and Commissioner, the Unit Operator shall submit for approval by the Supervisor and Commissioner a schedule, based on subdivisions of the public land survey or aliquot parts thereof, of all land then regarded as reasonably proved to be productive in paying quantities; all lands in said schedule on approval of the Supervisor and Commissioner to constitute a participating area, effective as of the date of completion of such well or the effective date of this unit agreement, whichever is later. The acreages of both Federal and non-Federal lands shall be based upon appropriate computations from the courses and distances shown on the last approved public land survey as of the effective date of each initial participating area. Said schedule shall also set forth the percentage of unitized substances to be allocated as herein provided to each tract in the participating area so established, and shall govern the allocation of production commencing with the effective date of the participating area. A separate participating area shall be established for each separate pool or deposit of unitized substances or for any group thereof which is produced as a single pool or zone, and any two or more participating areas so established may be combined into one, on approval of the Supervisor and Commissioner. When production from two or more participating areas, so established, is subsequently found to be from a common pool or deposit, said participating areas shall be combined into one effective as of such appropriate date as may be approved or prescribed by the Supervisor and Commissioner. The participating area or areas so established shall be revised from time to time, subject to like approval, to include additional land then regarded as reasonably proved to be productive in paying quantities or necessary for unit operations, or to exclude land then regarded as reasonably proved not to be productive in paying quantities and the schedule of allocation percentages shall be revised accordingly. The effective date of any revision shall be the first day of the month in which is obtained the knowledge or information on which such revision is predicated, provided, however, that a more appropriate effective date may be used if justified by the Unit Operator and approved by the Supervisor and Commissioner. No land shall be excluded from a participating area on account of depletion of the unitized substances, except that any participating area established under the provisions of this unit agreement shall terminate automatically whenever all completions in the formation on which the participating area is based are abandoned.

It is the intent of this section that a participating area shall represent the area known or reasonably estimated to be productive in paying quantities, but, regardless of any revision of the participating area, nothing herein contained shall be construed as requiring any retroactive adjustment for production obtained prior to the effective date of the revision of the participating area.

In the absence of agreement at any time between the Unit Operator and the Supervisor and Commissioner as to the proper definition or redefinition of a participating area, or until a participating area has, or areas have, been established as provided herein, the portion of all payments affected thereby shall be impounded in a manner mutually acceptable to the owners of working interests and the Supervisor and Commissioner. Royalties due the United States and the State of New Mexico, which shall be determined by the Supervisor for Federal land and the Commissioner for State land and the amount thereof shall be deposited, as directed by the Supervisor and Commissioner respectively, to be held as unearned money until a participating area

is finally approved and then applied as earned or returned in accordance with a determination of the sum due as Federal and State royalty on the basis of such approved participating area.

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Whenever it is determined, subject to the approval of the Supervisor as to wells drilled on Federal land and of the Commissioner as to wells drilled on State land, that a well drilled under this agreement is not capable of production in paying quantities and inclusion of the land on which it is situated in a participating area is unwarranted, production from such well shall, for the purposes of settlement of all parties other than working interest owners, be allocated to the land on which the well is located unless such land is already within the participating area established for the pool or deposit from which such production is obtained. Settlement for working interest benefits from such a well shall be made as provided in the unit operating agreement.

12. ALLOCATION OF PRODUCTION. All unitized substances produced from each participating area established under this agreement, except any part thereof used in conformity with good operating practices within the unitized area for drilling, operating, camp and other production or development purposes, for repressuring or recycling in accordance with a plan of development approved by the Supervisor and Commissioner, or unavoidably lost, shall be deemed to be produced equally on an acreage basis from the several tracts of unitized land of the participating area established for such production and, for the purpose of determining any benefits accruing under this agreement, each such tract of unitized land shall have allocated to it such percentage of said production as the number of acres of such tract included in said participating area bears to the total acres of unitized land in said participating area, except that allocation of production hereunder for purposes other than for settlement of the royalty, overriding royalty, or payment out of production obligations of the respective working interest owners, shall be on the basis prescribed in the unit operating agreement whether in conformity with the basis of allocation herein set forth or otherwise. It is hereby agreed that production of unitized substances from a participating area shall be allocated as provided herein regardless of whether any wells are drilled on any particular part or tract of said participating area. If any

gas produced from one participating area is used for repressuring or recycling purposes in another participating area, the first gas withdrawn from such last mentioned participating area for sale during the life of this agreement shall be considered to be the gas so transferred until an amount equal to that transferred shall be so produced for sale and such gas shall be allocated to the participating area from which initially produced as such area was last defined at the time of such final production.

13. DEVELOPMENT OR OPERATION OF NON-PARTICIPATING LAND OR FORMATIONS.

Any party hereto owning or controlling the working interest in any unitized land having thereon a regular well location may with the approval of the Supervisor as to Federal land, the Commissioner as to State land and the Division—as to privately owned land, at such party's sole risk, cost and expense, drill a well to test any formation for which a participating area has not been established or to test any formation for which a participating area has been established if such location is not within said participating area, unless within 90 days of receipt of notice from said party of his intention to drill the well the Unit Operator elects and commences to drill such a well in like manner as other wells are drilled by the Unit Operator under this agreement.

If any well drilled as aforesaid by a working interest owner results in production such that the land upon which it is situated may properly be included in a participating area, such participating area shall be established or enlarged as provided in this agreement and the well shall thereafter be operated by the Unit Operator in accordance with the terms of this agreement and the unit operating agreement.

If any well drilled as aforesaid by a working interest owner obtains production in quantities insufficient to justify the inclusion of the land upon which such well is situated in a participating area, such well may be operated and produced by the party drilling the same subject to the conservation requirements of this agreement. The royalties in amount or value of production from any such well shall be paid as specified in the underlying lease and agreements affected.

14. ROYALTY SETTLEMENT. The United States and any State and any royalty owner who is entitled to take in kind a share of the substances now unitized

hereunder shall hereafter be entitled to the right to take in kind its share of the unitized substances, and the Unit Operator, or the working interest owner in case of the operation of a well by a working interest owner as herein provided for in special cases, shall make deliveries of such royalty share taken in kind in conformity with the applicable contracts, laws and regulations. Settlement for royalty interest not taken in kind shall be made by working interest owners responsible therefor under existing contracts, laws and regulations, or by the Unit Operator, on or before the last day of each month for unitized substances produced during the preceding calendar month; provided, however, that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any royalties due under their leases.

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If gas obtained from lands not subject to this agreement is introduced into any participating area hereunder, for use in repressuring, stimulation of production, or increasing ultimate recovery, in conformity with a
plan of operations approved by the Supervisor, the Commissioner, and Division, a like amount of gas, after settlement as herein provided for any gas
transferred from any other participating area and with appropriate deduction
for loss from any cause, may be withdrawn from the formation in which the
gas is introduced, royalty free as to dry gas, but not as to any products
which may be extracted therefrom; provided that such withdrawal shall be at
such time as may be provided in the approved plan of operations or as may
otherwise be consented to by the Supervisor, the Commissioner and Division
as conforming to good petroleum engineering practice; and provided further,
that such right of withdrawal shall terminate on the termination of this unit
agreement.

Royalty due the United States shall be computed as provided in the operating regulations and paid in value or delivered in kind as to all unitized substances on the basis of the amounts thereof allocated to unitized Federal land as provided herein at the rate specified in the respective-Federal leases, or at such lower rate or rates as may be authorized by law or regulation; provided, that for leases on which the royalty rate depends on the average production per well, said average production shall be determined in accordance with the operating regulations as though each participating

area were a single consolidated lease.

Royalty due on account of State lands shall be computed and paid on the basis of all unitized substances allocated to such lands.

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mitted hereto shall be paid by working interest owners responsible therefor under existing contracts, laws and regulations, provided that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any rental or minimum royalty due under their leases. Rental or minimum royalty for lands of the United States subject to this agreement shall be paid at the rate specified in the respective leases from the United States unless such rental or minimum royalty is waived, suspended or reduced by law or by approval of the Secretary or his duly authorized representative.

Rentals on State of New Mexico lands subject to this agreement shall be paid at the rates specified in the respective leases.

With respect to any lease on non-Federal land containing provisions which would terminate such lease unless drilling operations are commenced upon the land covered thereby within the time therein specified or rentals are paid for the privilege of deferring such drilling operations, the rentals required thereby shall, notwithstanding any other provisions of this agreement, be deemed to accrue and become payable during the term thereof as extended by this agreement and until the required drilling operations are commenced upon the land covered thereby or until some portion of such land is included within a participating area.

- 16. CONSERVATION. Operations hereunder and production of unitized substances shall be conducted to provide for the most economical and efficient recovery of said substances without waste, as defined by or pursuant to State or Federal laws or regulations.
- 17. DRAINAGE. The Unit Operator shall take such measures as the Super-visor and Commissioner deem appropriate and adequate to prevent drainage of unitized substances from unitized land by wells on land not subject to this agreement.
- 18. LEASES AND CONTRACTS CONFORMED AND EXTENDED. The terms, conditions, and provisions of all leases, subleases and other contracts relating to ex-

ploration, drilling, development or operations for oil or gas on lands committed to this agreement are hereby expressly modified and amended to the extent necessary to make the same conform to the provisions hereof, but otherwise to remain in full force and effect; and the parties hereto hereby consent that the Secretary as to Federal leases and the Commissioner as to State leases shall and each by his approval hereof, or by the approval hereof by their duly authorized representatives, do hereby establish, alter, change or revoke the drilling, producing, rental, minimum royalty and royalty requirements of Federal and State leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this agreement, and, without limiting the generality of the foregoing, all leases, subleases, and contracts are particularly modified in accordance with the following:

- (a) The development and operation of lands subject to this agreement under the terms hereof shall be deemed full performance of all
  obligations for development and operation with respect to each and
  every separately owned tract subject to this agreement, regardless
  of whether there is any development of any particular tract of the
  unit area.
- (b) Drilling and producing operations performed hereunder upon any tract of unitized land will be accepted and deemed to be performed upon and for the benefit of each and every tract of unitized land, and no lease shall be deemed to expire by reason of failure to drill or produce wells situated on the land therein embraced.
- (c) Suspension of drilling or producing operations on all unitized lands pursuant to direction or consent of the Secretary and Commissioner or their duly authorized representatives shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every tract of unitized land. A suspension of drilling or producing operations limited to specified lands shall be applicable only to such lands.
- (d) Each lease, sublease or contract relating to the exploration, drilling, development or operation for oil or gas of lands other than those of the United States or State of New Mexico committed

to this agreement, which, by its terms might expire prior to the termination of this agreement, is hereby extended beyond any such term so provided therein so that it shall be continued in full, force and effect for and during the term of this agreement.

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- (e) Any Federal lease for a fixed term of twenty (20) years or any renewal thereof or any part of such lease which is made subject to this agreement shall continue in force beyond the term provided therein until the termination hereof. Any other Federal lease committed hereto shall continue in force beyond the term so provided therein or by law as to the land committed so long as such lease remains subject hereto, provided that production is had in paying quantities under this unit agreement prior to the expiration date of the term of such lease, or in the event actual drilling operations are commenced on unitized lands, in accordance with the provisions of this agreement, prior to the end of the primary term of such lease and are being diligently prosecuted at that time, such lease shall be extended for two years and so long thereafter as oil or gas is produced in paying quantities in accordance with the provisions of the Mineral Leasing Act Revision of 1960.
- (f) Each sublease or contract relating to the operation and development of unitized substances from lands off the United States committed to this agreement, which by its terms would expire prior to the time at which the underlying lease, as extended by the immediately preceding paragraph, will expire, is hereby extended beyond any such term so provided therein so that it shall be continued in full force and effect for and during the term of the underlying lease as such term is herein extended.
- (g) Any lease embracing lands of the State of New Mexico which is made subject to this agreement, shall continue in force beyond the term provided therein as to the lands committed hereto until the termination hereof, subject to the provisions of subsection (e) of Section 2 and subsection (i) of this Section 18.
- (h) The segregation of any Federal lease committed to this agreement is governed by the following provisons in the fourth paragraph

of Sec. 17(j) of the Mineral Leasing Act, as amended by the Act of September 2, 1960 (74 Stat. 781-784): "Any (Federal) lease heretofore or hereafter committed to any such (unit) plan embracing lands that are in part within and in part outside of the area covered by any such plan shall be segregated into separate leases as to the lands committed and the lands not committed as of the effective date of unitization: Provided, however, That any such lease as to the nonunitized portion shall continue in force and effect for the term thereof but for not less than two years from the date of such segregation and so long thereafter as oil or gas is produced in paying quantities."

(i) Any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto, shall be segregated as to the portion committed and the portion not committed, and the provisions of such lease shall apply separately to such segregated portions commencing as of the effective date hereof; provided, however, notwithstanding any of the provisions of this agreement to the contrary, any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto shall continue in full force and effect beyond the term provided therein as to all lands embraced in such lease, if oil or gas is discovered and is capable of being produced in paying quantities from some part of the lands embraced in such lease at the expiration of the secondary term of such lease; or if, at the expiration of the secondary term. the lessee or Unit Operator is then engaged in bona fide drilling or reworking operations on some part of the lands embraced in such lease, the same, as to all lands embraced therein, shall remain in full force and effect so long as such operations are being diligently prosecuted, and if they result in the production of oil or gas, said lease shall continue in full force and effect as to all of the lands embraced therein, so long thereafter as oil or gas in paying quantities is being produced from any portion of said lands.

(j) Any lease, other than a Federal lease, having only a portion of its lands committed hereto shall be segregated as to the portion

committed and the portion not committed, and the provisions of such lease shall apply separately to such segregated portions commencing as of the effective date hereof. In the event any such lease provides for a lump sum rental payment, such payment shall be prorated between the portions so segregated in proportion to the acreage of the respective tracts.

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- COVENANTS RUN WITH LAND. The covenants herein shall be construed 19. to be covenants running with the land with respect to the interest of the parties hereto and their successors in interest until this agreement terminates, and any grant, transfer, or conveyance of interest in land or leases subject hereto shall be and hereby is conditioned upon the assumption of all privileges and obligations hereunder by the grantee, transferee or other successor in interest. No assignment or transfer of any working interest, royalty, or other interest subject hereto shall be binding upon Unit Operator until the first day of the calendar month after Unit Operator is furnished with the original, photostatic, or certified copy of the instrument of transfer.
  - 20. EFFECTIVE DATE AND TERM. This agreement shall become effective upon approval by the Secretary and Commissioner, or their duly authorized representatives and shall terminate five (5) years from said effective date unless:
    - (a) such date of expiration is extended by the Director and Commissioner, or
    - (b) it is reasonably determined prior to the expiration of the fixed term or any extension thereof that the unitized land is incapable of production of unitized substances in paying quantities in the formations tested hereunder and after notice of intention to terminate the agreement on such ground is given by the Unit Operator to all parties in interest at their last known addresses, the agreement is terminated with the approval of the Supervisor and the Commissioner, or
    - (c) a valuable discovery of unitized substances has been made or accepted on unitized land during sald initial term or any extension thereof, in which event the agreement shall remain in effect for such 33 term and so long as unitized substances can be produced in quantities

sufficient to pay for the cost of producing same from wells on unitized land within any participating area established hereunder and should production cease, so long thereafter as diligent operations are in progress for the restoration of production or discovery of new production and so long thereafter as unitized substances so discovered can be produced as aforesaid, or

- (d) it is terminated as heretofore provided in this agreement. This agreement may be terminated at any time by not less than 75 per centum, on an acreage basis, of the working interest owners signatory hereto, with the approval of the Supervisor and Commissioner; notice of any such approval to be given by the Unit Operator to all parties hereto.
- 21. RATE OF PROSPECTING, DEVELOPMENT AND PRODUCTION. The Director is hereby vested with authority to alter or modify from time to time in his discretion the quantity and rate of production under this agreement when such quantity and rate is not fixed pursuant to Federal or State law or does not conform to any statewide voluntary conservation or allocation program, which is established, recognized and generally adhered to by the majority of operators in such State, such authority being hereby limited to alteration or modi- 18 fication in the public interest, thee purpose thereof and the public interest to be served thereby to be stated in the order of alteration or modification. Without regard to the foregoing, the Director is also hereby vested with authority 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 when such alteration or modification is in the interest of attaining the conservation objectives stated in this agreement and is not in violation of any applicable Federal or State law; provided, further, that no such alteration or modification shall be effective as to any land of the State of New Mexico, as to the rate of prospecting and developing in the absence of the specific written approval thereof by the Commissioner and as to any lands of the State of New Mexico or privately owned lands subject to this agreement as to the quantity and rate of production in the absence of specific written approval thereof by the Division.

Powers in this section vested in the Director shall only be exercised after notice to Unit Operator and opportunity for hearing to be held not less than 15 days from notice.

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22. CONFLICT OF SUPERVISION. Neither the Unit Operator nor the working interest owners nor any of them shall be subject to any forfeiture, termination or expiration of any rights hereunder or under any leases or contracts subject hereto, or to any penalty or liability on account of delay or failure in whole or in part to comply with any applicable provision thereof to the extent that the Unit Operator, working interest owners or any of them are hindered, delayed or prevented from complying therewith by reason of failure of the Unit Operator to obtain in the exercise of due diligence, the concurrence of proper representatives of the United States and proper representatives of the State of New Mexico in and about any matters or things concerning which it is required herein that such concurrence be obtained. The parties hereto, including the Division , agree that all powers and authority vested in the Division in and by any provisions of this agreement are vested in the Division and shall be exercised by it pursuant to the provisions of the laws of the State of New Mexico and subject in any case to appeal or judicial review as may now or hereafter be provided by the laws of the State of New Mexico.

23. APPEARANCES. Unit Operator shall, after notice to other parties affected, have the right to appear for and on behalf of any and all interests affected hereby before the Department of the Interior, the Commissioner of Public Lands of the State of New Mexico and the New Mexico Oil Conservation Division and to appeal from orders issued under the regulations of said Department, the Division or Commissioner or to apply for relief from any of said regulations or in any proceedings relative to operations before the Department of the Interior, the Commissioner, or Division, or any other legally constituted authority; provided, however, that any other interested party shall also have the right at his own expense to be heard in any such proceeding.

24. NOTICES. All notices, demands or statements required hereunder to the given or rendered to the parties hereto shall be deemed fully given If given in writing and personally delivered to the party or sent by postpaid registered or certified mail, addressed to such party or parties at their respective addresses set forth in connection with the signatures hereto or to the ratification or consent hereof or to such other address as any such

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25. NO WAIVER OF CERTAIN RICHTS. Nothing in this agreement contained shall be construed as a waiver by any party hereto of the right to assert any legal or constitutional right or defense as to the validity or invalidity of any law of the State wherein said unitized lands are located, or of the United States, or regulations issued thereunder in any way affecting such party, or as a waiver by any such party of any right beyond his or its authority to waive.

26. UNAVOIDABLE DELAY. All obligations under this agreement requiring the Unit Operator to commence or continue drilling or to operate on or produce unitized substances from any of the lands covered by this agreement shall be suspended while the Unit Operator, despite the exercise of due care and diligence, is prevented from complying with such obligations, in whole or in part, by strikes, acts of God, Federal, State or municipal law or agencies, unavoidable accidents, uncontrollable delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not. No unit obligation which is suspended under this section shall become due less than thirty (30) days after it has been determined that the suspension is no longer applicable. Determination of creditable "Unavoidable Delay" time shall be made by the Unit Operator subject to approval of the Supervisor and Commissioner.

27. NONDISCRIMINATION. In connection with the performance of work under this agreement, the Unit Operator agrees to comply with all of the provisions of section 202 (1) to (7) inclusive of Executive Order 11246 (30 F.R. 12319), which are hereby incorporated by reference in this agreement.

28. LOSS OF TITLE. In the event title to any tract of unitized land shall fail and the true owner cannot be induced to join in this unit agreement, such tract shall be automatically regarded as not committed hereto and there shall be such readjustment of future costs and benefits as may be required on account of the loss of such title. In the event of a dispute as to title to any royalty, working interest or other interests subject thereto, payment or delivery on account thereof may be withheld without liability for

and State land or leases, no payments of funds due the United States or State of New Mexico should be withheld, but such funds of the United States shall be deposited as directed by the Supervisor and such funds of the State of New Mexico shall be deposited as directed by the Commissioner to be held as unearned money pending final settlement of the title dispute, and then applied as earned or returned in accordance with such final settlement.

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Unit Operator as such is relieved from any responsibility for any defect or failure of any title hereunder.

29. NON-JOINDER AND SUBSEQUENT JOINDER. If the owner of any substantial interest in a tract within the unit area fails or refuses to subscribe or consent to this agreement, the owner of the working interest in that tract may withdraw said tract from this agreement by written notice delivered to the Supervisor and the Commissioner and the Unit Operator prior to the approval of this agreement by the Supervisor and Commissioner. Any oil or gas interests in lands within the unit area not committed hereto prior to submission of this agreement for final approval may thereafter be committed hereto by the owner or owners thereof subscribing or consenting to this agreement, and, if the interest is a working interest, by the owner of such interest also subscribing to the unit operating agreement. After operations are commenced hereunder, the right of subsequent joinder, as provided in this section, by a working interest owner is subject to such requirements or approvals, if any, pertaining to such joinder, as may be provided for in the unit operating agreement. After final approval hereof, joinder by a non-working interest owner must be consented to in writing by the working interest owner committed hereto and responsible for the payment of any benefits that may accrue hereunder in behalf of such non-working interest. A non-working interest may not be committed to this unit agreement unless the corresponding working interest is committed hereto. Joinder to the unit agreement by a working interest owner, at any time, must be accompanied by appropriate joinder to the unit operating agreement, if more than one committed working interest owner is involved, in order for the interest to be regarded as committed to this unit agreement. Except as may otherwise herein be provided, subsequent joinders to this agreement shall be effective as of the first day of the month follow-

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ing the filing with the Supervisor and the Commissioner of duly executed counterparts of all or any papers necessary to establish effective commitment of any tract to this agreement unless objection to such joinder is duly made within 60 days by the Supervisor, provided, however, that as to State lands all subsequent joinders must be approved by the Commissioner.

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- 30. SURFACE AND ENVIRONMENTAL PROTECTION STIPULATIONS. Nothing in this agreement shall modify any special Federal-lease stipulations relating to surface and environmental protection, attached to and made a part of Oil and Gas Leases covering lands within the Unit Area.
- 31. SURFACE MANAGEMENT STIPULATION. Nothing in this agreement shall modify any special Federal-lease stipulations relating to surface management, attached to and made a part of Oil and Gas Leases covering lands within the Unit Area.
- 32. COUNTERPARTS. This agreement may be executed in any number of counterparts no one of which needs to be executed by all parties or may be ratified or consented to by separate instrument in writing specifically referring hereto and shall be binding upon all those parties who have executed such a counterpart, ratification, or consent hereto with the same force and effect as if all such parties had signed the same document and regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands within the above described unit area.
- 33. SURRENDER. Nothing in this agreement shall prohibit the exercise by any working interest owner of the right to surrender vested in such party by any lease, sublease, or operating agreement as to all or any part of the lands covered thereby, provided that each party who will or might acquire such working interest by such surrender or by forfeiture as hereafter set forth, is bound by the terms of this agreement.

If as a result of any such surrender the working interest rights as to such lands become vested in any party other than the fee owner of the unitized substances, said party may forfeit such rights and further benefits from operation hereunder as to said land to the party next in the chain of title who shall be and become the owner of such working interest.

If as the result of any such surrender or forfeiture working interest rights become vested in the fee owner of the unitized substances, such owner

may:

(1) Accept those working interest rights subject to this agreement and the unit operating agreement; or

- (2) Lease the portion of such land as is included in a participating area established hereunder subject to this agreement and the unit operating agreement; or
- (3) Provide for the independent operation of any part of such land that are not then included within a participating area established hereunder.

If the fee owner of the unitized substances does not accept the working interest rights subject to this agreement and the unit operating agreement or lease such lands as above provided within six (6) months after the surrendered or forfeited working interest rights become vested in the fee owner, the benefits and obligations of operations accruing to such lands under this agreement and the unit operating agreement shall be shared by the remaining owners of unitized working interests in accordance with their respective working interest ownerships, and such owners of working interests shall compensate the fee owner of unitized substances in such lands by paying sums equal to the rentals, minimum royalties, and royalties applicable to such lands under the lease in effect when the lands were unitized.

An appropriate accounting and settlement shall be made for all benefits accruing to or payments and expenditures made or incurred on behalf of such surrendered or forfeited working interest subsequent to the date of surrender or forfeiture, and payment of any moneys found to be owing by such an accounting shall be made as between the parties within thirty (30) days. In the event no unit operating agreement is in existence and a mutually acceptable agreement between the proper parties thereto cannot be consummated, the Supervisor may prescribe such reasonable and equitable agreement as he deems warranted under the circumstances.

The exercise of any right vested in a working interest owner to reassign such working interest to the party from whom obtained shall be subject to the same conditions as set forth in this section in regard to the exercise of a right to surrender.

34. TAXES. The working interest owners shall render and pay for their

account and the account of the royalty owners all valid taxes on or measured 1 by the unitized substances in and under or that may be produced, gathered 2 and sold from the land subject to this contract after the effective date of 3 this agreement, or upon the proceeds or net proceeds derived therefrom. The working interest owners on each tract shall and may charge the proper pro-5 5 portion of said taxes to the royalty owners having interests in said tract. 6 and may currently retain and deduct sufficient of the unitized substances or 7 derivative products, or net proceeds thereof from the allocated share of each 8 royalty owner to secure reimbursement for the taxes so paid. No such taxes 9 9 shall be charged to the United States or the State of New Mexico or to any 10 10 lessor who has a contract with his lessee which requires the lessee to pay 11 11 12 12 such taxes. 35. NO PARTNERSHIP. It is expressly agreed that the relation of the 13 13 parties hereto is that of independent contractors and nothing in this agree-14 14 ment contained, expressed or implied, nor any operations conducted hereunder, 15 15 shall create or be deemed to have created a partnership or association be-16 16 tween the parties hereto or any of them. 17 17 IN WITNESS WHEREOF, the parties hereto have caused this agreement 18 18 to be executed and have set opposite their respective names the date of exe-19 19 20 20 cution.

UNIT OPERATOR

GIFFORD, MITCHELL & WISENBAKER A Proprietorship

Joe N. Gifford

Bascom L. Mitchell

Michael B. Wisenbaker

Address: 1280 Midland National Bank Tower Midland, TX 79701

## NON-OPERATORS

Gulf Oil Corporation P. O. Box 1150 Midland, TX 79702

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Atlantic Richfield Company P. O. Box 1610 Midland, TX 79702

(Date)

HNG Oil Company P. O. Box 2267 Midland, TX 79702

W. F. Roden P. O. Box 2267 Midland, TX 79702 M. Ralph Lowe
4600 Post Oak Place, Suite 307
Houston, TX 77027

Erma Lowe 4600 Post Oak Place, Suite 307 Houston, TX 77027 Maralo, Inc. 4600 Post Oak Place, Suite 307 Houston, TX 77027

BTA Oil Producers 104 South Pecos Midland, TX 79701

STATE	OF	TEXAS	χ
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COUNTY	OI	MIDL	AND (

BEFORE ME, the undersigned, a Notary Public in and for said County and State on this day personally appeared Joe N. Gifford, Bascom L. Mitchell and Michael B. Wisenbaker, known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND A	<del>-</del>	this the	<del></del>	_day of	
My Commission Expires:	Notary Texas	Public in	and for	Midland	County,
	Lenas				

EXHIBIT "B"
PAWNEE DEEP UNIT
T-26-S, R-36-E
LEA COUNTY, NEW MEXICO

		Lease Serial No.	٠.	[					
act Description	Number of Acres	State Lse. No. & Expiration Date	Basic Royalty Owner and	alty and %	Lessee of Record	Hnt.	Overriding Royalty Owner	lty and %	Working Inter
•	300	13430	TICE.	7 7 8	12.5% RWA Oil Producers	100*	M. J. Harvev. Jr.	5.00000%	5.00000% BTA Oil Producers
Sec. 21: E/2	() ()	4/1/81		1		j 6			
2 T-26-S, R-36-E	320	NM-23199	USA	12.5%	HNG Oil Company	100%	V. J. Wilson	1.00000%	HNG Oil Company
		7/1/83					Exxon Corporation	.50000%	W. F. Roden
		HBP					R. Gene Brasel	.50000%	
							H. L. Brown, Jr.	.66113%	
							Robert Mosbacher	1.21875%	
							Gary B. Laughlin	.27881%	

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T-26-S, R-36-E Sec. 23; All	T-26-S, R-36-E Sec. 16: S/2	T-26-S, R-36-E Sec. 16; N/2	T-26-S, T-36-E Secs. 14 & 15: All	T-26-S, R-36-E Sec. 21: E/2 T-26-S, R-36-E Sec. 21: W/2	Description of Land
640	320	320	1280	320 320	Number of Acres
L-6809-2 12/1/81	L-6731-2 11/1/81	L-6453-2 8/1/81	B-228-1 2/28/33 HBP	NM-13430 4/1/81 NM-23199 7/1/83 HBP	State Ise. No. & Expiration Date
State of New Mexico	State of New Mexico	State of New Mexico	State of New Mexico	USA	& Basic Royalty Owner and
12,5%	12.5%	12,5%	12.5%	12 2 .5 * *	yalty and %
Maralo, Inc.	Maralo, Inc.	Maralo, Inc.	Gulf Oil Corporation	HNG Oil Company	Lessee of Record
100%	100%	100%	100%	100%	Int.
None	None	None	None	W. J. Harvey, Jr.  V. J. Wilson Exxon Corporation R. Gene Brasel H. L. Brown, Jr. Robert Mosbacher Gary B. Laughlin Marmar Oil Co. Marilyn Jean Van Petten, Indiv. & Ancillary Extrx. of Estate of Edward Em Van Petten, Dec'd John E. Hansen Virginia R. Hansen Wesley Chalfant Diane K. Rush	Overriding Royalty Owner
0	! O	101	0	5.00000% 1.00000% .50000% .50000% .66113% 1.21875% .27881% .27881% .06259% .08333% .08333% .16667%	lty and %
M, Ralph Lowe Maralo, Inc. Erma Lowe	M. Ralph Lowe Maralo, Inc. Erma Lowe	M. Ralph Lowe Maralo, Inc. Erma Lowe	Gulf Oil Corp.	BTA Oil Producers HNG Oil Company W. F. Roden	Working Interest
25 % 25 %	50% 25% 25%	25 25 25 8	100%	18.1.2 100%	est and

# EXHIBIT "B" PAWNEE DEEP UNIT T-26-S, R-36-E LEA COUNTY, NEW MEXICO

•	Lease
:	Seri
•	al No
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ω	7	Pract No.
T-26-S, R-36-E Sec. 22: SE/4	T-26-S, R-36-E Sec. 22: N/2 & SW/4	Description of Land
160	480	Number of Acres
LG-6731 (LG-6731-1) 7/1/89	LG-3340 1/1/86	Lease Serial No. or New Mexico State Lse. No. & Expiration Date
State of New Mexico	State of New Mexico	Basic Royalty Owner and
12.5%	12.5%	yalty and %
Gifford, Mitchell & Wisenbaker	Atlantic Richfield Co.	Lessee of Record
100%	100%	Int.
None	None	Overriding Royalty Owner
-0-	-0-	yalty and %
Gifford, Mitchell & Wisenbaker l	Atlantic Richfield Co.	Working Interest
100	100	and

TOTAL FEDERAL LANDS
TOTAL STATE OF NEW
MEXICO LANDS
TOTAL UNIT AREA

3200 3840

(83.33333%) (100.00000%)

640

( 16.66667%)

# EXHIBIT "A"

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Maralo, Inc.  1-6453-2  4  Maralo, Inc.  16  Maralo, Inc.  1-6731-2	Gulf Oil Corp.  B-228-1  15 (3)  14
HNG OII Co. BTA OII Prod. NM 23199 NM 13430	ARCO Maralo, Inc. LG-3340 L-6809-2  Gifford, Mitchell B Wisenbaker LG-6731  8

Twp.26S-Rng.36E

# Lea County, New Mexico

Federal Land 640 Acres 16.66667%
State of New Mexico Land 3200 Acres 83.33333%
Total 3840 Acres 100.00000%

Unit Outline

# GIFFORD, MITCHELL & WISENBAKER

SUITE 1280, MIDLAND NATIONAL BANK TOWER MIDLAND, TEXAS 79701

JOE N. GIFFORD
BASCOM L. MITCHELL
MICHAEL B. WISENBAKER

September 20, 1979

915-682-6282

Regional Oil & Gas Supervisor United States Geological Survey 505 Marguette NW Albuquerque, N.M. 87125

RE: Geologic Reports: Proposed Pawnee Unit, Sections 14, 15, 16, 21, 22, 23, T26S, R36E, Lea County, New Mexico

BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION
CASE NO. 6675
Submitted by

### Gentlemen:

The proposed Pawnee Unit is situated on a structural anamoly that has been defined by geophysics. It is located within the boundaries of a porous Devonian and Fusselman bank or reef trend which is developed along the hingeline of the old Tabosa Basin.

The structure as interpreted from seismic records is contoured on top of the Mississippian limestone, and has been used to construct Devonian and Fusselman porosity structure maps. The feature is steeper and slightly tilted to the southwest, and it is anticipated that it will increase in sharpness, but decrease in areal extent with depth.

The Devonian and Fusselman banks have been partially dolomitzed and are productive in several fields along their respective trends. In the immediate area they are productive in the Crosby fields in T25S - R37E from a proous dolomite finger of the bank (Cross Section B-B') in the Devonian and from a thicker portion of the Fusselman bank. The fusselman is productive in the Cheyenne Field (Fusselman Map) from porous dolomite fingers (Cross Section A-A') that extend out from the main bank over a structural feature. The Devonian porosity is not developed in this field. There are also gas shows from the Devonian and Fusselman in the HNG #1 Dogie Draw in Section 8, T26S - R36E, and the Humble #1 South Lea Deep Unit in Section 17, T26S -R36E, both in Lea County, New Mexico. The reservoir in each of these wells was considered to be on the trend with porosities and permeabilities being too low for profitable production.

The limits of the hydrocarbon trap are confined to the area above -14,000' in the Devonian and -14,500' in the Fusselman. Up-thrown faults have cut the reservoirs below these depths, and hydrocarbons will have escaped up the fault plane.

Page 2 Geologic Report Pawnee Unit

In the proposed unit is it anticipated that the Devonian and Fusselman banks will be much better developed than in either the Crosby or Cheyenne Fields, and that we will encounter a reservoir similar to that in the Sinclair #1 Tubb Estate (Cross Section A-A'). If these reservoirs are present over the structural feature as shown, then we would expect significant production from the Devonian and Fusselman.

Yours very truly,

Bryan Pollard

Exploration Manager

Gifford, Mitchell & Wisenbaker

Bryan Pallard

BP/rh