

Raptor Natural Pipeline LLC

New Mexico Oil Conservation Commission
Case Nos. 12622 and 12908
October 21 and 22, 2002

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* NEW MEXICO BOARD OF SPECIALIZATION RECOGNIZED SPECIALIST IN NATURAL RESOURCES - OIL & GAS LAW

** NEW MEXICO BOARD OF SPECIALIZATION RECOGNIZED SPECIALIST IN REAL ESTATE LAW

October 11, 2002

By Hand Delivery

Ms. Florene Davidson
New Mexico Oil Conservation Commission
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: **Case No. 12622** (*De Novo*): Application of Nearburg Exploration Company, L.L.C.
for Two Non-Standard Gas Spacing and Proration Units, Lea County, New Mexico

Case No. 12908-A (Nomenclature): In the Matter of the Hearing Called by the Oil
Conservation Division for an Order Creating, Re-designating and Extending the
Vertical and Horizontal Limits of Certain Pools in Lea County, New Mexico

Dear Ms. Davidson:

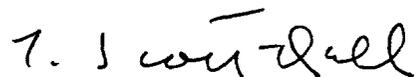
In accordance with Division Rule 1208.A, enclosed are three sets of the exhibits filed on
behalf of Raptor Natural Pipeline LLC. A copy of Raptor's original Pre-Hearing Statement dated
September 4, 2002 has been inserted in the front pocket-part of each of the exhibit notebooks.

Two of the exhibit sets are for Ms. Wrotenbery and Mr. Ross and one is for the
Commission's file. I will have separate sets hand-delivered to Ms. Bailey, Mr. Kellahin and Mr. Carr
today and will send another set to Dr. Lee via Federal Express.

Florene Davidson
October 11, 2002
Page two

Very truly yours,

MILLER, STRATVERT & TORGERSON, P.A.

A handwritten signature in black ink, appearing to read "J. Scott Hall". The signature is written in a cursive style with a horizontal line above the "i" in "Scott".

J. Scott Hall

JSH/ao
Enclosure(s) – as stated

Cc: Commissioner Lori Wrotenbery
Commissioner Jami Bailey
Commissioner Robert Lee
Stephen Ross, Esq.
W. Thomas Kellahin, Esq.
Wm. F. Carr, Esq.

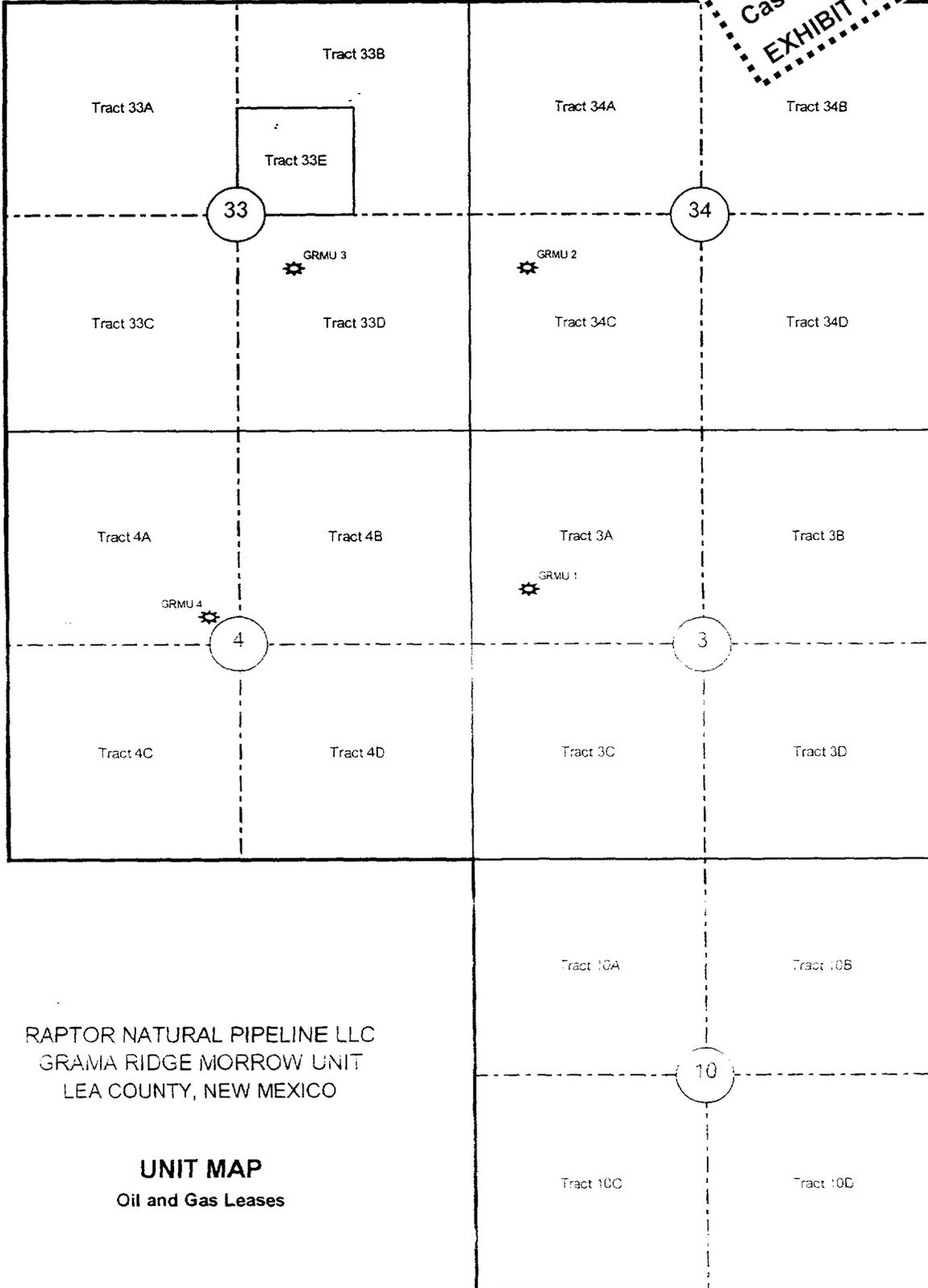
7849/26841

1. Grama Ridge-Morrow Unit Oil and Gas Lease Map & Surface Ownership Map
2. NMOCC Order No. R-2792
3. State Unit Agreement
 - A. Original Unit Agreement
 - B. 1st Amendment
 - C. 2nd Amendment
4. Federal Unit Agreement with amendment
5. NMOCC Order R-4473
6. NMOCC Order R-4491
7. NMOCC Order R-5782
8. C-101 and C-102 forms
9. Tract Book Index Page
10. NMSA 1978 § 19-10-31
11. Land Commissioners Approval of 2nd Amendment
12. Plan of Operations
13. NMOCD Order R-11611 (Special Project Rules Order)
14. Wellbore schematics
15. NMOCD Order R-11768

EXHIBIT "A"
GRAMA RIDGE MORROW UNIT

R34E

~~Exhibit~~
Case No. _____
EXHIBIT NO. _____

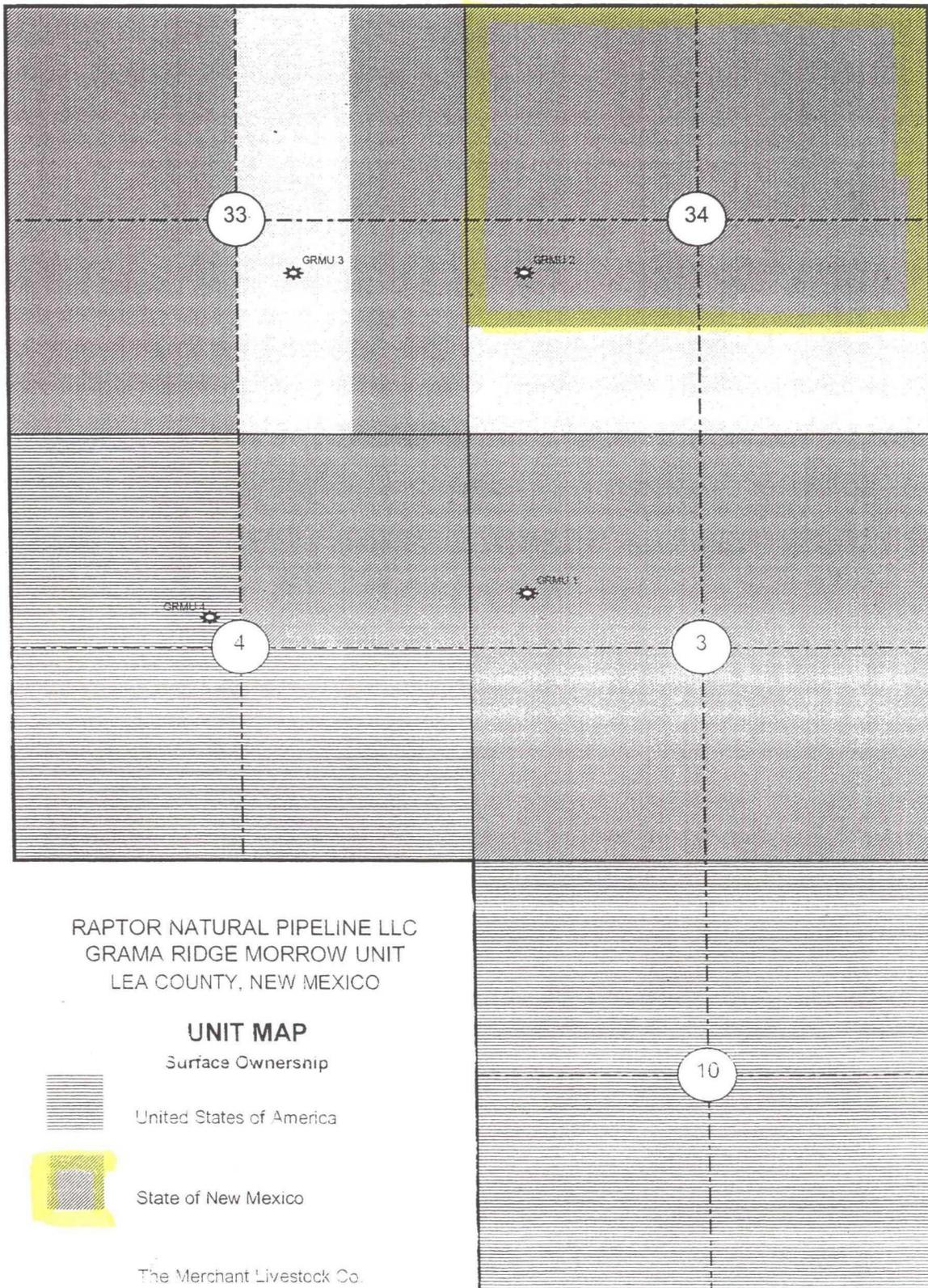


RAPTOR NATURAL PIPELINE LLC
GRAMA RIDGE MORROW UNIT
LEA COUNTY, NEW MEXICO

UNIT MAP
Oil and Gas Leases

EXHIBIT "C"
GRAMA RIDGE MORROW UNIT

R34E



BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

2

CASE No. 3128
Order No. R-2792

APPLICATION OF SHELL OIL COMPANY
FOR APPROVAL OF THE GRAMA RIDGE
UNIT AGREEMENT, LEA COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 13, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 21st day of October, 1964, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Shell Oil Company, seeks approval of the Grama Ridge Unit Agreement covering 3051.92 acres, more or less, of State and Federal lands described as follows:

LEA COUNTY, NEW MEXICO
TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM
Section 34: All

TOWNSHIP 22 SOUTH, RANGE 34 EAST, NMPM
Section 3: N/2
Section 4: All
Section 5: SE/4
Section 8: All
Section 9: All

(3) That approval of the proposed unit agreement should promote the prevention of waste and the protection of correlative rights within the unit area.

IT IS THEREFORE ORDERED:

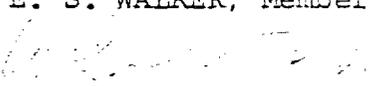
- (1) That the Grama Ridge Unit Agreement is hereby approved.
- (2) That the plan contained in said unit agreement for the development and operation of the unit area is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation which is now, or may hereafter be, vested in the Commission to supervise and control operations for the exploration and development of any lands committed to the unit and production of oil or gas therefrom.
- (3) That the unit operator shall file with the Commission an executed original or executed counterpart of the unit agreement within 30 days after the effective date thereof; that in the event of subsequent joinder by any party or expansion or contraction of the unit area, the unit operator shall file with the Commission within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.
- (4) That this order shall become effective upon the approval of said unit agreement by the Commissioner of Public Lands for the State of New Mexico and the Director of the United States Geological Survey; that this order shall terminate ipso facto upon the termination of said unit agreement; and that the last unit operator shall notify the Commission immediately in writing of such termination.
- (5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JACK M. CAMPBELL, Chairman


E. S. WALKER, Member


A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

UNIT AGREEMENT
FOR THE OPERATION OF THE
GRAMA RIDGE MORROW UNIT AREA
LEA COUNTY, NEW MEXICO

SIGNED
AGREEMENT

3A

THIS AGREEMENT entered into as of the 25th day of April, 1973 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 or gas interests in the unit area subject to this agreement; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico (hereinafter referred to as "Commissioner") is authorized by law to consent to and approve the operation of state lands under agreements made by lessees of state lands jointly or severally with other lessees where such agreements provide for the unit operation of part of or all of any oil or gas pool, field or area (Section 7-11-39, 7-11-40 N.M.S.A. 1953 Comp.); and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by law to amend with the approval of lessee, evidenced by lessee's execution of such agreement or otherwise, any oil and gas lease embracing state lands so that the length of the term of said lease may coincide with the term of such agreement for the unit operation of part or all of any oil or gas pool, field or area (Section 7-11-41 N.M.S.A. 1953 Comp.); and

WHEREAS, the Oil Conservation Commission of the State of New Mexico (hereinafter referred to as "Commission") is authorized by law to approve this agreement and the conservation provisions thereof (Art. 3, Chap. 65, Vol. 9 Part 2 N.M.S.A. 1953 Comp.); and

WHEREAS, the parties hereto hold sufficient interest in the Grama Ridge Morrow Unit Area covering the lands hereinafter described

ILLEGIBLE

to give reasonably effective control of operations therein; and

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

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. UNIT AREA: The following described land is hereby designated and recognized as constituting the unit area:

Township 21 South, Range 34 East, N.M.P.M.

Section 34 - All

Township 22 South, Range 34 East, N.M.P.M.

Section 3 - All

containing 1287.16 acres, more or less.

Exhibit "A" attached hereto is a map showing the unit area and 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 lands 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 on said map or schedule as owned by such party. Exhibits "A" and "B" shall be revised by the unit operator whenever changes in ownership in the unit area render such revisions necessary or when requested by the Commissioner.

All land committed to this agreement shall constitute land referred to herein as "unitized land" or "land subject to this agreement".

2. UNITIZED SUBSTANCES: All oil, gas, natural gasoline and associated fluid hydrocarbons in the unitized formation as hereinafter defined are unitized under the terms of this agreement and herein are called unitized substances.

3. UNITIZED FORMATION: That subsurface portion of the unit area commonly known as the Morrow sands which is the same zone as the top and bottom of which were encountered at log depths of 12,722 feet and 13,208 feet in the Shell Oil Company State Well No. 1 as shown on the Schlumberger Sonic Log - Gamma Ray Log of said well dated July 5, 1965, which said well is located 1980 feet from the North line and 660 feet from the west line of Section 3, Township 22 South, Range 34 East, is unitized under this agreement and is hereinafter referred to as the "unitized formation".

4. UNIT OPERATOR: Llano, Inc. with offices at Hobbs, New Mexico (P.O. Drawer 1320) is hereby designated as unit operator and by signature hereto commits to this agreement all interest in unitized substances vested in it as set forth on Exhibit "B" and agrees and consents to accept the duties and obligations of unit operator for the operation of the Grama Ridge Morrow Unit Area. 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 interests 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 interest is owned by it.

5. RESIGNATION OR REMOVAL OF UNIT OPERATOR: Unit operator shall have the right to resign at any time, but such resignation shall not become effective until a successor unit operator has been selected and approved in the manner provided for in Section 6 of this agreement. The resignation of the unit operator shall not release the unit operator from any liability or any default by it hereunder occurring prior to the effective date of its resignation.

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 determined in like manner as herein provided for the selection of a new unit operator. Such removal shall be effective upon notice thereof to the Commissioner.

The resignation or removal of the unit operator under this agreement shall not terminate his 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 equipment, materials and appurtenances used in conducting the unit operations and owned by the working interest owners to the new duly qualified successor unit operator, or to the owners thereof 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 resign as unit operator or shall be removed as hereinabove provided, the owners of the working interests according to their respective acreage interests in all unitized land shall by a majority vote select a successor unit operator; provided that, if a majority but less than seventy-five percent (75%) of the working interests qualified to vote is owned by one party to this agreement, a concurring vote of sufficient additional parties, so as to constitute in the aggregate not less than seventy-five percent (75%) of the total working interests, shall be required to select a new operator. Such selection shall not become effective until (a) a unit operator so selected shall accept in writing the duties and responsibilities of

unit operator, and (b) the selection shall have been approved by the Commissioner. If no successor unit operator is selected and qualified as herein provided, the Commissioner at his election may declare this unit agreement terminated.

7. ACCOUNTING PROVISIONS: The unit operator shall pay all costs and expenses incurred in conducting unit operations hereunder. In the event the ownership of the unitized formation should hereafter be divided or owned in whole or in part by parties other than unit operator, from and after such time unit operator shall pay in the first instance all costs and expenses incurred in conducting unit operations hereunder, and such costs and expenses and the working interest benefits accruing hereunder shall be apportioned among the owners of the unitized working interests in accordance with an operating agreement entered into by and between the unit operator and the owners of such 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 "Operating Agreement". No such 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 of obligation established under this unit agreement and in case of any inconsistencies or conflict between this unit agreement and the operating agreement, this unit agreement shall prevail.

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 producing, storing, allocating and distributing the unitized substances are hereby delegated to and shall be exercised by the unit operator as herein provided.

Acceptable evidence of title to said rights shall be deposited with said unit operator and, together with this agreement, shall constitute and define the rights, privileges and obligations of unit operator. Nothing herein, however, shall be construed to transfer title to any land or to any lease or operating agreement, it being understood that under this agreement the unit operator, in its capacity as unit operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

9. PURPOSE OF UNIT AND PLAN OF OPERATION: It is recognized and agreed by the parties hereto that the unitized formation as to all of the lands subject to this agreement is reasonably proven to be productive of unitized substances or necessary for unit operations and that the object and purpose of this agreement is to formulate and put into effect a secondary recovery and gas storage project in order to effect the greatest economic recovery of unitized substances, prevent waste and conserve natural resources consistent with good engineering practices expected of a prudent operator. The parties hereto agree that the unit operator may, subject to the approval of a plan of operation by the Commissioner, inject gas produced from lands other than the unit area into the unitized formation through the Shell Oil Company State GRA Well No. 1 located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 3, Township 22 South, Range 34 East and the Shell State GRB Well No. 1 located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 34, Township 21 South, Range 34 East for secondary recovery and storage purposes. Unit operator shall furnish the Commissioner, between the first and twentieth of each month, reports showing the amount of gas produced and injected into the unitized formation for the preceding month.

A plan of operation shall be filed with the Commissioner concurrently with the filing of this unit agreement for final approval. Said plan of operation and all revisions thereof shall be as complete

and adequate as the Commissioner may determine to be necessary in connection with operations hereunder. Upon approval of this agreement and the aforementioned plan of operation by the Commissioner, said plan and all subsequently approved plans shall constitute the operating obligations of the unit operator under this agreement for the period specified in the plan. Thereafter, from time to time before the expiration of any existing plan, the unit operator shall submit for approval a plan for an additional specified period of operation. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of operation. The unit operator shall furnish to the Commissioner, within 30 days from the expiration of each 6 month period, a report giving full factual information as to the manner in which the plan in effect for such period has been carried out.

If the unit operator should fail to comply with any approved plan of operation or supplement to or modification thereof, this agreement may be terminated by the Commissioner; provided, however, the Commissioner shall give notice to the unit operator and the lessees of record in the manner prescribed by Section 7-11-14 N.M.S.A. 1953 of intention to cancel because of any alleged breach of said plan of operation and any decision entered therein shall be subject to appeal in the manner prescribed by Section 7-11-17 N.M.S.A. 1953; and provided further in any event unit operator shall be given a reasonable opportunity after a final determination within which to remedy said default, failing in which this agreement shall be terminated.

10. TRACT PARTICIPATION: Exhibit "B" attached hereto shows the percentage of participation of each of the tracts embraced by leasehold interests which are committed to this agreement. These participation factors have been obtained by dividing the number of acres contained in each tract by the total number of acres contained in the unit area.

The unitized substances produced from the unit area shall be allocated to the respective tracts as hereinafter set forth in accordance with said percentages of participation and such unitized substances shall be deemed to have been produced from the respective tracts to which allocated.

11. ALLOCATION OF PRODUCTION:

A. PHASE I: It is recognized that there is still some primary gas and liquid hydrocarbons left in the unitized formation underlying the unit area which would otherwise be produced in the normal producing life of the existing wells before they reach their economic limit upon which the state would be entitled to royalty. It is contemplated that gas produced from lands outside the unit area will be injected into the unitized formation for a considerable length of time before any appreciable amounts of gas are withdrawn. The primary production which would normally have been produced from May 1, 1975 to its economic limit has been determined by B.H.P/Z method based upon prior production, and Exhibit "C" attached hereto shows the royalty gas to which the state is entitled. In order that the State of New Mexico will continue to receive royalties on the same basis as if the existing wells had continued normal production until they reached their economic limits, the amount of gas shown for the respective months on Exhibit "C" shall be allocated to the tracts in accordance with the percentages set forth on Exhibit "B" and unit operator shall pay to the state royalties on the gas allocated to the respective tracts on the basis provided in the leases covering said tracts exactly the same as if the gas had actually been produced therefrom. Such payments based upon the gas for each of the months shown on Exhibit "C" shall be considered as full payment to the state for all remaining primary gas reserves. The period from May 1, 1973 through the months shown on Exhibit "C" shall constitute Phase I.

B. PHASE II: It is contemplated that after the unitized formation has been reasonably repressured by the injection of gas produced from lands outside the unit area, there will be withdrawals from time to time. Unit operator shall install and at all times operate and maintain metering equipment and other facilities approved by the Commissioner so that an accurate cumulative account can be kept of the quantity of gas as well as the total number of British Thermal Units in the gas injected into the unitized formation through the existing wells. Operator shall also keep an accurate cumulative account of the total number of British Thermal Units in all gas withdrawn from the unitized formation.

Operator shall also install, operate and maintain at all times the necessary separation equipment to separate the gas from the liquid hydrocarbons produced in connection with the withdrawal of gas from the respective wells, as well as all other related equipment which may be required to transfer all liquids so separated.

Operator shall cause monthly analyses by chromatograph or other mutually acceptable method of all the gas injected into or withdrawn from the reservoir in order to compute the net change in British Thermal Unit content.

Operator shall pay royalties to the state at the rates provided in the respective leases on all liquid hydrocarbons which are separated from the gas withdrawn and allocated to the respective tracts in accordance with the percentages of participation set forth on Exhibit "B" regardless of the time said gas is withdrawn. In addition, should the total cumulative British Thermal Units in the gas withdrawn exceed the total British Thermal Units in the gas

injected plus the pre-determined number of British Thermal Units in the remaining primary gas reserves and for which the state has been or will be paid during Phase I, then operator shall pay royalties on said increase in British Thermal Units at the prevailing market price in Lea County, New Mexico as set by the Federal Power Commission for gas of like quality. Payment for British Thermal Unit enrichment as set forth herein shall be made on a monthly basis as the result of the chromatograph analyses.

In addition to the rental and royalty provided in the leases covering the respective tracts beginning with the first of the month following the end of Phase I as shown on Exhibit "C" unit operator shall pay an annual storage fee or rental of \$1.00 per acre plus 1/2¢ per thousand cubic feet of gas withdrawn from the reservoir, which shall be allocated to the respective leasehold interests on the basis of the percentage of participation set forth on Exhibit "B". Said storage fee or additional rental of \$1.00 per acre shall be paid during the month of February of each year and the 1/2¢ per thousand cubic feet for gas withdrawn shall be based on the monthly withdrawals, payments to be made in the month following the month in which withdrawals are made.

All gas produced from the lands outside the unit area and injected into the unitized formation, as well as all primary gas if, as and when produced, except for the payments to be made to the state in accordance with Phase I, may be withdrawn from the unitized formation from time to time royalty free except as to any enhancement in value through an increase in British Thermal Units. Notwithstanding the above, royalty shall be paid on all liquid hydrocarbons separated from gas withdrawn.

12. LEASES AND CONTRACTS CONFORMED AND EXTENDED. The terms, conditions and provisions of all leases, subleases, operating agreements and other contracts relating to the exploration, drilling,

development or operation for oil or gas of the lands committed to this agreement shall, as of the effective date hereof, be and the same are hereby expressly modified and amended insofar as they apply to lands within the unitized area to the extent necessary to make the same conform to the provisions hereof and so that the respective terms of said leases and agreements will be extended insofar as necessary to coincide with the term of this agreement and the approval of this agreement by the Commissioner and the respective lessees shall be effective to conform the provisions and extend the term of each such lease as to lands within the unitized area to the provisions and term of this agreement; but otherwise to remain in full force and effect. Each lease committed to this agreement, insofar as it applies to lands within the unitized area, shall continue in force beyond the term provided therein so long as this agreement remains in effect. Termination of this agreement shall not affect any lease which pursuant to the terms thereof or any applicable laws would continue in full force and effect thereafter. The continued operation or production of a well or wells for unitized substances on the unit area or for gas storage purposes shall be construed and considered as the continued operation or production on each of the leasehold interests committed to this agreement and operations or production or gas storage pursuant to this agreement shall be deemed to be operations upon and production from each leasehold interest committed hereto and there shall be no obligation on the part of the unit operator or any of the owners of the respective leasehold interests committed hereto to drill offsets to wells as between the leasehold interests committed to this agreement.

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 terms of such leases shall apply separately as to such segregated portions

commencing as of the effective date hereof. 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 and gas, or either of them, are capable of being produced from or gas is being stored within some part of the unitized formation covered by the leases committed to this agreement at the expiration of the secondary term thereof.

13. CONSERVATION: Operations hereunder and production of unitized substances shall be conducted to provide for the most economical and efficient recovery and storage of said substances without waste, as defined by or pursuant to state laws or regulations.

14. DRAINAGE: In the event a well or wells producing oil or gas in paying quantities should be brought in on land adjacent to the unit area draining unitized substances from the lands embraced therein, unit operator shall drill such offset well or wells as a reasonably prudent operator would drill under the same or similar circumstances.

15. COVENANTS RUN WITH LAND: The covenants herein shall be construed to be covenants running with the land with respect to the interests 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, royalty or other interest subject hereto shall be binding upon unit operator until the first day of the calendar month after the unit operator is furnished with the original, photostatic or certified copy of the instrument of transfer.

16. EFFECTIVE DATE AND TERM: This agreement shall become effective as of April 25, 1973 upon approval by the Commissioner and shall remain in effect so long as unitized substances are being produced from or stored within the unitized formation. This agreement may be terminated at any time by not less than seventy-five per cent (75%) on an acreage basis of the owners of working interests signatory hereto with the approval of the Commissioner.

17. RATE OF PRODUCTION: All production and the disposal thereof shall be in conformity with allocations, allotments and quotas made or fixed by the Commission and in conformity with all applicable laws and lawful regulations.

18. 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 Commissioner of Public Lands and the New Mexico Oil Conservation Commission, and to appeal from orders issued under the regulations of the Commissioner or Commission or to apply for relief from any of said regulations or in any proceedings on its own behalf relative to operations pending before the Commissioner or Commission; provided, however, that any other interested party shall also have the right at his own expense to appear and to participate in any such proceeding.

19. NOTICES: All notices, demands or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if given in writing and sent by postpaid 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 party may have furnished in writing to party sending the notice, demand or statement.

20. UNAVOIDABLE DELAY: All obligations under this agreement requiring the unit operator to produce unitized substances from or

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17. RATE OF PRODUCTION: All production and the disposal thereof shall be in conformity with allocations, allotments and quotas made or fixed by the Commission and in conformity with all applicable laws and lawful regulations.

18. 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 Commissioner of Public Lands and the New Mexico Oil Conservation Commission, and to appeal from orders issued under the regulations of the Commissioner or Commission or to apply for relief from any of said regulations or in any proceedings on its own behalf relative to operations pending before the Commissioner or Commission; provided, however, that any other interested party shall also have the right at his own expense to appear and to participate in any such proceeding.

19. NOTICES: All notices, demands or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if given in writing and sent by postpaid 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 party may have furnished in writing to party sending the notice, demand or statement.

20. UNAVOIDABLE DELAY: All obligations under this agreement requiring the unit operator to produce unitized substances from or

store gas within the unitized formation covered by this agreement shall be suspended while, but only so long as, 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, war, 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.

21. LOSS OF TITLE: In the event title to any tract of unitized land or substantial interest therein shall fail and the true owner cannot be induced to join the unit agreement so that such tract is not committed to this agreement or the operation thereof hereunder becomes impracticable as a result thereof, such tract may be eliminated from the unitized area, and the interest of the parties readjusted as a result of such tract being eliminated from the unitized area. In the event of a dispute as to the title to any royalty, working or other interest subject hereto, the unit operator may withhold payment or delivery of the allocated portion of the unitized substances involved on account thereof without liability for interest until the dispute is finally settled, provided that no payment of funds due the State of New Mexico shall be withheld. Unit operator as such is relieved from any responsibility for any defect or failure of any title hereunder.

22. RE-NEGOTIATION OF STORAGE OR RENTAL FEE: The gas storage fee paid on gas withdrawn under Section 11B shall be valid for a period of three (3) years from the effective date of this agreement. During the final year of the first three (3) year period that this agreement is in force the fee set out in Section 11B shall be re-negotiated between the parties hereto. Each such re-negotiated rate to be in effect for the succeeding five (5) year period. If the parties hereto are unable to agree to re-negotiated new fees sixty (60) days prior to the

expiration of the first three (3) year period and at least sixty (60) days prior to the first day of any such succeeding five (5) year period, payment of the fees on the basis of prior rates shall continue and this agreement shall terminate upon expiration of not more than two (2) years from said first day (during which time the parties hereto may remove the metered and injected gas not previously withdrawn and equipment and facilities installed under this agreement) unless during such two (2) year period the parties hereto agree upon a re-negotiated rate to be effective retroactively to said first day. Any gas or facilities not then removed by the termination date shall become the property of the State of New Mexico if it so elects.

23. HOLD HARMLESS CLAUSE: Notwithstanding any of the provisions contained herein, unit operator shall save, hold and protect the Commissioner of Public Lands and the State of New Mexico harmless from all claims and liabilities of whatsoever kind, nature or description arising from or growing out of operations carried on by unit operator pursuant to this agreement.

24. 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.

IN WITNESS WHEREOF, the undersigned parties have caused this agreement to be executed as of the respective dates set forth opposite their signatures.

ATTEST:

[Signature]
Secretary

Date: June 7, 1973

ELANG, INC.

By *[Signature]*
President

UNIT OPERATOR AND WORKING INTEREST OWNER

Address: P. O. Box 1320
Hobbs, New Mexico 38240

CONSENT AND RATIFICATION
GRAMA RIDGE MORROW UNIT AGREEMENT
EMBRACING LANDS IN LEA COUNTY, NEW MEXICO

The undersigned hereby acknowledges receipt of a copy of the Unit Agreement for the Development and Operation of the Grama Ridge Morrow Unit Area embracing lands situated in Lea County, New Mexico, which is dated the 25th day of April, 1973, and further acknowledges that the undersigned is familiar with the terms and conditions thereof. As to unitized substances in the unitized formation defined in said Unit Agreement, the undersigned owns no interest whatsoever. However, the undersigned does own the official record title to an oil and gas lease from the State of New Mexico as lessor, which lease is more particularly described in said Unit Agreement. Said lease is subject to certain operating rights and working interest owned by another. The undersigned understands that the owner of said operating rights and working interest desires to commit the same to said Unit Agreement. Pursuant to policies and practices of the State Land Office for the State of New Mexico, the Commissioner of Public Lands for the State of New Mexico requires consent and joinder of the official record title holders or lessees of record of State of New Mexico oil and gas leases before the Commissioner will approve the above Unit Agreement. In its capacity as owner of the official record title, or as lessee of record, to a State of New Mexico oil and gas lease, and in that capacity only, and as an accommodation to said owner of operating rights and working interest under said lease, the undersigned desires to consent, ratify and join in the execution of said Unit Agreement. By these presents the undersigned does hereby consent to said Unit Agreement and ratifies all of the terms and provisions thereof exactly the same as if the undersigned had executed the original of said Unit Agreement, or a counterpart thereof, in the undersigned's capacity as official record title holder or lessee of record of a State of New Mexico oil and gas lease.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth opposite the signature.

Date: July 18, 1973

TEXACO INC.
By: [Signature]
ATTORNEY-IN-FACT

APPROVED AS TO
Terms [Signature]
Form R.M.W.

STATE OF TEXAS)
) ss.
COUNTY OF MIDLAND)

The foregoing instrument was acknowledged before me this 18th day of July, 1973, by D. F. Dullberg of TEXACO INC., a Delaware corporation, on behalf of said corporation.

[Signature]
Notary Public

My Commission Expires:
6-1-75

R 34 E

T
21
S

Llano
K-3592-1
(Shell)

Tr. 4

34
Llano
E-9659
(Gulf)

Tr. 3

State

Llano
E-9141
(Shell)

Tr. 2

3
Llano
B-158-3
(Texaco)

Tr. 1

State

T
22
S

LLANO, INC.

GRAMA RIDGE MORROW UNIT
LEA COUNTY, NEW MEXICO

UNIT OWNERSHIP MAP

SCALE IN FEET

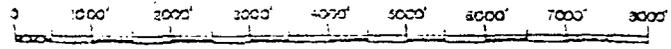


EXHIBIT "B"
GRAMA RIDGE MORROW UNIT AGREEMENT

Tract No.	Description	No. Surface Acres	Lease No.	Basic Royalty	Lessees of Record	Overriding Royalty or Prod. Pymt.	Working Int. Owner and Percentage	Percentage Tract Participation	
1	Sh Sec. 3, T. 22 S., R. 34 E.	320.00	B-158-3	12½%	Texaco Inc.	None	Llano, Inc. 100%	24.861	
2	N½ Sec. 3, T. 22 S., R. 34 E.	327.16	E-9141	12½%	Shell Oil Company	None	Llano, Inc. 100%	25.417	
3	Sh Sec. 34, T. 21 S., R. 34 E.	320.00	E-9659	12½%	Gulf Oil Corporation	None	Llano, Inc. 100%	24.861	
4	N½ Sec. 34, T. 21 S., R. 34 E.	320.00	K-3592-1	12½%	Shell Oil Company	None	Llano, Inc. 100%	24.861	
Total								1287.16	100.000

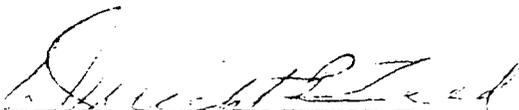
EXHIBIT "C"

Composite Royalty Production - BHP/2 Method - Grama Ridge Morrow Unit Area, Lea County, New Mexico

1973		1974		1975		1976		1977	
Month	Equivalent Gas Production MCF								
May	1,860	Jan.	1,060	Jan.	810	Jan.	610	Jan.	460
June	1,770	Feb.	1,040	Feb.	790	Feb.	600	Feb.	450
July	1,660	Mar.	1,010	Mar.	775	Mar.	590	Mar.	445
Aug.	1,590	April	990	April	750	April	575	April	430
Sept.	1,510	May	960	May	740	May	550	May	425
Oct.	1,450	June	950	June	710	June	540	June	410
Nov.	1,380	July	925	July	700	July	525	July	400
Dec.	1,090	Aug.	900	Aug.	690	Aug.	510	Aug.	395
		Sept.	890	Sept.	675	Sept.	500	Sept.	390
Total	12,310	Oct.	860	Oct.	650	Oct.	495	Oct.	375
		Nov.	840	Nov.	640	Nov.	490	Nov.	370
Cum.	12,310	Dec.	825	Dec.	625	Dec.	475	Dec.	360
		Total	11,250	Total	8,555	Total	6,460	Total	4,910
		Cum.	23,560	Cum.	32,115	Cum.	38,575	Cum.	43,485

1978		1979	
Month	Equivalent Gas Production MCF	Month	Equivalent Gas Production MCF
Jan.	350	Jan.	270
Feb.	345	Feb.	270
Mar.	340		
April	330		
May	325		
June	310		
July	305		
Aug.	300		
Sept.	295		
Oct.	290		
Nov.	280		
Dec.	15		
Total	45	Total	540

I, Dwight P. Teed, Secretary of Llano, Inc. do hereby certify that the Agreement attached hereto, consisting of sixteen (16) pages and exhibits and entitled "Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area, Lea County, New Mexico", entered into on April 25, 1973, is a true and correct copy of said Agreement.


Dwight P. Teed, Secretary

CERTIFICATE OF APPROVAL

BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO

AMENDMENT OF UNIT AGREEMENT

GRAMA RIDGE-MORROW UNIT

LEA COUNTY, NEW MEXICO

3B

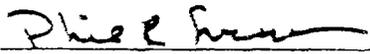
There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Amendment of Unit Agreement for the development and operation of the Grama Ridge-Morrow Unit Area, Lea County, New Mexico for the purpose of expanding the Unit Area.

The attached Amendment of Unit Agreement was entered into as of September 1, 1976 by and between the parties to the original Unit Agreement for the purpose of expanding the unit area to include all of Section 33, Township 21 South, Range 34 East, N.M.P.M. The Amendment also ratifies and confirms the Original Unit Agreement as amended and upon examination of said Amendment, the Commissioner finds:

- (a) That such Amendment to this Agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed amended Agreement the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such Agreement is in other respects for the best interests of the State, with respect to State lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, and 7-11-48, New Mexico Statutes Annotated, 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Amendment, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 26th day of January, 1977.


COMMISSIONER OF PUBLIC LANDS
Of the State of New Mexico

AMENDMENT TO UNIT AGREEMENT
FOR OPERATION OF THE GRAMA
RIDGE-MORROW UNIT AREA
LEA COUNTY, NEW MEXICO

RECEIVED
DEC 17 8 52 AM '76
STATE LAND OFFICE
SANTA FE, N.M.

THIS AMENDMENT entered into as of the first day of September, 1976, by and between the parties subscribing, ratifying or consenting hereto and herein referred to as the "parties hereto".

WHEREAS, as of April 25, 1973 the Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area was entered into by and between Llano, Inc. as unit operator and as a working interest owner and by Gulf Oil Corporation and Texaco Inc. as record title owners of oil and gas leases embracing lands in the unit area, which said agreement was approved by the Commissioner of Public Lands of the State of New Mexico, herein referred to as "Commissioner", on August 27, 1973, and

WHEREAS, the original unit agreement covered all of Section 34, Township 21 South, Range 34 East and all of Section 3, Township 22 South, Range 34 East and was entered into for the purpose of formulating and putting into effect a secondary recovery and gas storage project as to the Morrow formation which was unitized under said agreement and which is specifically defined in Section 3 thereof, and

WHEREAS, the unit operator has injected gas into wells located on the unit area which has resulted in a pressure increase in the South Wilson Deep Unit No. 1 gas well producing from the unitized formation located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, Township 21 South, Range 34 East and has likewise resulted in an increase in pressure in the Llano Federal GR-4 No. 1 Morrow gas well located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 4, Township 22 South, Range 34 East and such communication indicates that said wells are located in the same reservoir as the two gas wells within the unit area which wells

have been used for the injection and withdrawal of gas pursuant to the terms of said unit agreement, and

WHEREAS, it now appears that the Morrow gas reservoir underlies Sections 33 and 34, Township 21 South, Range 34 East and Sections 3 and 4, Township 22 South, Range 34 East, and

WHEREAS, all of Section 33 is owned by the State of New Mexico except the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of said section which is fee land and the minerals underlying said 40 acres, subject to the existing lease, are owned 32.37% by Don E. Gridley and wife, Alice F. Gridley, John E. Bosserman and wife, Carol Jean Bosserman and 67.63% by The Merchant Livestock Company, and

WHEREAS, all of Section 4, Township 22 South, Range 34 East is federal land and Llano, Inc. has entered into an agreement with the United States, acting by and through the Secretary of the Interior, effective as of November 1, 1975 for the storage of gas in the Morrow formation which is unitized under the terms of said unit agreement. Said gas storage agreement with the United States recognizes that the gas reservoir underlies the 4 sections hereinabove referred to and also provides that all injection and withdrawal fees payable to the United States shall be based upon 1/4 of all gas injected or withdrawn from the reservoir through any wells located on the 4 sections above referred to, and

WHEREAS, it is the purpose of this amendment to expand the unit area to include all of Section 33, Township 21 South, Range 34 East so that the unit agreement, taken into consideration with the gas storage agreement with the United States covering Section 4, will cover the entire reservoir, and

WHEREAS, the unit agreement recognized that there was still some primary gas and liquid hydrocarbons left in the unitized formation when the unit agreement was entered into and said agreement provided for the payment of royalty thereon on a monthly basis beginning in May, 1974 through February, 1979 and the unit operator has agreed to pay in full all royalty payments provided for in Exhibit "C"

attached to the unit agreement, as well as the royalty for the remaining 318,519 MCF of primary gas and the liquid hydrocarbons attributable thereto underlying said Section 33 (15/16 of which is to be allocated to Tract 5 and 1/16 to Tract 6 shown on Exhibit "B") so that Phase I provided for in Section 11(a) of the original agreement will no longer be applicable; and

WHEREAS, the parties are desirous of amending said unit agreement to provide for the same gas injection and withdrawal fees (on an average basis) as are provided under the terms of the gas storage agreement with the United States covering Section 4 as to 1/4 of the gas injected and withdrawn from said reservoir; subject, however, to the right of the unit operator to withdraw gas previously injected from extraneous sources up to and including August 31, 1976 amounting to 6,727,987 MCF at a pressure base of 15.025 psia without payment of withdrawal fees as to any portion thereof withdrawn prior to March 1, 1979.

NOW, THEREFORE, in consideration of the premises, the parties hereby mutually agree that the Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area shall be and is hereby amended as hereinafter set forth:

1. Section 1 of the unit agreement is amended as follows:

1. UNIT AREA: The following described land is hereby designated and recognized as constituting the unit area:

Township 21 South, Range 34 East, N.M.P.M.
Section 33 - All
Section 34 - All
Township 22 South, Range 34 East, N.M.P.M.
Section 3 - All
containing 1,327.15 acres, more or less

Exhibit "A" attached hereto is a map showing the unit area and 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 lands 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 on said map or schedule as owned by such party. Exhibits "A" and "B" shall be revised by the unit operator whenever changes in ownership in the unit area render such revisions necessary or when requested by the Commissioner.

All land committed to this agreement shall constitute land referred to herein as "unitized land" or "land subject to this agreement".

2. Section 9 of the unit agreement is amended as follows:

9. PURPOSE OF UNIT AND PLAN OF OPERATION: It is recognized and agreed by the parties hereto that the unitized formation as to all of the lands subject to this agreement is reasonably proven to be productive of unitized substances or necessary for unit operations and that the object and purpose of this agreement is to formulate and put into effect a secondary recovery and gas storage project in order to effect the greatest economic recovery of unitized substances, prevent waste and conserve natural resources consistent with good engineering practices expected of a prudent operator. The parties hereto agree that the unit operator may, subject to the approval of a plan of operation by the Commissioner, inject gas produced from lands other than the unit area into the unitized formation through the following wells for secondary recovery and storage purposes:

Shell Oil Company State GRA Well No. 1 - SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 3
Township 22 South, Range 34 East (Llano, Inc. operator)

Shell State GRB Well No. - NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 34, Township 21
South, Range 34 East (Llano, Inc. operator)

South Wilson Deep Unit No. 1 well - NW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33,
Township 21 South, Range 34 East (Llano, Inc. operator)

Llano Federal GR-4 No. 1 Morrow - SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 4
Township 22 South, Range 34 East (Llano, Inc. operator)

Unit operator shall furnish the Commissioner, between the first and twenty-fifth of each month, reports showing the amount of gas produced and injected into the unitized formation for the preceding month.

Unit operator shall have the right to rework or recondition the wells now located on the unit area or to drill additional wells to inject gas into or produce gas from the gas storage reservoir area to the extent that such work shall be approved by the Commissioner as necessary or incident to the rights granted to unit operator pursuant to this agreement. Unit operator shall conduct all operations hereunder in accordance with all applicable laws and regulations and shall comply with all the terms and conditions of the respective leases.

A plan of operation shall be filed with the Commissioner concurrently with the filing of this unit agreement for final approval. Said plan of operation and all revisions thereof shall be as complete and adequate as the Commissioner may determine to be necessary in connection with operations hereunder. Upon approval of this agreement and the aforementioned plan of operation by the Commissioner, said plan and all subsequently approved plans shall constitute the operating obligations of the unit operator under this agreement for the period specified in the plan. Thereafter, from time to time before the expiration of any existing plan, the unit operator shall submit for approval a plan for an additional specified period of operation. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of operation. The unit operator shall furnish to the Commissioner, within 30 days from the expiration of each 6 month period, a report giving full factual information as to the manner in which the plan in effect for such period has been carried out.

If the unit operator should fail to comply with any approved plan of operation or supplement to or modification thereof, this

agreement may be terminated by the Commissioner; provided, however, the Commissioner shall give notice to the unit operator and the lessees of record in the manner prescribed by Section 7-11-14 N.M.S.A. 1953 of intention to cancel because of any alleged breach of said plan of operation and any decision entered therein shall be subject to appeal in the manner prescribed by Section 7-11-17 N.M.S.A. 1953; and provided, further, in any event unit operator shall be given a reasonable opportunity after a final determination within which to remedy said default, failing in which this agreement shall be terminated.

3. Section 10 of the unit agreement is amended as follows:

10. TRACT PARTICIPATION: For the purposes of this agreement "extraneous gas" shall mean the total amount of gas from other sources injected into the reservoir less the amount which has been withdrawn. Any gas produced in excess of the extraneous gas injected prior to or after the effective date hereof shall be considered as "indigenous gas". All such indigenous gas shall be apportioned to the tracts within the unit area in the proportions set forth on Exhibit "B" attached hereto, which is based on the percentage that the acreage covered by each tract bears to the total acreage within the unit area. Royalties shall be paid to the State of New Mexico at the rates provided in the respective leases on all indigenous gas allocated to such tracts.

4. Section 11 of the unit agreement shall be amended as follows:

11. GAS STORAGE -- STORAGE, INJECTION AND WITHDRAWAL FEES:

A. Gas Storage: It is contemplated that the extraneous gas which has been injected will be withdrawn from time to time. Unit operator shall be under no obligation to inject or withdraw any particular quantity of gas other than such as it in its sole discretion deems advisable. Unit operator shall install

and at all times operate and maintain metering equipment and other facilities approved by the Commissioner so that an accurate cumulative account can be kept of the quantity of gas, as well as the total number of British Thermal Units in the gas, injected into the unitized formation through the existing wells. Operator shall also keep an accurate cumulative account of the total number of British Thermal Units in all gas withdrawn from the unitized formation.

Operator shall also install, operate and maintain at all times the necessary separation equipment to separate the gas from the liquid hydrocarbons produced in connection with the withdrawal of gas from the respective wells, as well as all other related equipment which may be required to transfer all liquids so separated.

Operator shall cause monthly analyses by chromatograph or other mutually acceptable method of all gas injected into or withdrawn from the reservoir in order to compute the net change in British Thermal Unit content.

Operator shall pay royalties at the rates provided in the respective leases on 3/4 of all liquid hydrocarbons which are separated from the gas withdrawn and allocated to the respective tracts in accordance with the percentages of participation set forth on Exhibit 'B'; provided, however, operator shall not be required to pay royalties on that portion of all liquid hydrocarbons which are separated from the first 318,519 MCF of gas withdrawn subsequent to the effective date of this amendment as payment for such liquid hydrocarbons has been included in the payment for the remaining primary gas underlying said Section 33 referred to in the preamble to this amendment. In addition, should the total cumulative British Thermal Units in the gas withdrawn exceed the total British Thermal Units in the gas injected, then operator shall pay royalties on said increase

in British Thermal Units at the prevailing market price in Lea County, New Mexico for gas of like quality. Payment for British Thermal Unit enrichment as set forth herein shall be made on an annual basis as determined by the cumulative chromatograph analyses.

B. Storage, Injection and Withdrawal Fees: In addition to the rental provided in the leases covering the respective tracts, for each year after the effective date of this amendment, unit operator shall pay an annual storage fee of \$1.00 per acre for the number of surface acres owned by the respective surface owners as shown on Exhibit "C" attached hereto. Said storage fee shall be paid in advance during the month of September of each year.

As to all gas injected or withdrawn subsequent to the effective date of this amendment, unit operator shall pay to the State of New Mexico an injection fee equal to $47/64$ of \$.00625 per MCF and a withdrawal fee equal to $47/64$ of \$.00625 per MCF on all gas injected or withdrawn from the reservoir through any wells located on the unit area or on Section 4, Township 22 South, Range 34 East during each calendar month; provided, however, no withdrawal fees shall be required on 6,727,987 MCF at 15.025 psia for gas injected prior to the effective date of this amendment if said gas is withdrawn prior to March 1, 1979. $1/64$ of said injection and withdrawal fees on all of the gas shall be paid to Don E. Gridley and wife, Alice F. Gridley, John E. Bosserman and wife, Carol Jean Bosserman, and The Merchant Livestock Company in the proportions owned by said parties. All injection and withdrawal fees shall be paid during the month following the month in which injection or withdrawals are made.

5. Section 16 of the unit agreement is amended as follows:

16. EFFECTIVE DATE AND TERM: This amendment shall become effective as of September 1, 1976 upon approval by the Commissioner

and shall remain in effect so long as unitized substances are being produced from or stored within the unitized formation. The unit agreement may be terminated at any time by not less than seventy-five (75%) percent on an acreage basis of the owners of working interests signatory hereto with the approval of the Commissioner.

6. Section 22 of the unit agreement is amended as follows:

22. RE-NEGOTIATION OF INJECTION AND WITHDRAWAL FEES:

The injection and withdrawal fees provided for in Section 11 hereof shall be effective for a period of 5 years from the effective date of this amendment; provided, however, that during the 4th year of the first 5 year period and during the 4th year of each successive 5 year period this agreement is in force and effect said fees shall be subject to re-negotiation between the parties hereto so that said fees will be commensurate with fees being paid on similar projects, such re-negotiated rate to be in effect for the succeeding 5 year period. If the parties hereto are unable to agree to re-negotiate new fees 60 days prior to the expiration of the 4th year of any 5 year period, payment of the fees on the basis of prior rates shall continue and this agreement shall terminate upon expiration of not more than 3 years from the expiration of the preceding 5 year period. During said 3 year period the parties hereto may remove the metered and injected gas not previously withdrawn and equipment and facilities installed under this agreement, unless during such 3 year period the parties hereto agree upon a re-negotiated rate to be effective retroactively. Any gas or facilities not then removed by the termination date shall become the property of the State of New Mexico if it so elects.

7. COMMITMENT OF INTERESTS TO UNIT AND RATIFICATION OF OTHER UNIT PROVISIONS: By the execution of this amendment, the parties hereto commit to the unit agreement their respective interests of whatsoever kind, nature or description in and to the unitized forma-

tion underlying the unit area. Except as amended herein, all of the other terms and conditions of the original Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area shall remain in full force and effect and are ratified and confirmed by the parties or by those consenting hereto by separate instrument.

8. COUNTERPARTS: This amendment 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.

IN WITNESS WHEREOF, the undersigned parties have caused this agreement to be executed as of the respective dates set opposite their signatures.

ATTEST:

Larry L. King
Secretary
Date: 12-16-76

LLANO, INC.

By *Donald L. Lary*
President
Address: P. O. Box 1320
Hobbs, New Mexico 88240

ATTEST:

Secretary
Date: _____

GULF OIL CORPORATION

By _____
President
Address: _____

ATTEST:

Secretary
Date: _____

TEXACO INC.

By _____
President
Address: _____

ATTEST:

Secretary
Date: _____

WILSON OIL COMPANY

By _____
President
Address: _____

tion underlying the unit area. Except as amended herein, all of the other terms and conditions of the original Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area shall remain in full force and effect and are ratified and confirmed by the parties or by those consenting hereto by separate instrument.

8. COUNTERPARTS: This amendment 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.

IN WITNESS WHEREOF, the undersigned parties have caused this agreement to be executed as of the respective dates set opposite their signatures.

ATTEST:

LLANO, INC.

Secretary
Date: _____

By _____
President
Address: _____

ATTEST:

GULF OIL CORPORATION

[Signature]
Asst. Secretary
Date: _____

By [Signature]
Attorney-in-fact
Address: PO Box 1150
Midland, Texas 79701



ATTEST:

TEXACO INC.

Secretary
Date: _____

By _____
President
Address: _____

ATTEST:

WILSON OIL COMPANY

Secretary
Date: _____

By _____
President
Address: _____

tion underlying the unit area. Except as amended herein, all of the other terms and conditions of the original Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area shall remain in full force and effect and are ratified and confirmed by the parties or by those consenting hereto by separate instrument.

8. COUNTERPARTS: This amendment 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.

IN WITNESS WHEREOF, the undersigned parties have caused this agreement to be executed as of the respective dates set opposite their signatures.

ATTEST:

LLANO, INC.

Secretary
Date: _____

By _____
President
Address: _____

ATTEST:

GULF OIL CORPORATION

Secretary
Date: _____

By _____
President
Address: _____

APPROVED:

TEXACO INC

Terms: OK
Form: SP
Date: NOVEMBER 5, 1976

By A. F. Clarke
Attorney-in-fact
Address: Box 3100
Midland, Texas 79701

ATTEST:

WILSON OIL COMPANY

Secretary
Date: _____

By _____
President
Address: _____

tion underlying the unit area. Except as amended herein, all of the other terms and conditions of the original Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area shall remain in full force and effect and are ratified and confirmed by the parties or by those consenting hereto by separate instrument.

8. COUNTERPARTS: This amendment 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.

IN WITNESS WHEREOF, the undersigned parties have caused this agreement to be executed as of the respective dates set opposite their signatures.

ATTEST:

Secretary
Date: _____

LLANO, INC.
By _____
President
Address: _____

ATTEST:

Secretary
Date: _____

GULF OIL CORPORATION
By _____
President
Address: _____

ATTEST:

Secretary
Date: _____

TEXACO INC.
By _____
President
Address: _____

ATTEST:
Francis Waldron
Secretary
Date: 29 Nov 76

WILSON OIL COMPANY
By Robert Wilson
President
Address: P.O. Box 1297
Greene, W. New Mexico 87515

Date: _____

FRANCES P. BOLTON, dba WYOMING OIL COMPANY
Address: _____

ATTEST:

NEW MEXICO ELECTRIC SERVICE COMPANY

Secretary

By _____
President

Address: _____

ATTEST:

Coyt Webb
Assistant Secretary

TUCO, INC.
By *Carroll D. Beaman*
President

Address: P. O. Box 1261
Amarillo, Texas 79170

STATE OF NEW MEXICO)
 : ss
COUNTY OF LEA)

The foregoing instrument was acknowledged before me this _____ day of _____ 1976 by _____ President of Llano, Inc., a New Mexico corporation, on behalf of said corporation.

My Commission Expires: _____
Notary Public

STATE OF _____)
 : ss
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____ 1976 by _____ of Gulf Oil Corporation, a Pennsylvania corporation, on behalf of said corporation.

My Commission Expires: _____
Notary Public

STATE OF _____)
 : ss
COUNTY OF _____)

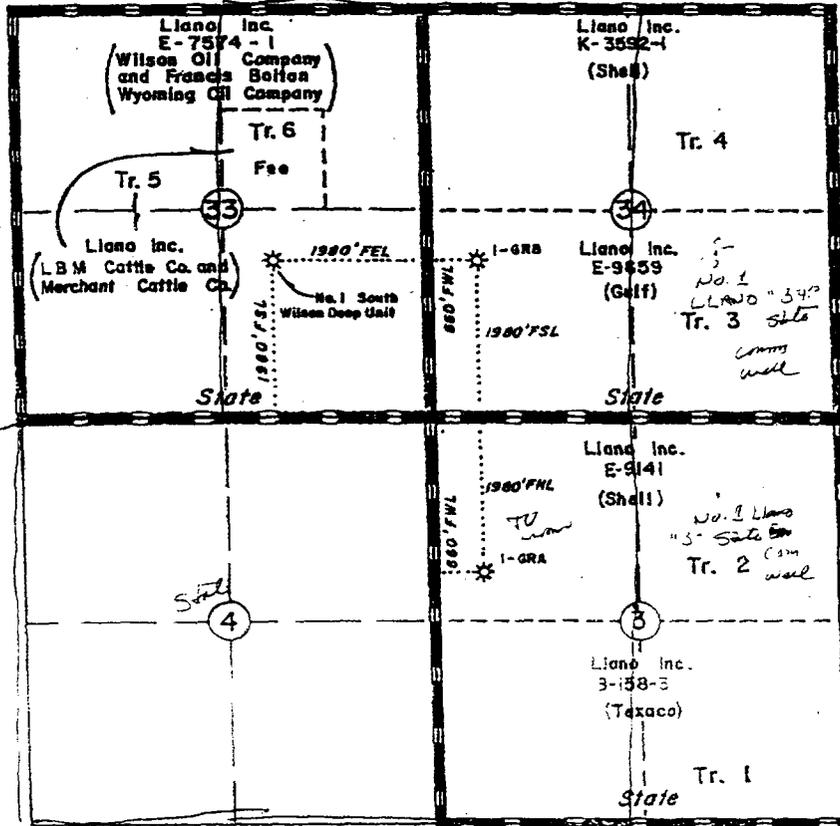
The foregoing instrument was acknowledged before me this _____ day of _____ 1976 by _____ of Texaco Inc. a Delaware corporation, on behalf of said corporation.

My Commission Expires: _____
Notary Public

R 34 E



W200 NW oil & Conservation
Division, CASE NO
Order No. 6496



T21S

T22S

Shapiro
W.L.

Stange
Stange

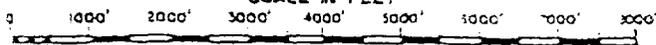
EXHIBIT "A"

LLANO, INC.

GRAMA RIDGE MORROW UNIT
Lea County, New Mexico

—UNIT OWNERSHIP MAP

SCALE IN FEET



GRAMA RI
ROW UNIT AGREEMENT

Tract No.	Description	No. Surface Acres	Lease No.	Basic Royalty	Lessee of Record	Overriding Royalty	Working Int. Owner and Percentage	Percentage Tract Participation
1	S $\frac{1}{4}$ Sec. 3, T. 22 S., R. 34 E.	320.00	B-158-3	12 $\frac{1}{2}$ %	Texaco Inc.	None	*New Mexico Electric Service Co. 40% TUCO INC. 40% Llano, Inc. 20%	16,60475
2	N $\frac{1}{2}$ Sec. 1, T. 22 S., R. 34 E.	327.16	E-9141	12 $\frac{1}{2}$ %	Llano, Inc.	None	New Mexico Electric Service Co. 40% TUCO INC. 40% Llano, Inc. 20	16.97627
3	S $\frac{1}{2}$ Sec. 34, T. 21 S., R. 34 E.	320.00	E-9659	12 $\frac{1}{2}$ %	Gulf Oil Corp.	None	**New Mexico Electric Service Co. 40% TUCO INC. 40% Llano, Inc. 20%	16.60475
4	N $\frac{1}{2}$ Sec. 34, T. 21 S., R. 34 E.	320.00	K-3592-1	12 $\frac{1}{2}$ %	Llano, Inc.	None	New Mexico Electric Service Co. 40% TUCO INC. 40% Llano, Inc. 20%	16.60475

GRAMA RI' ROW UNIT AGREEMENT

Tract No.	Description	No. Surface Acres	Lease No.	Basic Royalty	Lessee of Record	Overriding Royalty	Working Int. Owner and Percentage	Percentage Tract Participation
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5	S ² , NW ⁴ , N ² NE ⁴ , SE ² NE ⁴ Sec. 33, T. 21 S., R. 34 E.	600.00	E-7574-1	12 $\frac{1}{2}$ %	Wilson Oil Co. and Frances P. Bolton, dba Wyoming Oil Co.	Amoco Production Co. - .0102041 Myles A. Colligan .0005102 Estelle L. Lake .0004081 F. W. Lake .0002041 Mary E. Lake .0002041 M. A. Machris .0032653 C. L. Milburn .0005102 Wilson Oil Co. .0081314 Frances P. Bolton dba Wyoming Oil Co. .0081314 Llano, Inc. .0280611	**New Mexico Electric Ser- vice Co. 40% TUCO INC. 40% Llano, Inc. 20%	31.13389
---	---	--------	----------	--------------------	--	--	---	----------

6	SW ² NE ⁴ Sec. 33, T. 21 S., R. 34 E.	40.00	Fee	The Merchant Livestock Company - 67.63% of 12 $\frac{1}{2}$ % Don E. Gridley and wife and John E. Bosserman and wife - 32.37% of 12 $\frac{1}{2}$ %	Wilson Oil Co. and Frances P. Bolton, dba Wyoming Oil Co.	Amoco Production Co. - .0102041 Myles A. Colligan .0005102 Estelle L. Lake .0004081 F. W. Lake .0002041 Mary E. Lake .0002041 M. A. Machris .0032653 C. L. Milburn .0005102	New Mexico Electric Service Co. 40% TUCO INC. 40% Llano, Inc. 20%	2.07555
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NEW MEXICO STATE LAND OFFICE

CERTIFICATE OF APPROVAL

COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO

GRAMA RIDGE MORROW UNIT AGREEMENT

LEA COUNTY, NEW MEXICO

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated April 25, 1973, which has been executed, or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement, the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, and 7-11-48, New Mexico Statutes Annotated, 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 27th. day of August, 19 73.

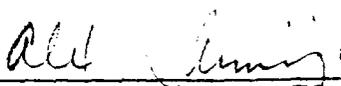

COMMISSIONER OF PUBLIC LANDS
of the State of New Mexico

EXHIBIT "B"
ROW UNIT AGREEMENT

GRAMA RI

Tract No.	Description	No. surface acres	Lease NO.	Basic Royalty	Lessee of Record	Overriding Royalty	Working Int. Owner and Percentage	Percentage Tract Participation
					Wilson Oil Co. .0081314			
					Frances P. Bolton dba Wyoming Oil Co. .0081314			
					Llano, Inc. .0280611			
								100.0000

Total 1,927.16

A Rights within vertical limits of the Morrow Sand formation between 12,720 and 13,257 feet.
 ** From the surface to the top of the Silurian.
 *** From 5,200 to 13,503 feet.

EXHIBIT "C"

Description	Surface Ownership	Acreage	Rental
W $\frac{1}{2}$ E $\frac{1}{2}$ Section 33, S $\frac{1}{2}$ S $\frac{1}{2}$ Section 34, Township 21 South, Range 34 East	The Merchant Livestock Company	320.00	\$ 320.00
W $\frac{1}{2}$, E $\frac{1}{2}$ E $\frac{1}{2}$ Section 33, N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$ Section 34, Township 21 South, Range 34 East	State of New Mexico	960.00	960.00
All Section 3, Township, 22 South, Range 34 East	State of New Mexico	647.16	647.16
		<u>1607.16</u>	
			<u>\$1927.16</u>

Partner:
Raptor/CPL

did we
approve
this?
↓ we have to?

SECOND AMENDMENT TO UNIT AGREEMENT
FOR THE OPERATION OF THE GRAMA
RIDGE-MORROW UNIT AREA
LEA COUNTY, NEW MEXICO

36

THIS SECOND AMENDMENT is made this 23rd day of May, 2001, by Raptor Natural Pipeline LLC.

PREMISES

1. As of April 25, 1973, the Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area ("Unit Agreement") was entered into by and between Llano, Inc. as unit operator and as a working interest owner and by Gulf Oil Corporation and Texaco Inc. as record title owners of oil and gas leases embracing lands in the unit area, which Unit Agreement was approved by the New Mexico Commissioner of Public Lands ("Commissioner") on August 27, 1973.

2. As of September 1, 1976, the Unit Agreement was duly amended ("First Amendment") by the parties thereto. The Commissioner approved the First Amendment on January 26, 1977. (Unless otherwise indicated, "Unit Agreement" hereinafter refers to the Unit Agreement as amended by the First Amendment.)

3. The unit area has continuously been used, since its creation to the time of this Second Amendment, for injection, storage and withdrawal of extraneous gas.

4. LG&E Natural Pipeline LLC is the successor in interest to Llano, Inc.

5. Effective December 1, 2000, LG&E Natural Pipeline LLC was acquired by Conoco Inc. Subsequently, the name of LG&E Natural Pipeline LLC was changed to Raptor Natural Pipeline LLC (hereinafter, "Raptor").

6. The Commissioner cancelled two oil and gas leases formerly committed to the Unit Agreement for non-payment of rentals. The Commissioner cancelled state lease no. K-3592-1, effective on January 13, 1999; and the Commissioner cancelled state lease no. E-7574-1, effective on February 4, 1999.

7. State lease no. K-3592-1 covered the N/2 of Section 34-21S-34E, comprising 320 acres more or less ("Section 34 Lands"). State lease no. E-7574-1 covered the N/2NE1/4, the SE1/4NE1/4, the W/2 and the SE1/4 of 33-21S-34E, comprising 600 acres more or less ("Section 33 Lands").

8. The Commissioner has issued two new state oil and gas leases covering the Section 33 Lands and the Section 34 Lands. On February 1, 2000, the Commissioner issued state oil and gas lease no. VO-5683, covering the Section 34 Lands; on January 1, 2000, the Commissioner issued VO-5682, covering the Section 33 Lands.

9. The Commissioner and Raptor agree that the Unit Agreement is unique and that it, among other things, conveys to the unit operator a right to inject, withdraw and store extraneous gas and that this right is in the nature of an easement that exists independently of the oil and gas leases that were initially unitized under the Unit Agreement.

10. In a letter dated July 21, 2000, addressed to Mr. William Carr, counsel for Nearburg Exploration Company and Yates Petroleum Corporation, the Commissioner's counsel stated that VO-5682 and VO-5683 were subject to LG&E's valid and existing right to inject, withdraw and store gas pursuant to the Unit Agreement.

11. A dispute arose between the operator, the lessees and working interest owners under leases VO-5682 and VO-5683, and the Commissioner regarding each of their respective interests and rights under the Unit Agreement and said oil and gas leases.

12. The purpose of this Second Amendment is to resolve the dispute between the Commissioner and the operator and to clarify certain aspects of the Unit Agreement.

AMENDMENT

NOW, THEREFORE, in consideration of the foregoing Premises, the Unit Agreement is hereby amended as follows:

1. Section 1 of the Unit Agreement shall remain the same, except that the legal description set forth on page 3 of the First Amendment shall be replaced by the following legal description:

Township 21 South, Range 34 East, N.M.P.M.

Section 33 – All

Section 34 – All

Township 22 South, Range 34 East, N.M.P.M.

Section 3 – All

Section 4 – Lot 1, Lot 2, S1/2NE1/4

containing 2,089.81 acres, more or less.

2. Section 10 of the Unit Agreement is entirely replaced by the following:

10. TRACT PARTICIPATION: For purposes of this agreement “extraneous gas” shall mean the total amount of gas from sources outside the unitized formation injected into the reservoir less the amount that has been withdrawn. Any gas produced in excess of the extraneous gas injected prior to and after the effective date hereof shall be considered as “indigenous gas”. Indigenous gas may only be produced from the unitized formation in accordance with an oil and gas lease that is unitized under the Unit Agreement. Subject to Section 5 of this Second Amendment, all such indigenous gas shall be apportioned to the tracts within the unit area in the proportions set forth on Exhibit “B” attached hereto, which is based on the percentage that the acreage covered by each tract bears to the total acreage within the unit area. Royalties shall be paid to the State of New Mexico under the terms and conditions provided in the respective leases, if any, on all indigenous gas allocated to such tracts. However, where such production of indigenous gas is allocated to state lands within the unit area (excluding the state lands located in Section 4-22S-34E) that are not subject to an oil and gas lease unitized under the Unit Agreement, the operator shall pay the state

for 100% of the indigenous gas produced and allocated to such unleased lands at the prevailing market price for gas of like quality, or on such other terms as may be agreed to by the Commissioner and the operator in writing.

3. Section 11(A) of the Unit Agreement shall remain the same, except that the last paragraph of Section 11(A), as set forth on pages 7 and 8 of the First Amendment, is entirely replaced by the following new paragraph:

Operator shall pay royalties under the terms and conditions provided in the respective oil and gas leases, if any, on $\frac{3}{4}$ of all liquid hydrocarbons which are separated from the gas withdrawn and allocated to the respective tracts (excluding state lands located in Section 4-22S-R34E) in accordance with the percentages of participation set forth on Exhibit "B". However, where such production of liquid hydrocarbons is allocated to state lands within the unit area that are not then covered by a state oil and gas lease (excluding state lands located in Section 4-22S-34E) unitized under the Unit Agreement, the operator shall compensate the state for 100% of the liquid hydrocarbons produced at the prevailing market price in Lea County, New Mexico, for liquid hydrocarbons of like quality, or upon such other terms as the Commissioner and the operator may agree to in writing. In addition, should the total cumulative British Thermal Units in the gas withdrawn exceed the total British Thermal Units in the gas injected ("BTU Enrichment"), then the operator shall pay the State of New Mexico royalties on the value of the BTU Enrichment based on the prevailing market price in Lea County for gas of like quality at the royalty rate provided in the applicable oil and gas lease or leases, if any; provided that if no lease unitized under the Unit Agreement is applicable, then the operator shall compensate the state for 100% of the BTU Enrichment that is allocated to such lands based on the prevailing market price in Lea County for gas of like quality. Payment for BTU Enrichment as set forth herein shall be made on an annual basis as determined by the cumulative chromatograph analyses.

4. The following new Section 25 is added to the Unit Agreement:

25. TERMINATION OF UNITIZED OIL AND GAS LEASES:

A. As to the lands within the Commissioner's jurisdiction, and notwithstanding any other provision of this Unit Agreement, the rights of the unit operator to inject, withdraw and store extraneous gas under this Unit Agreement shall

survive the cancellation, forfeiture or any other termination of any or all of the state oil and gas leases that are now or may become unitized hereunder. The existence, duration and nature of such injection, withdrawal and storage rights shall be determined strictly in accordance with the Unit Agreement, as amended hereby, and shall not depend on or arise under any state oil and gas lease.

B. If a state oil and gas lease encumbering state lands within the unit area terminates for any reason, nothing in this Unit Agreement shall preclude the Commissioner from issuing a new oil and gas lease to cover the same lands. However, so long as the Unit Agreement remains in effect, such new oil and gas leases shall be subject to the Unit Operator's valid, pre-existing rights to inject, withdraw and store extraneous gas pursuant to the Unit Agreement, as amended hereby.

5. In approving this Second Amendment, the Commissioner acknowledges that the federal government owns all of the oil and gas and potash that may underlie Section 4, Township 22 South, Range 34 East, N.M.P.M., of which the surface of Lot 1, Lot 2, S/2 NE/4 (NE/4 equivalent) is owned by the State of New Mexico. Therefore, and notwithstanding any other provision in the Unit Agreement, including this Second Amendment, the State shall not be entitled to compensation for indigenous gas, liquid hydrocarbons or BTU Enrichment that may be produced from Section 4, Township 22 South, Range 34 East, N.M.P.M. Furthermore, the state lands located in said Section 4 shall not be considered to determine tract participation under Section 10 of the Unit Agreement, but shall be considered only for purposes of calculating the annual storage fee and the injection and withdrawal fees under Section 11 (B) payable to the State by the unit operator.

6. Exhibits A, B and C to the Unit Agreement are amended in their entirety as shown on Exhibits A, B and C to this Second Amendment, respectively.

7. This Second Amendment shall become effective as to the state upon approval of the Commissioner.

8. Raptor is executing this Second Amendment after consultation with its counsel and the Commissioner. No presumption against either the unit operator or the Commissioner shall be entertained in the event of an ambiguity in this Second

Amendment. The Second Amendment is fully integrated and shall not be modified by any prior communication, written or oral.

9. Except as amended by this Second Amendment, the Unit Agreement shall remain unchanged.

10. The Premises above are a material part of this Second Amendment.

11. This Second Amendment may be executed in three or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned Unit Operator has caused this Second Amendment to be executed as of the date set opposite the signature of its authorized agent.

RAPTOR NATURAL PIPELINE LLC

By: Barbara A. Sheedlo
Name: Barbara A. Sheedlo
Title: Vice President

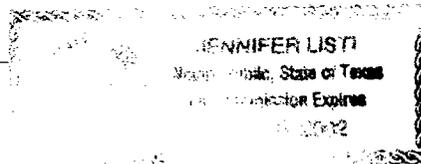
Dated: May 23, 2001

ACKNOWLEDGEMENT

STATE OF TEXAS)
) ss.
COUNTY OF HARRIS)

This instrument was acknowledged before me on May 23, 2001, by Barbara A. Sheedlo, Vice President of Raptor Natural Pipeline LLC, a New Mexico limited liability company.

Jennifer List
Notary Public



My Commission Expires:
7-6-2002

EXHIBIT "B"

GRAMA RIDGE MORROW UNIT AGREEMENT

Tract No.	Description	Lease No.	Basic Royalty	Lessee of Record	Working Int. Owner and Percentage	Percentage Tract Participation
1(A)	SW ¹ / ₄ Sec. 3, T. 22 S., R. 34 E.	B-158-19	12 ¹ / ₂ %	Apache Corp.	Raptor Natural Pipeline LLC 100%	8.30238
1(B)	SE ¹ / ₄ Sec. 3, T. 22 S., R. 34 E.	B-158-19	12 ¹ / ₂ %	Apache Corp.	Chaparral Energy, Inc. 100%	8.30237
2(A)	Lots 1, 2, S ¹ / ₂ NE ¹ / ₄ (NE ¹ / ₄) Sec. 3, T. 22 S., R. 34 E.	E-9141-2	12 ¹ / ₂ %	Apache Corp.	Chaparral Energy, Inc. 100%	8.50526
2(B)	Lots 3, 4, S ¹ / ₂ NW ¹ / ₄ (NW ¹ / ₄) Sec. 3, T. 22 S., R. 34 E.	E-9141-2	12 ¹ / ₂ %	Apache Corp.	Raptor Natural Pipeline LLC 100%	8.47101
3(A)	SW ¹ / ₄ Sec. 34, T. 21 S., R. 34 E	E-9659	12 ¹ / ₂ %	Chevron USA, Inc.	Raptor Natural Pipeline LLC 100%	8.30238
3(B)	SE ¹ / ₄ Sec. 34, T. 21 S., R. 34 E	E-9659	12 ¹ / ₂ %	Chevron USA, Inc.	EOG Resources Inc. 100%	8.30237
4.	N ¹ / ₂ Sec. 34, T. 21 S., R. 34 E.	V-5683	16.66%	Great Western Drilling Co.	Great Western Drilling Co. 25%, Continental Land and Fur Co. 18.75%, Nearburg	16.60475

EXHIBIT "B"
GRAMA RIDGE MORROW UNIT AGREEMENT

Tract No.	Description	Lease No.	Basic Royalty	Lessee of Record	Working Int. Owner and Percentage	Percentage Tract Participation
5.	S $\frac{1}{2}$, NW $\frac{1}{4}$, N $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 33, T. 21 S., R. 34 E.	V-5682-	116.66%	Natural Pipeline, LLC 100%	Raptor Natural Pipeline, LLC	31.13389
6.	SW $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 33, T. 21 S., R. 34 E	Fee	The Merchant Livestock Co. 67.63% of 12 $\frac{1}{2}$ %; Don E. Gridley and wife and John E. Bosserman and wife - 32.37% of 12 $\frac{1}{2}$ %	Wilson Oil Co. and Francis P. Bolton, dba Wyoming Oil	Raptor Natural Pipeline, LLC	2.07559
Exploration Co. LLC 56.25%						
Total						<u>100.0000</u>

EXHIBIT "C"

Description	Surface Ownership	Acreage	Rental
W $\frac{1}{2}$ E $\frac{1}{2}$ Section 33, S $\frac{1}{2}$ S $\frac{1}{2}$ Section 34, Township 21 South, Range 34 East	The Merchant Livestock Company	320.00	\$ 320.00
W $\frac{1}{2}$, E $\frac{1}{2}$ E $\frac{1}{2}$ Section 33	State of New Mexico	480.00	
N $\frac{1}{2}$ N $\frac{1}{2}$ S $\frac{1}{2}$ Section 34, Township 21 South, Range 34 East	State of New Mexico	480.00	960.00
All Section 3, Township 22 South, Range 34 East	State of New Mexico	647.16	647.16
Lots 1, 2, S/2 NE/4 Section 4, Township 22 South, Range 34 East	State of New Mexico	162.65	<u>162.65</u>
<u>Total</u>	The Merchant Livestock Company State of New Mexico	320.00 1,769.81	\$320.00 \$1,769.81

AGREEMENT FOR SUBSURFACE
STORAGE OF GAS, MORROW
FORMATION, GRAMA RIDGE AREA,
LEA COUNTY, NEW MEXICO

NO. 14-08-0001-14277

4

THIS AGREEMENT made and entered into as of the 27th day of November, 1975 with an effective date as of the 1st day of November, 1975, by and between the United States of America, acting by and through the Secretary of Interior, hereinafter referred to as the "United States", and Llano, Inc., a New Mexico corporation, with offices at Hobbs, New Mexico, hereinafter referred to as "Llano".

WITNESSETH:

WHEREAS, Llano is the Unit Operator of the Grama Ridge Morrow Unit Agreement covering all of Section 34, Township 21 South, Range 34 East and all of Section 3, Township 22 South, Range 34 East, Lea County, New Mexico which are lands of the State of New Mexico and which said agreement was approved by the Commissioner of Public Lands of the State of New Mexico on August 27, 1973, and which was entered into for secondary recovery and gas storage purposes, which is permitted under New Mexico statutes, and

WHEREAS, gas has been injected into the wells on said unit area since the effective date of said unit, and

WHEREAS, Llano is the owner and holder of the following describe oil and gas leases embracing lands of the United States issued under and pursuant to the provisions of the Mineral Leasing Act as amended:

(a) Oil and gas lease effective September 1, 1961 bearing serial number NM 058678, covering the NW Section 4, Township 21 South, Range 34 East, containing 320 acres, more or less;

(b) Oil and gas lease effective May 1, 1963, bearing serial number NM 0381970, covering the SW Section 4, Township 22 South, Range 34 East, containing 150 acres, more or less;

(c) Oil and gas lease effective March 4, 1958, bearing serial number NM 03612-A, covering the SE Section 4, Township 22 South, Range 34 East, containing 150 acres, more or less, and

ILLEGIBLE

WHEREAS, Llano is the operator of Federal GR-4 No. 1 gas well producing from the Morrow formation located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 4, Township 22 South, Range 34 East, being a part of the lands hereinabove described, and said well had reached its economic limit prior to the time gas was first injected into the wells on the Grama Ridge Morrow Unit Area, and

WHEREAS, the State of New Mexico is the owner of all the oil, gas and other minerals in and under and that may be produced from the Morrow formation of Pennsylvanian age under Section 33, Township 21 South, Range 34 East, except the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of said Section, which is fee land and the minerals underlying said 40 acres are owned 32.37% by LBM Cattle Company, Inc. and 67.63% by Merchant Livestock Company, and

WHEREAS, Llano is the operator of a gas well producing from the Morrow formation located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 33, known as the South Wilson Deep Unit No. 1 well, and

WHEREAS, it is believed that the Morrow gas reservoir into which gas is being injected in the wells on the Grama Ridge Morrow Unit covers not only the two sections within said unit but also Section 4, Township 22 South, Range 34 East and Section 33 Township 21 South Range 34 East, and

WHEREAS, Llano ^{THX}proposes to enter into a separate agreement with the Commissioner of Public Lands of the State of New Mexico for the subsurface storage of gas underlying said Section 33 which will be supplemental to the storage of gas under and pursuant to the Grama Ridge Morrow Unit Agreement, and

WHEREAS, Llano is desirous of utilizing the Morrow formation underlying Section 4, Township 22 South, Range 34 East for the subsurface storage of gas regardless of the original source of such gas which storage would be supplemental to and in addition to the area covered by the Grama Ridge Morrow Unit Agreement and the area covered

by the subsurface gas storage agreement which Llano proposes to enter into with the Commissioner of Public Lands of the State of New Mexico covering portions of Section 33, Township 21 South, Range 34 East, and

WHEREAS, Llano desires to store said gas under Section 4 in the vertical interval between 12,778 feet and 13,255 feet below the surface in the Morrow formation of Pennsylvanian age as shown by the Gamma Ray-Sonic Log in connection with the Federal GR-4 No. 1 well hereinafter referred to as the "gas storage reservoir area" and

WHEREAS, the Mineral Leasing Act as amended (Mineral Leasing Act Revision of 1960) provides that:

"The Secretary of the Interior, to avoid waste or to promote conservation of natural resources, may authorize the subsurface storage of oil or gas, whether or not produced from federally owned lands, in lands leased or subject to lease under this Act".

NOW, THEREFORE, it is mutually agreed as follows:

SECTION 1: The United States, in consideration of the conditions and covenants to be observed as herein set forth, does hereby authorize the exclusive use by Llano of the gas storage reservoir area or underground gas storage purposes and does hereby exclusively authorize Llano to store gas and at will to inject gas into and withdraw gas from said storage area. Llano shall be under no obligation to inject or withdraw any particular quantity of gas other than such gas as it shall, in its sole discretion, deem advisable. The United States does hereby authorize Llano to enter upon the surface of the said gas storage reservoir area to the extent that said surface is owned by the United States for the purpose of injecting gas into said storage area and withdrawing such gas by means of any well now existing or which may hereafter be drilled as provided by Section 2 hereof.

SECTION 2: Llano shall have the right to rework or recondition the well now located upon the gas storage reservoir area or to drill additional wells to inject gas into or produce gas from the gas

not withdraw

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storage reservoir area to the extent that such work shall be approved by the Oil and Gas Supervisor of the United States Geological Survey as necessary or incident to the rights granted to Llano pursuant to this agreement. Llano agrees to conduct all operations herein authorized for the lands subject to this agreement in accordance with the Oil and Gas Operating Regulations generally applicable to federally owned lands (30 CFR 221). Subject to any necessary protection of environmental values as determined by the Supervisor, the United States does hereby authorize Llano to construct, install, maintain, and remove structures, pipelines, casing, drips, valves and other appliances necessary, useful or convenient for the purpose of this agreement.

SECTION 3: This agreement shall remain in force and effect for a period of five years and so long thereafter as Llano shall continue to use the lands for underground gas storage purposes unless sooner terminated as provided in Section 9 hereof, and the leases hereinabove described shall be and are hereby extended for the life of this agreement.

SECTION 4: Nothing in this agreement shall be construed as limiting the right of the oil and gas lessee to relinquish at any time his oil and gas lease covering all or part of the lands either within or outside the gas storage reservoir area.

Should a federal lease covering lands within the gas storage reservoir area be relinquished the United States reserves the right to issue a new lease or leases therefor, subject to the condition that the Morrow formation shall be excluded from such new lease or leases and provided further that all operations conducted thereon shall be done in a good and workmanlike manner so as to prevent the loss of gas out of the Morrow formation underlying the gas storage reservoir area.

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If Llano demonstrates to the satisfaction of the Area Oil and Gas Supervisor of the United States Geological Survey that stored gas is migrating from the Morrow formation to other formations or that stored gas is expanding beyond the limits of the gas storage reservoir area, then with the concurrence of the affected lessees (if other than Llano) under outstanding oil and gas leases covering such lands and/or formations, this agreement may be amended to include such lands and/or formations subject to the same terms and conditions then applicable to the lands and formations previously committed to this agreement.

In the event that it should be determined that lands and formations subject to this agreement are no longer needed for the purposes herein stated, said lands may be eliminated from the gas storage reservoir area by filing a request and supporting geologic and engineering data, with a suggested effective date, with the Area Oil and Gas Supervisor.

SECTION 5: All stored gas shall be measured when injected into and withdrawn from storage, and a record thereof shall be kept. Llano agrees to render to the United States on or before thirty days after each calendar year quarter a statement by Llano showing the total amount of gas injected into and withdrawn from said gas storage reservoir during that preceding calendar year quarter. The amount of gas reported as injected and withdrawn each quarter shall be computed at a standard pressure of 15.025 pounds per square inch absolute and a standard temperature of 60 degrees Fahrenheit, regardless of the pressure and temperature at which the gas was actually measured. Said statement herein provided for shall be filed in duplicate with the Area Oil and Gas Supervisor of the United States Geological Survey.

SECTION 6: Llano agrees after execution and the effective date of the within agreement, either:

(a) To furnish forthwith, and maintain at all times thereafter, as may be required by the United States, a bond in the penal sum of \$15,000.00 with approved corporate surety, conditioned upon compliance with the terms of this agreement; or

(b) To deposit with the United States security in the sum of \$15,000.00 in such form as is acceptable to the United States to guarantee compliance with the terms of this agreement.

SECTION 7: As of the effective date of this agreement, the economically recoverable reserves of native natural (primary) gas to 500 psi shut-in tubing pressure remaining in that part of the reservoir underlying Section 4 was zero (0) MCF. As of the effective date of this agreement ^{Nov 1, 1975} Llano had injected a net total of 4,861,773 MCF of extraneous gas into the wells on the Grama Ridge Morrow Unit. For the purposes of this agreement it is assumed that 1/4 of said net injected gas has migrated to that portion of the reservoir underlying Section 4 and therefore Llano agrees to pay to the United States upon execution of this agreement for its (lessor's) share as royalty a lump sum of \$27,985.57.

Twenty-five percent of the previously injected gas referred to above is economically recoverable from the federal leases embracing Section 4. Said twenty-five percent, being 1,215,443 MCF, may be withdrawn from the reservoir without the payment of additional royalty or withdrawal fees. It is further agreed that the first 4,861,773 MCF of gas withdrawn after the effective date hereof shall be considered as that which was injected prior to such date.

For the purposes hereof, "extraneous gas" shall mean the total amount of gas from other sources injected into the reservoir less the amount which has been withdrawn. Any gas produced in excess of the extraneous gas injected prior to or after the effective date hereof shall be considered as "indigenous gas". All such indigenous gas shall be apportioned to the tracts within the gas storage project in the same ratio as the acreage interest of each tract bears to the

total acreage within the gas storage project and as to the federal leases in Section 4 shall be subject to royalty at the rate specified in the respective leases. The production of all indigenous gas shall be pursuant to such conditions and formulas as may be prescribed or approved by the Supervisor of the Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

SECTION 8: Llano agrees to pay the United States an injection fee of \$.0025 per MCF and a withdrawal fee of \$.01 per MCF on 1/4 of all gas injected or withdrawn from the reservoir through any wells located on the Grama Ridge Unit Area or on Section 33, Township 21 South, Range 34 East or Section 4, Township 22 South, Range 34 East during each calendar quarter; provided, however, that no withdrawal fee shall be required on withdrawn gas considered to be indigenous reservoir gas. Such quarterly injection and withdrawals fees shall be paid on or before 30 days after the end of each calendar quarter. Llano further agrees to pay an advance annual storage fee of \$640.00. Such payment represents a fee of \$1.00 per acre and shall be paid not later than 30 days after the effective date hereof and on each subsequent anniversary date.

SECTION 9 (a): The amount of the injection, withdrawal and storage fees set out in Section 3 hereof shall be subject to renegotiation 10 years from the effective date hereof and at the end of successive 10 year periods thereafter. In the event of a failure to renegotiate new fees on terms mutually acceptable to both parties, Llano shall forfeit its right to inject new gas but the payment of withdrawal and storage fees at the prior rates shall continue and Llano shall have not more than 10 years from such date of renegotiation in which to complete the withdrawal of gas and to remove its facilities, at the end of which period this agreement shall terminate. Any gas remaining in the Morrow formation beneath the federal tracts or any facilities not removed from the surface of the federal lands at the termination of this agreement shall become the property of the United States.

(b) The United States reserves the right to terminate this agreement at any time if Llano shall violate and shall continue to violate any of the terms, conditions or provisions of this agreement for more than 30 days after receipt by Llano of notice of such violation by registered or certified mail from the United States.

SECTION 10: In connection with the performance of work under this agreement, Llano agrees to comply with all the provisions of Section 202 (1) to (7) inclusive, of Executive Order 11246 (30 F.R. 12319) as amended, which are hereby incorporated by reference in this agreement.

SECTION 11: Llano agrees to keep open at all reasonable times for the inspection of any duly authorized officer of the United States, the premises covered hereby and all wells, improvements, machinery and fixtures thereon, and all books, accounts, meter charts and records pertaining to operations hereunder or the payments herein provided.

SECTION 12: It is understood and agreed that the United States expressly reserves the right to utilize the surface, lease, sell or otherwise dispose of, the surface of any of the above described lands so far as said surface is owned by the United States and is not necessary for the use of Llano in the injecting, storing and removing of gas therefrom.

SECTION 13. It is also further agreed that no member of or delegate to Congress or resident commissioner after his election or appointment or either before or after he has qualified and during his continuance in office, and that no officer, agent or employee of the Department of the Interior shall be admitted to any share or part in this agreement or derive any benefit that may arise therefrom, and the provisions of Section 3741 of the Revised Statutes of the United States, as amended (41 U.S.C. Sec. 22) and Sections 431, 432 and 433, Title 13 U. S. Code, relating to contracts, enter into and form a part of this agreement so far as the same may be applicable.

SECTION 14: It is further covenanted and agreed that each obligation hereunder shall extend to and be binding upon and every benefit hereof shall inure to, the successors or assigns of the respective parties hereto.

IN WITNESS WHEREOF, the United States, acting by and through the Secretary of the Interior, and Llano by its president and secretary, hae executed the foregoing instrument and said Llano has caused its corporate seal to be affixed on the date of execution.

THE UNITED STATES OF AMERICA

By Kent Drizzell
Secretary of the Interior

ATTEST:

Larry L. Greig
Assistant Secretary
2/2/76

LLANO, INC.

BY Donald S. Greig
President

STATE OF NEW MEXICO)
 : ss
COUNTY OF LEA)

The foregoing instrument was acknowledged before me this 25th day of February, 1976 by Donald S. Greig, President of Llano, Inc., a New Mexico corporation, on behalf of said corporation.

My Commission Expires:
Jan 14, 1978

Donie Males
Notary Public

AMENDMENT TO THE AGREEMENT
FOR SUBSURFACE STORAGE OF GAS, MORROW FORMATION,
GRAMA RIDGE AREA, LEA COUNTY, NEW MEXICO
AGREEMENT NO. 14-08-0001-14277

THIS AMENDMENT amends the Agreement For The Subsurface Storage of Gas, Morrow Formation, Grama Ridge Area, Lea County, New Mexico, Agreement No. 14-08-0001-14277. This amendment is made and entered into as of this 15th day of April 1981, with an effective date of 1st day of April 1981, by and between the United States of America, acting by and through the Secretary of the Interior, hereinafter referred to as the "United States", and Llano, Inc., a New Mexico corporation whose principal place of business is Hobbs, New Mexico, hereinafter referred to as "Llano".

WHEREAS, there exists an Agreement For Subsurface Storage of Gas, Morrow Formation, Grama Ridge Area, Lea County, New Mexico, Agreement No. 14-08-0001-14277, made and entered into as of the 24th day of November, 1975, with an effective date of the 1st of November, 1975, by and between the United States of America, acting by and through the Secretary of Interior, and Llano, Inc., a New Mexico corporation, hereinafter the "Storage Agreement", and

WHEREAS, Llano is the unit operator under the Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area covering all of Sections 33 and 34, T21S, R34E, and all of Section 3, T22S, R34E, Lea County, New Mexico, which are lands of the State of New Mexico, and which said Agreement was approved by the Commissioner of Public Lands of the State of New Mexico on August 27, 1973, as amended by Amendment dated September 1, 1976, to include the above referenced Section 33, and

FURTHER, such Unit Agreement provides for secondary recovery and gas storage purposes, all of which is permitted under New Mexico statutes, and

WHEREAS, Section 4, T22S, R34E, was added to the Grama Ridge Morrow Unit Area by approval through the Secretary of Interior of the Agreement For Subsurface Storage Of Gas, Number 14-08-0001-14277, and

WHEREAS, Section 4 of the Storage Agreement provides, among other things, that the Storage Agreement may be amended to include other lands and formations to the gas storage reservoir area, subject to the same terms and

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conditions then applicable to the lands and formations previously committed to the Storage Agreement, if Llano demonstrates to the satisfaction of the Deputy Conservation Manager, Oil & Gas, United States Geological Survey that stored gas is migrating from the Morrow formation to other formations or that stored gas is expanding beyond the limits of the gas storage reservoir area.

WHEREAS, Llano is the owner and holder of the following oil and gas leases embracing lands of the United States issued under the Mineral Leasing Act of 1920 as amended:

a. Oil and gas lease effective April 1, 1958, bearing serial number NM-033312 covering the W $\frac{1}{2}$ and SE $\frac{1}{4}$ of Section 10, T22S, R34E, and containing 480 acres, more or less.

b. Oil and gas lease effective April 1, 1960, bearing serial number NM-049943 covering the NE $\frac{1}{4}$ of Section 10, T22S, R34E, and containing 150 acres, more or less.

WHEREAS, Llano is the operator of a gas well producing from the Morrow formation located in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 10, known as the Llano-Government "A" No. 1, through this amendment, desires to add the Llano-Government "A" No. 1 well and the 640 acres of Section 10 to the Agreement for The Subsurface Storage Of Gas in accordance with Section 4 of the original Agreement.

WHEREAS, Llano acquired the interest of The Superior Oil Company in the Government "A" No. 1 well effective February 1, 1978, said well being dedicated to interstate commerce by Contract dated June 13, 1966, between The Superior Oil Company and Phillips Petroleum Company and Contract dated August 31, 1964, between Phillips Petroleum Company and El Paso Natural Gas Company. Subsequent to the acquisition of the Government "A" No. 1 well, Llano, through geological and reservoir studies, determined that the well, which produces from the Morrow formation, was receiving gas by migration from the Grand Ridge Storage Unit. Llano, with the desire to add the Section 10 acreage to the unit area, then filed an application with the Federal Energy Regulatory Commission, Docket No. 01-79- pursuant to Section 7(b) of the Natural Gas Act and Sections 157.30 and 158.7 FERC regulations, requesting permission to abandon sale of gas to Phillips Petroleum Company and subject to the same. On June 13, 1978, the FERC issued an order

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Order issued October 29, 1979, by the FERC, hereinafter "FERC Order", subject to the stipulations that the remaining recoverable reserves of 413 MMCF of gas (at 15.025 psia) as of September 1, 1978, shall be delivered to Phillips from the Government "A" No. 1 well or from the Grama Ridge Storage Project at rates up to 750 MCFPD until the remaining reserves have been delivered and Phillips shall pay for the gas delivered at the same price per MCF which would have been paid under the June 13, 1966, percentage of proceeds contract.

NOW THEREFORE, it is mutually agreed as follows:

SECTION 1: Section 8 of the Agreement For Subsurface Storage Of Gas shall be amended to read: Llano agrees to pay the United States an injection fee of \$.0025 per MCF and a withdrawal fee of \$.01 per MCF on two-fifths (2/5ths) of all gas injected or withdrawn from the reservoir through any wells located on the Grama Ridge Unit Area or on Section 33, Township 21 South, Range 34 East, or Section 4, Township 22 South, Range 34 East, or Section 10, Township 22 South, Range 34 East, during each calendar quarter; provided, however, that no withdrawal fee shall be required on withdrawn gas considered to be indigenous reservoir gas. Such quarterly injection and withdrawal fees shall be paid on or before 30 days after the end of each calendar quarter. Llano further agrees to pay an advance annual storage fee of \$1,280.00. Such payment represents a fee of \$1.00 per acre and shall be paid not later than 30 days after the effective date hereof and on each subsequent anniversary date thereafter.

SECTION 2: Llano agrees to prepay the royalty due on the balance of the 413 MMCF remaining recoverable reserves which have not been produced from the Government "A" No. 1 well as of the effective date of this Amendment, such prepayment to be based on the gas price as set forth in the FERC Order.

SECTION 3: All other provisions of the Agreement For Subsurface Storage Of Gas, Morrow Formation, Grama Ridge Area, Lea County, New Mexico, No.

14-08-0001-14277, shall remain unchanged.

IN WITNESS WHEREOF, the United States, acting by and through the Secretary of the Interior, and Llano, by its President and Secretary-Treasurer, have executed the foregoing instrument and Llano has caused its corporate seal to be affixed on the date of execution.

THE UNITED STATES OF AMERICA

By Ronald Paul Hodel AUG 17 1981
Acting Secretary of the Interior

LLANO, INC.

^{sub} By [Signature]
President

ATTEST:
[Signature]
Secretary-Treasurer

STATE OF NEW MEXICO)
COUNTY OF LEA) SS

The foregoing instrument was acknowledged before me this 15th
day of April, 1981, by Donald L. Garey, President
of Llano, Inc., a New Mexico corporation, on behalf of said corporation.



Donald L. Garey
Notary Public

My Commission Expires:

8-30-82

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(LANGLIE-MATTIX "B-4" PENROSE (QUEEN) UNIT - Cont'd.)

(3) That the unit operator shall file with the Commission an executed original or executed counterpart of the unit agreement within 30 days after the effective date thereof; that in the event of subsequent joinder by any party or expansion or contraction of the unit area, the unit operator shall file with the Commission within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(4) That this order shall become effective upon the approval of said unit agreement by the Director of the United States Geological Survey; that this order shall terminate ipso facto upon the termination of said unit agreement; and that the last unit operator shall notify the Commission immediately in writing of such termination.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

GRAMA RIDGE MORROW UNIT
Lea County, New Mexico

Order No. R-4473, Approving the Grama Ridge Morrow Unit Agreement, Lea County, New Mexico, January 29, 1973.

Application of Llano, Inc. for Approval of the Grama Ridge Morrow Unit Agreement, Lea County, New Mexico.

CASE NO. 4895
Order No. R-4473

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 o'clock a.m. on January 17, 1973, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 29th day of January, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Llano, Inc., seeks approval of the Grama Ridge Morrow Unit Agreement covering 1287.16 acres, more or less, of state lands described as follows:

LEA COUNTY, NEW MEXICO
TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM
Section 34: All

TOWNSHIP 22 SOUTH, RANGE 34 EAST, NMPM
Section 3: All

(3) That approval of the proposed unit agreement should promote the prevention of waste and the protection of correlative rights within the unit area.

IT IS THEREFORE ORDERED:

(1) That the Grama Ridge Morrow Unit Agreement is hereby approved.

(2) That the plan contained in said unit agreement for the development and operation of the unit area is hereby approved in principle as a proper conservation measure; provided however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation which is now, or may hereafter be, vested in the Commission to supervise and control operations for the exploration and development of any lands committed to the unit and production of oil or gas therefrom.

(3) That the unit operator shall file with the Commission an executed original or executed counterpart of the unit agreement within 30 days after the effective date thereof; that in the event of subsequent joinder by any party or expansion or contraction of the unit area, the unit operator shall file with the Commission within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(4) That this order shall become effective upon the approval of said unit agreement by the Commissioner of Public Lands for the State of New Mexico; that this order shall terminate ipso facto upon the termination of said unit agreement; and that that last unit operator shall notify the Commission immediately in writing of such termination.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

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CASE NO. 4896
Order No. R-4491

APPLICATION OF LLANO, INC.,
FOR GAS INJECTION, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 17, 1973, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 16th day of March, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Llano, Inc., is the operator of the Grama Ridge Morrow Unit Area comprising some 1280 acres, more or less, of lands in Section 34, Township 21 South, Range 34 East, NMPM, and Section 3, Township 22 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) That the applicant proposes to inject purchased gas for storage purposes into its State GRA Well No. 1 located in Unit E of the aforesaid Section 3 and its State GRB Well No. 1 located in Unit L of the aforesaid Section 34, injection to be into the perforated intervals from 12,827 to 12,847 feet, 12,98 to 12,985 feet, and 13,010 to 13,021 feet in said State GRA Well No. 1, and the perforated intervals from 12,921 to 12,934 feet, 13,020 to 13,022 feet, and 13,051 to 13,073 feet in said State GRB Well No. 1, all of said perforations being into irregular and non-continuous sands embedded in the shale matrix of the Morrow formation, Grama Ridge Morrow Gas Pool.

(4) That while there are other wells than the aforesaid State GRA Well No. 1 and State GRB Well No. 1 producing from the Morrow formation of said Grama Ridge-Morrow Gas Pool, the evidence indicates that said other wells are producing from separate sand stringers not in communication with the proposed injection zones.

(5) That the applicant proposes to initiate and conduct its gas storage operations in the subject wells in accordance with a 3-phase plan as follows:

Phase I - General conditioning of downhole well equipment and installation of surface, testing and metering facilities. Pilot test in order to determine by pressure analysis the limits of the Morrow reservoir and the compatibility for gas storage.

Phase II - First installation of permanent compression equipment to expedite fill-up operation after soundness of underground Morrow reservoir is established.

Phase III - Installation of additional compression after evaluation of Phase II has corroborated the reservoir limits as determined in the Phase I evaluation and final fill-up to 2500 psig surface pressure.

(6) That the injection of gas into the subject wells for gas storage purposes, and the subsequent withdrawal of such gas for transportation to market, will not cause waste nor violate correlative rights, and should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, Llano, Inc., is hereby authorized to inject gas for storage purposes, and to subsequently withdraw such gas, in the perforated intervals from 12,827 to 12,847 feet, 12,984 to 12,985 feet, and 13,010 to 13,021 feet in its State GRA Well No. 1 located in Unit E of Section 3, Township 22 South, Range 34 East, NMPM, and in the perforated intervals from 12,921 to 12,934 feet, 13,020 to 13,022 feet, and 13,051 to 13,073 feet in its State GRB Well No. 1 located in Unit L of Section 34, Township 21 South, Range 34 East, NMPM, Grama Ridge-Morrow Gas Pool, Lea County, New Mexico.

(2) That the applicant shall notify the Santa Fe and Hobbs offices of the Commission and the Commissioner of Public Lands for the State of New Mexico upon commencement of each phase of operations as outlined in Finding No. (5) above. Further, that the applicant shall file monthly reports of gas injected and gas withdrawn as required by Rule 405 of the Commission Rules and Regulations.

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Case No. 4896
Order No. R-4491

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

BRUCE KING, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINES AND
LANDS
OIL CONSERVATION COMMISSION

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IN THE MATTER OF THE PETITION
CALLED BY THE OIL CONSERVATION
COMMISSION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 8008
ORDER NO. 8-7582

APPLICATION OF LLANO, INC. FOR
SPECIAL WELL TESTING REQUIREMENTS
OR EXPANSION OF ITS GAS STORAGE
PROJECT, LEA COUNTY, NEW MEXICO.

SECTION 5 WELL

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on May 15, 1984, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 20th day of June, 1984, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That the applicant, LLANO, INC., is the operator of the Statewide Natural Gas Storage Project which was approved by the Commission on January 16, 1982, by Order No. 8-4473 and has been subsequently expanded to include the following described state lands:

(2) That the applicant, LLANO, INC., is the operator of the Statewide Natural Gas Storage Project which was approved by the Commission on January 16, 1982, by Order No. 8-4473 and has been subsequently expanded to include the following described state lands:

LEA COUNTY, NEW MEXICO, MORE

SECTION 5, T1N 36S, R10E, RANGE 10 EAST, T12N

SECTION 5, T1N 36S, R10E, RANGE 10 EAST, T12N

(3) That the applicant, LLANO, INC., is the operator of the Statewide Natural Gas Storage Project which was approved by the Commission on January 16, 1982, by Order No. 8-4473 and has been subsequently expanded to include the following described state lands:

That the Commission on March 10, 1954, entered on March 10, 1954.

(4) That Class injects gas into the Monroe formation in the Oak Cliff Well No. 1 (formerly State Gas Well No. 1) located in Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, and the Oak Cliff Well No. 2 (formerly State Gas Well No. 1) located in Unit 1 of Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, and the Commission on March 10, 1954, entered on March 10, 1954.

(5) That I & S Oil Company proposes to drill a Federal Well No. 1 at a location 600 feet from the south line and 100 feet from the east line of Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, which directly overlaps the Class storage well.

(6) That the boundaries of the Grand Ridge storage reservoir cannot be precisely determined.

(7) That I & S Oil Company proposes to test and possibly complete the Federal Well No. 1 in the same Monroe interval into which Class injects natural gas for storage and to also drill a second well at a location 600 feet from the south line and 100 feet from the east line of Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, which directly overlaps the Class storage well.

(8) That I & S Oil Company proposes to drill a Federal Well No. 2 at a location 600 feet from the south line and 100 feet from the east line of Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, which directly overlaps the Class storage well.

(9) That I & S Oil Company proposes to drill a Federal Well No. 3 at a location 600 feet from the south line and 100 feet from the east line of Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, which directly overlaps the Class storage well.

(10) That I & S Oil Company proposes to drill a Federal Well No. 4 at a location 600 feet from the south line and 100 feet from the east line of Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, which directly overlaps the Class storage well.

(11) That I & S Oil Company proposes to drill a Federal Well No. 5 at a location 600 feet from the south line and 100 feet from the east line of Section 6, Township 22 South, Range 4 East, T12N, R10E, S22T, County of Tarrant, State of Texas, which directly overlaps the Class storage well.

(1) The well shall be plugged with cement to the top of the well casing and the well shall be abandoned.

(2) Ilano will furnish a copy of the well log of the well to L & W Oil Company.

PROVIDED FURTHER, that L & W Oil Company will not run casing in the well until Ilano has run the well log on the well and until L & W Oil Company and the Oil Conservation Division's District Office of the State of New Mexico have been notified in accordance with the provisions of paragraph (2) of this order.

(3) That if it is established by the data obtained from the well log that the known strata in the said L & W well have pressures similar to those of Ilano's gas storage project, L & W Oil Company shall not produce gas from those strata and shall demonstrate this fact to the satisfaction of Ilano, Inc. and the District Office of the Oil Conservation Division located in Hobbs, New Mexico.

(6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the 14th day of May 1954.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

W. H. HARRIS, Member

[Handwritten Signature]
W. H. HARRIS, Member
[Handwritten Signature]
W. H. HARRIS, Member

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
811 South First, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

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Form C-101
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

Operator Name and Address Nearburg Producing Company 3300 N A St., Bldg 2, Suite 120 Midland, TX 79705		OGRID Number 015742
Property Code 25382		API Number 30-025-34948
Property Name Grama Ridge East 34 State		Well No. 1

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
H	34	21S	34E		1548	North	990	East	Lea

Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
Proposed Pool 1 Grama Ridge Morrow, East					Proposed Pool 2				

Work Type Code N	Well Type Code G	Cable/Rotary R	Lease Type Code S	Ground Level Elevation 3689
Multiple No	Proposed Depth 13700	Formation Morrow	Contractor Patterson	Spud Date 03-05-00

Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17-1/2"	13-3/8"	48#	1300'	800 sxs	Circ to surface
12-1/4"	9-5/8"	24# & 32#	5700'	2000 sxs	Circ to surface
8-3/4"	5-1/2"	17# & 20#	13700'	1500 sxs	

Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Propose to drill the well to sufficient depth to evaluate the Morrow formation. After reaching TD, logs will be run and casing set if the evaluation is positive. Perforate, test and stimulate as necessary to establish production.

Acreage dedication is 320 acres; N/2 of Section 34.

Permit Expires 1 Year From Approval
Date Unless Drilling Underway

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.		OIL CONSERVATION DIVISION	
Signature: <i>Kim Stewart</i>	Approved By: <i>Hay W. White</i>		
Printed name: Kim Stewart	Title: FIELD ENGINEER		
Title: Regulator/Analyst	Approval Date: 02-23-00	Expiration Date:	
Date: 02-23-00	Phone: 915/686-8235	Conditions of Approval: Attached: <input type="checkbox"/>	

DISTRICT II
 P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
 Rio Brazos Rd., Artesia, NM 87419

OIL CONSERVATION DIVISION
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

DISTRICT IV
 P.O. BOX 2088, SANTA FE, N.M. 87504-2088

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-34948	Pool Code 77690	Pool Name Gramma Ridge Morrow, East
Property Code 25382	Property Name GRAMA RIDGE EAST 34 ST.	Well Number 1
OGRID No. 15742	Operator Name NEARBURG PRODUCING COMPANY	Elevation 3689

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	34	21 S	34 E		1548	NORTH	990	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 320	Joint or Infill N	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Kim Stewart
 Signature
 Kim Stewart
 Printed Name
 Regulatory Analyst
 Title
 February 23, 2000
 Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

FEBRUARY 21, 2000

Date Surveyed _____ LMP
 Signature & Seal of Professional Surveyor

Ronald J. Edson 2/22/2000
 90-11-0259

Certificate No. RONALD J. EDSON 3239
 GARY EIDSON 12641
 MACON-McDONALD 12185

19-10-31. [Filing and recording of leases, other instruments and assignments with commissioner; constructive notice; recording in county waived.] (1925)

Statute text

All leases and other instruments executed or issued by the commissioner of public lands, hereinafter referred to as the commissioner, pertaining to oil and gas rights in state lands, and including assignments of such rights when approved by the commissioner, shall be made in duplicate and one copy thereof retained in the files of the state land office and recorded in full by the commissioner in suitable books provided by him and kept for such purpose. Such filing and recording shall be constructive notice to all persons of the contents of such instruments from the date of such filing and it shall not be necessary to record such instruments in the county where the lands affected thereby are located, and the filing and recording in the office of the commissioner as provided herein shall have the same force and effect as the filing and recording of such instruments in the county where the lands affected thereby are located would now have under existing statutes.

History

History: Laws 1925, ch. 68, § 1; C.S. 1929, § 132-501; 1941 Comp., § 8-1124; 1953 Comp., § 7-11-25.

Annotations

Cross references. - For recording of certain agricultural and grazing lease or contract assignments in office of commissioner, see 19-7-39 NMSA 1978.

For recording of instruments effecting real estate and giving of constructive notice thereby generally, see 14-9-1, 14-9-2 NMSA 1978.

For recording of assignment made for benefit of creditors, see 56-9-10 NMSA 1978.

Assignment of partial lease filed with county, not state, offices. - Because an assignment of a partial lease is not recognized by the commissioner of public lands, pursuant to 19-10-13 NMSA 1978, the assignment cannot be filed in the state land office, but must be filed in the appropriate county clerk's office; there it provides constructive notice of its contents. Angle v. Slayton, 102 N.M. 521, 697 P.2d 940 (1985).

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NEW MEXICO STATE LAND OFFICE

CERTIFICATE OF APPROVAL (Second Amendment to Unit Agreement)

COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO

Raptor Natural Pipeline LLC
Second Amendment to the Unit Agreement
For the Operation of the
GRAMA RIDGE-MORROW UNIT AREA
LEA COUNTY, NEW MEXICO

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the Second Amendment to the Unit Agreement for the Operation of the Grama Ridge-Morrow Unit Area that is described within the referenced Agreement, dated May 23, 2001, which said Agreement has been executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement, the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the State, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 19-10-45, 19-10-46, 19-10-47, New Mexico Statutes Annotated, 1978 Compilation, I, the undersigned Commissioner of Public Lands of the State of New Mexico, do hereby consent to and approve the Second Amendment to the Unit Agreement; provided, however, that such consent and approval being limited and restricted to such lands within the Unit Area, which are effectively committed to the Unit Agreement as of this date, and further, that leases insofar as the lands covered thereby committed to this Unit Agreement shall be and the same are hereby amended to conform with the terms of such Second Amendment, and said leases shall remain in full force and effect in accordance with the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 19TH day of AUGUST 2002.


COMMISSIONER OF PUBLIC LANDS
of the State of New Mexico

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**Grama Ridge Morrow Unit
Lea County, New Mexico**

Plan of Operation

This is a revised Plan of Operation as required, from time to time, pursuant to Section 9 of the UNIT AGREEMENT FOR THE OPERATION OF THE GRAMA RIDGE MORROW UNIT AREA, LEA COUNTY, NEW MEXICO dated April 25, 1973, as amended (the "Unit Agreement"), for the Grama Ridge Morrow Unit (hereinafter, "Unit").

Effective December 1, 2000, Conoco Inc. acquired LG&E Natural Pipeline LLC, successor in interest to Llano, Inc. Subsequently, the name of LG&E Natural Pipeline LLC was changed to Raptor Natural Pipeline LLC (hereinafter, "Unit Operator").

This Plan of Operation constitutes the operating procedures and conditions in which the Unit Operator will continue to operate the Unit pursuant to the following:

Grama Ridge Morrow Unit:

- Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area
Lea County, New Mexico
By and between the State of New Mexico and Llano, Inc. (among others)
Effective April 25, 1973

Unit Area: Section 34, T21S, R34E - All 640 acres
 Section 3, T22S, R34E - All 647.16 acres

Unitized Formation: Morrow sands which is the same zone as the top and bottom of which were encountered at log depths of 12,722 feet and 13,208 feet in the Shell Oil Company State GRA Well No. 1.

Wells: Shell Oil Company State GRA Well No. 1 – SW1/4NW1/4 Section 3, T22S, R34E
 Shell State GRB Well No. 1 – NW1/4SW1/4 Section 34, T21S, R34E

- Amendment - Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area
Lea County, New Mexico
By and between the State of New Mexico and Llano, Inc. (among others)
Effective September 1, 1976

Unit Area: Added - Section 33, T21S, R34E - All 640 acres

Wells: Added - South Wilson Deep Unit No. 1 well – NW1/4SE1/4 Section 33, T21S, R34E

- Second Amendment to Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area
Lea County, New Mexico
By and Between the State of New Mexico and Raptor Natural Pipeline, LLC
Executed by Raptor on May 23, 2001 and Effective on Approval by the Commissioner

Unit Area: Clarified the legal description of the Unit Area as follows:

T-21-S, R-34-E
Section 33 – All
Section 34 – All
T-22-S, R-34-E
Section 3 – All
Section 4 – Lot 1, Lot 2, S/2 NE/4
Containing 2,089.81 acres, more or less

In addition, the following Federal agreements and lands comprise the remainder of the Unit:

- Agreement For Subsurface Storage Of Gas, Morrow Formation, Grama Ridge Unit Area
Lea County, New Mexico
By and between the United States of America and Llano, Inc.
Effective November 1, 1975

Unit Area: Section 4, T22S, R34E - All 640 acres

Unitized Formation: Vertical interval between 12,778 feet and 13,255 feet below the surface in the Morrow formation in the Federal GR-4 No. 1.

Wells: Llano Federal GR-4 No. 1 – SE1/4SE1/4NW1/4 Section 4, T22S, R34E

- Amendment - Agreement For Subsurface Storage Of Gas, Morrow Formation, Grama Ridge Unit Area
Lea County, New Mexico
By and between the United States of America and Llano, Inc.
Effective April 1, 1981

Unit Area: Added - Section 10, T22S, R34E - All 640 acres

Wells: Added - Llano Government "A" No. 1 – SE1/4NW1/4 Section 10, T22S, R34E

The New Mexico Department of Energy and Minerals, Oil Conservation Division's Order No. R-7582, effective June 27, 1984, subsequently acknowledged this expansion by amendment.

Exhibit "A" and Exhibit "B" attached are a map and schedule showing United States of America, State of New Mexico and fee-owned acreage committed to the Unit along with the identity of mineral tract owners to the extent known to the Unit Operator as of January 1, 2002.

Exhibit "C" and Exhibit "D" attached are a map and schedule showing United States of America, State of New Mexico and fee-owned acreage subject to the Unit along with the identity of land surface ownership to the extent known to the Unit Operator as of January 1, 2002.

Wells - Name Changes and Usage:

Original Well Name:

Well Name Change:

Shell Oil Company State GRA Well No. 1
Shell State GRB Well No. 1
South Wilson Deep Unit No. 1
Llano Federal GR-4 No. 1
Llano Government "A" No. 1

GRM Unit No. 1
GRM Unit No. 2
GRM Unit No. 3
GRM Unit No. 4
GRM Unit No. 5

- § 34

Effective March 15, 1978, at the request of the New Mexico Department of Energy and Minerals, Oil Conservation Division, Shell Oil Company State GRA Well No. 1, Shell State GRB Well No. 1, South Wilson Deep Unit No. 1, and Llano Federal GR-4 No. 1 were renamed GRM Unit No.1, GRM Unit No. 2, GRM Unit No. 3, and GRM Unit No. 4, respectively, to reflect the unit status.

Effective April 1, 1981 the amendment to the Agreement For Subsurface Storage Of Gas, Morrow Formation, Grama Ridge Unit Area, by and between the United States of America and Llano, Inc. expanded the Unit to include Section 10, T22S, R34E and the Llano Government "A" No. 1. The Llano Government "A" No. 1 was renamed GRM Unit No. 5 effective May 18, 1984. In June 1985 the GRM Unit No. 5 was withdrawn from the Unit and recompleted as a gas well in another producing interval.

The wells are used for the injection and withdrawal of gas into and out of the Unit in the following manner:

- GRM Unit No. 1: Used for injection and withdrawal.
- GRM Unit No. 2: Used for injection and withdrawal.
- GRM Unit No. 3: Used for withdrawal only.
- GRM Unit No. 4: Used for withdrawal only.

- § 34

Facilities and Measurement:

Unit Operator will maintain equipment to separate the gas from the liquid hydrocarbons produced from the withdrawal of gas from the Unit wells, as stipulated in Section 11(A) of the Unit Agreement, as amended. Liquid hydrocarbons will be sold and the proceeds allocated according to the provisions of Section 11(A) of the Unit Agreement, as amended. Sales volumes will be reported every six months in accordance with the form attached hereto as Exhibit "G".

Unit Operator will maintain natural gas measuring stations properly equipped with an orifice meter and an electronic flow recorder of standard design and manufacture. The measurements of this measuring station will fix the cumulative quantity of gas injected and withdrawn from the Unit wells. Orifice meter installations will conform to the recommendations for design and installation contained in

ANSI/API 2530-AGA Report No. 3 (1985) and any supplements thereto as deemed appropriate by the Unit Operator. Unit Operator will keep the measuring equipment accurate and in repair and will test the orifice meter in service quarterly or more often if deemed necessary by Unit Operator. Samples of the injected and withdrawn gas will be obtained monthly, or more often as Unit Operator deems necessary, and tested by chromatography to determine the composition of the gas.

Injection, Withdrawal, and Cumulative Volumes:

The net balance of gas volumes in storage in the Unit as of December 31, 2001 was 7,908,101 Mcf (or 10,502,849MMBtu), determined by the Unit Operator as follows:

Through provisions outlined in the Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area, Lea County, New Mexico, by and between the State of New Mexico and Llano, Inc., effective April 25, 1973, the Unit Operator paid the State in-full for royalties otherwise due on primary gas and liquid hydrocarbons left in Section 34, T21S, R34E and Section 3, T22S, R34E of the Unit. It was determined that 47,770 MCF of primary production existed at that time.

Through provisions outlined in the amendment to the Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area, Lea County, New Mexico, by and between the State of New Mexico and Llano, Inc., effective September 1, 1976, the Unit Operator paid for royalties due on primary gas and liquid hydrocarbons left in Section 33, T21S, R34E of the Unit. It was determined that 318,519 MCF of primary production existed at that time.

Through provisions outlined in the amendment to the Agreement For Subsurface Storage Of Gas, Morrow Formation, Grama Ridge Unit Area, Lea County, New Mexico, by and between the United States of America and Llano, Inc., effective April 1, 1981, the Unit Operator paid for royalties due on primary gas and liquid hydrocarbons left in Section 10, T22S, R34E and Section 3, T22S, R34E of the Unit. It was determined that 413,000 MCF of primary production existed at that time.

Beginning with the Llano, Inc., Progress Report No. 23 for the six-month period ending December 31, 1984 and accounting for monthly injections and withdrawals utilizing State of New Mexico, Energy Minerals and Natural Resources, Oil Conservation Division, Form C-131A Monthly Gas Storage Reports, the cumulative injected gas has totaled 64,869,719 MCF and cumulative withdrawn gas has totaled 57,740,907 MCF as of December 31, 2001. The net cumulative balance of gas being 7,128,812 MCF. See Exhibit "E" for supporting documentation.

Therefore, the net balance of gas in storage within the Unit as of December 31, 2001 is 47,770 MCF plus 318,519 MCF plus 413,000 MCF plus 7,128,812 MCF totaling 7,908,101 MCF.

The Unit Operator is not able to accumulate monthly chromatograph analyses documentation for the same time periods as described above, however, beginning with Conoco Inc. involvement on December 1, 2000, the Unit Operator has analyses for injected and withdrawn gas. The Unit Operator will apply the average British Thermal Units as calculated for the time period December 1, 2000 through December 31, 2001 to cumulative injection and withdrawn gas volumes, and primary production gas volumes purchased in place. Therefore, the net balance of gas in storage within the Unit as of December 31, 2001 is 10,502,849 MMBtu. See Exhibit "F" for supporting documentation.

Reporting:

All future six-month progress reports shall include both MCF and MMBtu injection, withdrawal and cumulative reporting for the Unit in accordance with the form attached hereto as Exhibit "G". Injection, withdrawal and cumulative balance volumes will also be reported monthly to the New Mexico Oil Conservation Division in accordance with NMOCD Form C-131-A (Exhibit "H", attached). British Thermal Units per MCF shall be determined utilizing monthly chromatograph analyses for gas that is injected and withdrawn.

Purpose and Continued Use of Unit:

The purpose of the Unit is to provide commercial storage of gas to third party customers. Customers will be allowed to request the injection and withdrawal of their gas pursuant to contractual agreements entered into between them and the Unit Operator. For the foreseeable life of the Unit, injection of gas into the storage facility shall proceed according to a plan of typically injecting gas April through October and withdrawing gas November through March of each year. However, typical injection and withdrawal cycles may vary depending on the requirements of the customers and their contracts associated with the storage facility. The Unit Operator will continue to operate the Unit in accordance with the terms and conditions of Unit Agreement.

Term and Termination:

This Plan of Operations shall be effective beginning January 1, 2002 and shall remain in effect for a period of time equal to the lesser of five (5) years from the date the Commissioner of Public Lands (the "Commissioner") approves the same or until conditions warrant a change in operating procedures as described in this Plan of Operations. At such time, a new plan of operation shall be submitted to the Commissioner for approval.

Upon termination or cancellation of the Unit Agreement as to all of the Unit Area, Unit Operator will remove all improvements placed on the premises and will restore the premises as provided in the Unit Agreement or the respective Oil and Gas Leases, as applicable; if the Unit Agreement or the respective Oil and Gas Leases do not provide for restoration, Unit Operator shall restore the premises, to the extent reasonably possible, to the same condition as it existed prior to placement of the improvements.

This Plan of Operation is respectfully submitted for approval effective January 1, 2002.

RAPTOR NATURAL PIPELINE LLC

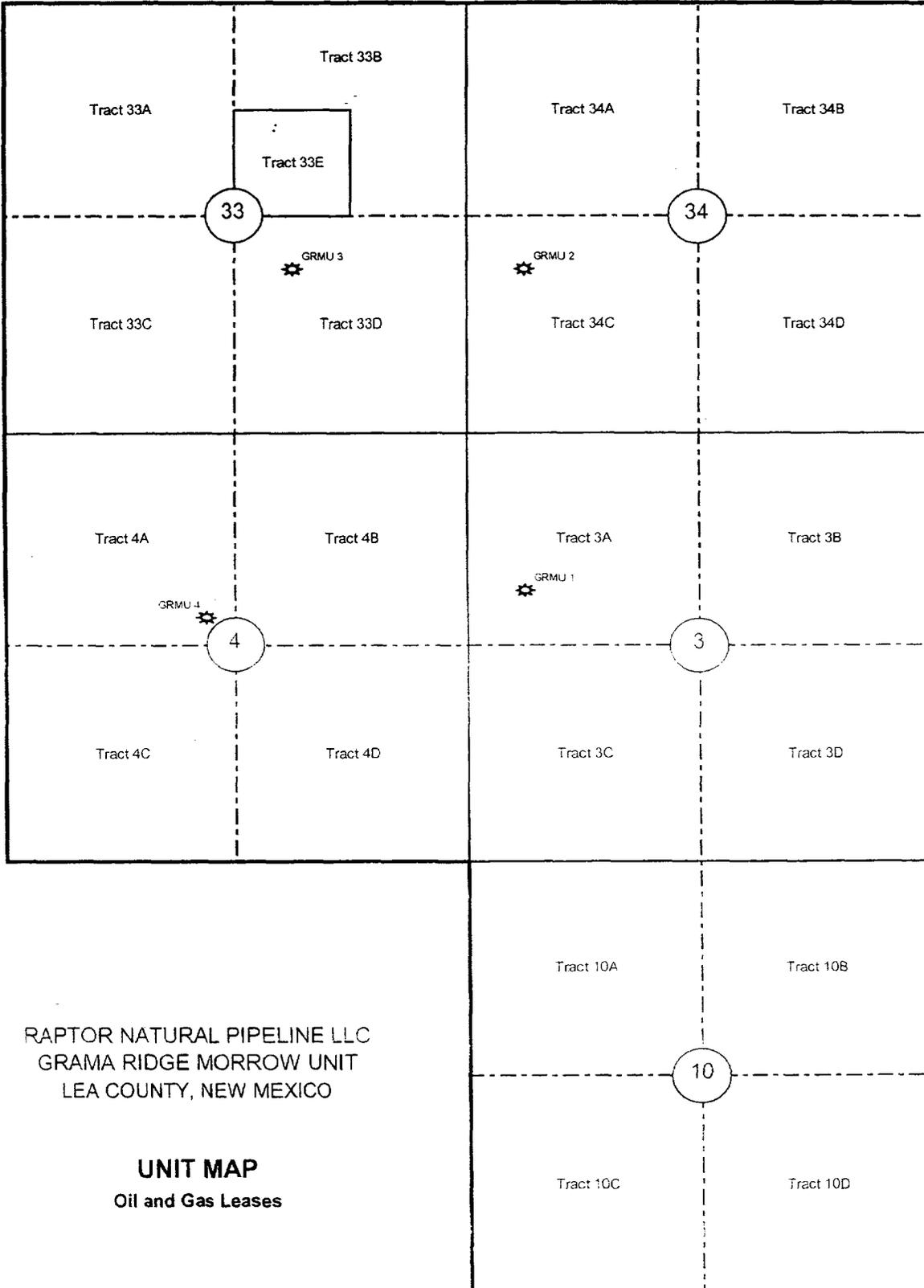
By: M. L. Johnson
M. L. Johnson, President

Approved _____
By: Ray Powell
Commissioner of Public Lands

Date: 8/24/02

EXHIBIT "A"
GRAMA RIDGE MORROW UNIT

R34E



RAPTOR NATURAL PIPELINE LLC
GRAMA RIDGE MORROW UNIT
LEA COUNTY, NEW MEXICO

UNIT MAP
Oil and Gas Leases

EXHIBIT "B"

GRAMA RIDGE MORROW UNIT AGREEMENT

Tract No.	Description	Lease No.	Acreage	Basic Royalty	Lessee of Record	Working Interest Owner and Percentage	% Tract Participation
3C	SW¼ Sec. 3, T. 22 S., R. 34 E.	SNM B-1583	160	12.50%	Apache Corp.	Raptor Natural Pipeline LLC 100%	4.9814
3D	SE¼ Sec. 3, T. 22 S., R. 34 E.	SNM B-1583	160	12.50%	Apache Corp.	Chaparral Energy, Inc. 100%	4.9814
3B	NE¼ Sec. 3, T. 22 S., R. 34 E.	SNM E-9141	163.91	12.50%	Apache Corp.	Chaparral Energy, Inc. 100%	5.1032
3A	NW¼ Sec. 3, T. 22 S., R. 34 E.	SNM E-9141	163.25	12.50%	Apache Corp.	Raptor Natural Pipeline LLC 100%	5.0826
34C	SW¼ Sec. 34, T. 21 S., R. 34 E.	SNM E-9659	160	12.50%	Chevron USA, Inc.	Raptor Natural Pipeline LLC 100%	4.9814
34D	SE¼ Sec. 34, T. 21 S., R. 34 E.	SNM E-9659	160	12.50%	Chevron USA, Inc.	EOG Resources Inc. 100%	4.9814
34A & 34B	N½ Sec. 34, T. 21 S., R. 34 E.	SNM V-5683	320	16.67%	Great Western Drilling Co.	Great Western Drilling Co. 25% Continental Land and Fur Co. 18.75% Nearburg Exploration Co. LLC 56.25%	9.9629
33A, 33B, 33C & 33D	W¼, SE¼, NE¼, SE¼ NE¼ Sec. 33, T. 21 S., R. 34 E.	SNM V 5682	600	16.67%	Raptor Natural Pipeline LLC	Raptor Natural Pipeline LLC 100%	18.6804
33E	SW¼ NE¼ Sec. 33, T. 21 S., R. 34 E.	Fee	40	The Merchant Livestock Co. 67.63% of 12.5% Dana E. Gidley & wife 50% of 32.37% of 12.5% John E. Bosserman & wife 50% of 32.37% of 12.5%	Wilson Oil Co. and Francis P. Bolton, dba Wyoming Oil	Raptor Natural Pipeline LLC 67.63% Gidley/Bosserman, et al (unleased) 32.37%	1.2454
4A & 4B	N½ Sec. 4, T. 22 S., R. 34 E.	US NM-058678	324.76	12.50%	Raptor Natural Pipeline LLC	Raptor Natural Pipeline LLC 100%	10.1111
4D	SE¼ Sec. 4, T. 22 S., R. 34 E.	US NM-03312-A	160	12.50%	Raptor Natural Pipeline LLC	Raptor Natural Pipeline LLC 100%	4.9814
4C	SW¼ Sec. 4, T. 22 S., R. 34 E.	US NM-0581970	160	12.50%	Raptor Natural Pipeline LLC	Raptor Natural Pipeline LLC 100%	4.9814
10A, 10C, & 10D	W¼ SE¼ Sec. 10, T. 22 S., R. 34 E.	US NM-033312	480	12.50%	EOG Resources, Inc.	EOG Resources, Inc. 100%	14.9443
10B	NE¼ Sec. 10, T. 22 S., R. 34 E.	US NM-049943	160	12.50%	EOG Resources, Inc.	EOG Resources, Inc. 100%	4.9814
			Total:	3,211.92			100.00

EXHIBIT "C"
GRAMA RIDGE MORROW UNIT

R34E

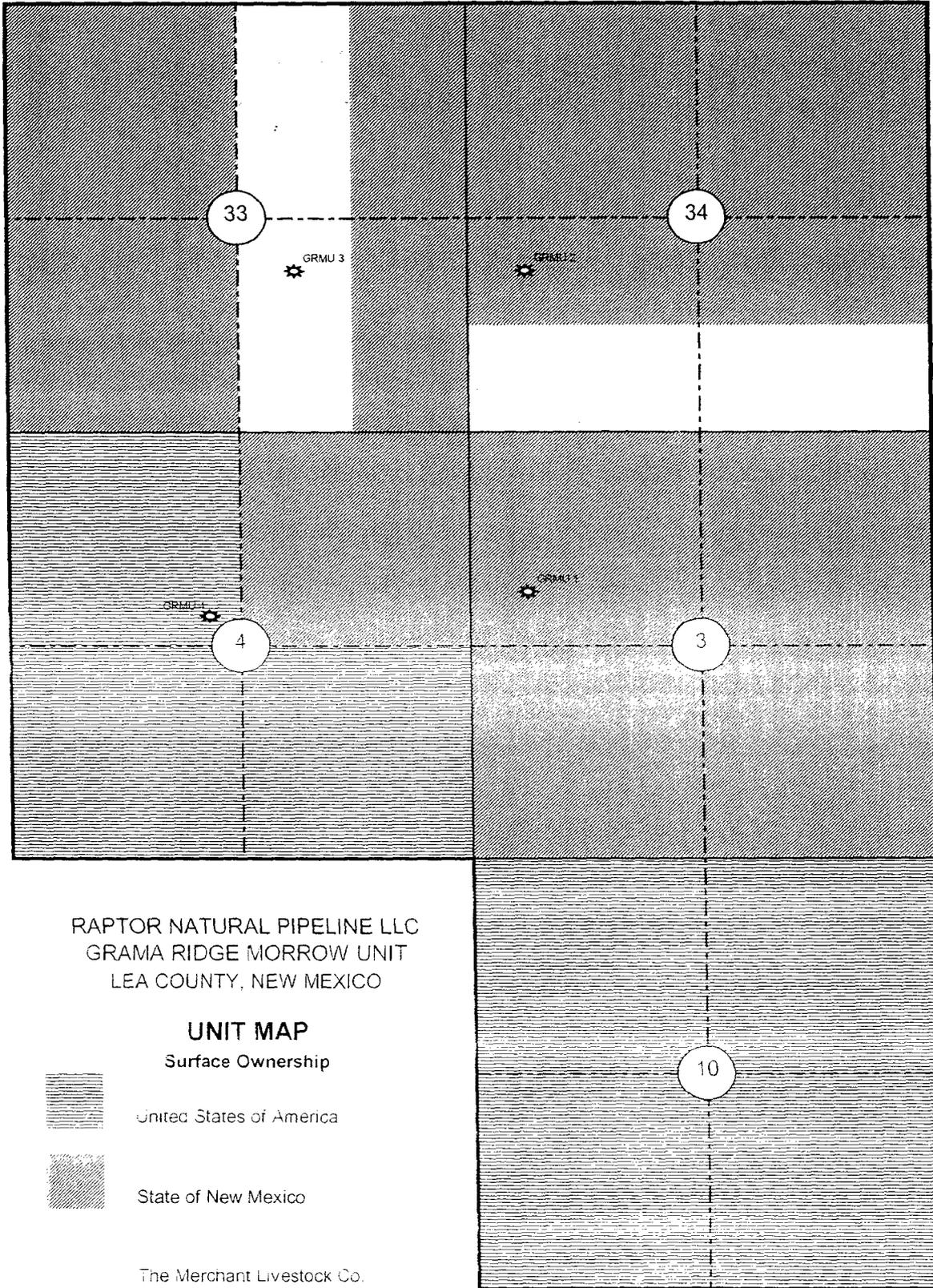


EXHIBIT "D"

GRAMA RIDGE MORROW UNIT AGREEMENT

<u>Description</u>	<u>Surface Ownership</u>	<u>Acreage</u>
W½, SE¼ Section 4, T. 22 S., R. 34 E.	United States of America	482.11
All Section 10, T. 22 S., R. 34 E.	United States of America	640
All Section 3, T. 22 S., R. 34 E.	State of New Mexico	647.16
NE¼ Section 4, T. 22 S., R. 34 E.	State of New Mexico	162.65
W½, E½E½ Section 33, T. 21 S., R. 34 E.	State of New Mexico	480
N½, N½S½ Section 34, T. 21 S., R. 34 E.	State of New Mexico	480
W½E½ Section 33, T. 21 S., R. 34 E.	The Merchant Livestock Company	160
S½S½ Section 34, T. 21 S., R. 34 E.	The Merchant Livestock Company	160
<u>Total</u>		3,211.92
	United States of America	1,122.11
	State of New Mexico	1,769.81
	The Merchant Livestock Company	320

Exhibit "E"

Grama Ridge Morrow Unit
Lea County, New Mexico
New Mexico Oil Conservation Division
Monthly Gas Storage Report, Form C-131-A

Month:	GRM Unit No. 1		GRM Unit No. 2		GRM Unit No. 3		GRM Unit No. 4		Total		NET MCF	Cumulative Injection MCF	Cumulative Withdrawal MCF	Cumulative MCF
	Injection MCF	Withdrawal MCF	Injection MCF	Withdrawal MCF	Withdrawal MCF	Withdrawal MCF	Injection MCF	Withdrawal MCF						
	Gas in place Section 34, T21S, R34E and Section 3, T22S, R34E:								47,770		47,770	47,770	-	47,770
	Gas in place Section 33, T21S, R34E:								318,519		318,519	366,289	0	366,289
	Gas in place Section 10, T22S, R34E:								413,000		413,000	779,289	0	779,289
											0	779,289	0	779,289
-Progress Report No. 23, For the Six-Month Period Ending December 31, 1984 (converted from 14.65 to 15.025 PB):									16,430,708	10,477,689	5,953,019	17,209,997	10,477,689	6,732,308
Jan-85	103,189	32,302	63,636	21,982	5,926	11,411	166,825	71,621	95,204	17,376,822	10,549,310	6,827,512		
Feb-85	46,395	39,209	111,192	34,221	3,345	19,773	157,587	96,548	61,039	17,534,409	10,645,858	6,888,551		
Mar-85	6,501	22,471	27,920	42,215	10,641	28,383	34,421	103,710	-89,289	17,568,830	10,749,568	6,819,262		
Apr-85	0	32,756	0	53,479	13,178	39,525	0	138,938	-138,938	17,568,830	10,888,506	6,680,324		
May-85	0	93,493	0	173,397	18,228	59,106	0	344,224	-344,224	17,568,830	11,232,730	6,336,100		
Jun-85	332	222,404	6,305	244,877	10,160	97,274	6,637	574,715	-568,078	17,575,467	11,807,445	5,768,022		
Jul-85	0	40,257	89,995	61,320	4,972	33,032	89,995	139,581	-49,586	17,665,462	11,947,026	5,718,436		
Aug-85	19,501	27,856	47,348	56,671	5,826	40,146	66,849	130,499	-63,650	17,732,311	12,077,525	5,654,786		
Sep-85	0	5,242	1,374	19,188	1,616	6,789	1,374	32,835	-31,461	17,733,685	12,110,360	5,623,323		
Oct-85	89,637	173	70,480	5,218	1,194	5,464	160,117	12,049	148,068	17,893,602	12,222,409	5,771,395		
Nov-85	55,112	1,050	41,571	6,591	1,340	7,586	96,683	16,567	80,116	17,990,485	12,138,976	5,851,509		
Dec-85	7,267	9,707	40,136	22,370	3,308	8,511	47,403	43,896	3,507	18,037,888	12,182,872	5,855,016		
Jan-86	5,232	856	20,527	16,498	9,144	8,667	25,759	35,165	-9,406	18,063,647	12,218,037	5,845,610		
Feb-86	8,140	0	59,840	6,977	2,967	10,051	67,980	19,995	47,985	18,131,627	12,236,032	5,893,595		
Mar-86	26,805	1,154	67,365	2,156	6,014	3,737	94,170	15,061	79,109	18,225,797	12,253,093	5,972,704		
Apr-86	0	92,948	0	87,284	17,941	16,659	0	214,832	-214,832	18,225,797	12,467,925	5,757,872		
May-86	0	295,023	0	294,329	33,475	108,260	0	731,087	-731,087	18,225,797	13,199,012	5,026,785		
Jun-86	0	266,943	0	242,273	205,168	73,654	0	570,038	-570,038	18,225,797	13,769,050	4,456,747		
Jul-86	0	238,772	0	180,454	15,016	76,689	0	510,931	-510,931	18,225,797	14,279,981	3,945,816		
Aug-86	0	132,924	0	108,821	7,738	40,010	0	289,493	-289,493	18,225,797	14,569,474	3,656,323		
Sep-86	0	72,527	0	71,828	12,532	40,692	0	197,579	-197,579	18,225,797	14,767,053	3,458,744		
Oct-86	0	16,003	0	15,294	5,085	4,767	0	41,149	-41,149	18,225,797	14,808,202	3,417,595		
Nov-86	0	0	0	0	0	0	0	0	0	18,225,797	14,808,202	3,417,595		
Dec-86	0	28,789	0	0	5,614	8,738	0	43,141	-43,141	18,225,797	14,851,343	3,374,454		
Jan-87	0	14,670	0	7,991	5,003	5,931	0	33,595	-33,595	18,225,797	14,884,938	3,340,859		
Feb-87	0	19,961	0	50,203	10,109	12,078	0	92,351	-92,351	18,225,797	14,977,289	3,248,508		
Mar-87	0	706	0	39,872	796	90	0	41,464	-41,464	18,225,797	15,018,753	3,207,044		
Apr-87	0	2,323	0	0	1,880	2,501	0	6,704	-6,704	18,225,797	15,025,457	3,200,340		
May-87	0	0	0	0	0	0	0	0	0	18,225,797	15,025,457	3,200,340		
Jun-87	0	17,629	0	0	9,074	11,369	0	38,072	-38,072	18,225,797	15,063,529	3,162,268		
Jul-87	182	0	0	0	0	0	182	0	182	18,225,979	15,063,529	3,162,450		
Aug-87	185,385	0	0	0	0	0	185,385	0	185,385	18,411,364	15,063,529	3,347,835		
Sep-87	20,729	0	0	0	0	0	20,729	0	20,729	18,432,093	15,063,529	3,268,564		
Oct-87	42,172	0	0	0	0	0	42,172	0	42,172	18,474,265	15,063,529	3,410,736		
Nov-87	15,238	33,281	0	0	18,537	25,067	15,238	76,885	-61,647	18,489,503	15,140,414	3,349,089		
Dec-87	0	40,415	0	0	30,715	48,990	0	220,120	-220,120	18,489,503	15,360,534	3,128,969		
Jan-88	0	52,366	0	0	17,678	27,683	0	108,228	-108,228	18,489,503	15,468,769	3,023,744		
Feb-88	0	44,946	0	0	12,857	14,098	0	77,904	-77,904	18,489,503	15,540,663	2,948,940		
Mar-88	0	15,347	0	0	13,402	26,628	0	34,377	-34,377	18,489,503	15,625,040	2,864,563		
Apr-88	0	337	0	0	172	333	0	1,782	-1,782	18,489,503	15,627,802	2,831,791		
May-88	66,247	0	0	0	0	0	66,247	0	66,247	18,555,750	15,627,802	2,827,548		
Jun-88	71,377	0	0	0	0	0	71,377	0	71,377	18,627,127	15,627,802	2,725,165		
Jul-88	0	30,362	0	0	0	0	0	30,362	-30,362	18,627,127	15,718,164	2,635,593		
Aug-88	0	133,428	0	0	16,946	33,497	0	183,971	-183,971	18,627,127	15,902,035	2,651,892		
Sep-88	94,708	469	0	0	150	276	94,708	895	93,813	18,848,435	15,902,930	2,945,505		
Oct-88	25,905	0	0	0	0	0	25,905	0	25,905	18,874,340	15,902,930	2,971,410		
Nov-88	1,891	131,470	0	0	0	0	1,891	131,470	-129,579	18,876,231	16,034,400	2,841,831		
Dec-88	0	175,213	0	0	50,924	55,361	0	313,009	-313,009	18,876,231	16,347,409	2,528,822		
Jan-89	12,460	2,385	0	45,081	6,151	2,832	12,460	56,449	-43,989	18,888,691	16,403,858	2,484,833		
Feb-89	14,763	9,032	0	18,503	11,475	0	14,763	39,010	-24,247	18,903,454	16,442,868	2,460,586		
Mar-89	32,020	997	23,342	1,391	99	0	55,362	2,487	52,875	18,958,816	16,445,355	2,513,461		
Apr-89	35,429	0	95	0	0	0	95,524	0	95,524	19,054,340	16,445,355	2,608,985		
May-89	203,321	0	155,637	0	0	0	358,958	0	358,958	19,413,298	16,445,355	2,967,943		
Jun-89	152,529	0	40,039	0	0	0	292,548	0	292,548	19,705,846	16,445,355	3,260,491		
Jul-89	39,421	4,955	34,796	3,019	4,743	4,825	74,207	18,682	55,525	19,780,053	16,463,437	3,316,316		
Aug-89	178,352	0	132,517	0	0	0	310,869	0	310,869	20,090,922	16,463,437	3,627,525		
Sep-89	2,559	0	39,153	0	0	3,041	41,712	3,041	38,671	20,132,674	16,466,478	3,666,196		
Oct-89	57,158	0	12,202	0	0	0	69,360	0	69,360	20,202,034	16,466,478	3,735,556		
Nov-89	9,187	111,755	0	104,886	0	0	9,187	216,741	-207,554	20,211,221	16,683,219	3,528,002		
Dec-89	0	198,443	0	135,341	36,154	45,718	0	415,656	-415,656	20,211,221	17,098,875	3,112,346		
Jan-90	0	129,815	0	92,520	2,404	22,304	0	257,043	-257,043	20,211,221	17,355,918	2,855,303		
Feb-90	0	79,922	0	128,940	3,357	3,028	0	321,247	-321,247	20,211,221	17,677,165	2,534,056		
Mar-90	0	3,488	0	5,841	0	0	0	14,329	-14,329	20,211,221	17,691,494	2,519,727		
Apr-90	0	137	0	0	0	0	0	13,354	0	20,224,575	17,691,494	2,500,251		
May-90	33,378	14,273	32,600	46,228	0	0	36,178	31,208	24,972	20,278,353	17,752,700	2,325,353		
Jun-90	158,091	1,009	190,654	0	0	0	348,745	1,009	347,736	20,378,098	17,753,709	2,973,389		
Jul-90	185,603	0	274,125	0	6,021	3,149	459,728	9,170	450,558	21,186,826	17,762,879	3,423,947		
Aug-90	181,589	0	300,560	0	0	0	482,149	0	482,149	21,568,975	17,762,879	3,906,096		
Sep-90	171,230	0	338,400	0	0	0	509,630	6,706	502,924	22,071,900	17,769,588	4,407,067		
Oct-90	153,225	0	381,385	0	0	0	534,611	19,253	515,358	22,587,258	17,783,841	4,922,128		
Nov-90	326	131,450	20,546	100,047	22,119	32,163	21,172	255,779	-234,607	22,732,138	18,044,520	4,687,615		
Dec-90	0	227,491	0	547,612	28,477	45,510	0	349,090	-349,090	22,732,138	18,393,710	4,338,428		
Jan-91	0	235,781	0	536,817	11,311	39,355	0	823,264	-823,264	22,732,138	19,716,974	3,015,164		
Feb-91	0	169,174	0	239,878	10,518	30,937	0	450,507	-450,507					

Aug-91	339,998	0	374,752	0	0	0	714,750	0	714,750	25,872,161	20,438,066	5,434,095
Sep-91	393,880	0	432,634	0	0	0	826,514	0	826,514	26,688,675	20,438,066	6,280,609
Oct-91	329,898	0	316,627	0	0	0	646,525	0	646,525	27,345,200	20,438,066	6,907,134
Nov-91	0	325,168	0	373,504	15,893	44,219	0	758,784	-758,784	27,345,200	21,196,850	6,148,350
Dec-91	0	362,311	0	478,867	15,111	72,548	0	928,837	-928,837	27,345,200	22,125,687	5,219,513
Jan-92	0	393,443	0	538,359	13,503	68,065	0	1,013,370	-1,013,370	27,345,200	22,125,687	5,219,513
Feb-92	67	261,122	0	357,597	12,644	37,594	67	668,957	-668,890	27,345,267	23,139,057	4,206,143
Mar-92	0	175,765	0	234,869	8,193	31,922	0	450,749	-450,749	27,345,267	23,808,014	3,537,253
Apr-92	11,035	172,647	109,742	38,380	772	3,731	120,777	215,530	-94,753	27,466,044	24,474,293	3,086,504
May-92	336,006	14,877	206,754	0	0	0	542,760	14,877	527,883	28,008,804	24,489,170	2,991,751
Jun-92	387,015	0	358,969	0	0	0	745,984	0	745,984	28,754,788	24,489,170	3,519,634
Jul-92	367,466	0	321,837	0	0	0	689,303	0	689,303	29,444,091	24,489,170	4,285,918
Aug-92	384,532	0	368,181	0	0	0	752,693	0	752,693	30,196,784	24,489,170	4,954,921
Sep-92	341,320	0	226,291	0	0	0	567,611	0	567,611	30,764,395	24,489,170	5,707,614
Oct-92	32,061	259,360	82,795	41,077	0	0	114,856	300,437	-185,581	30,879,251	24,789,607	6,089,644
Nov-92	489	408,479	0	468,602	21,729	90,567	489	989,377	-988,888	30,879,740	25,778,984	5,100,756
Dec-92	0	357,123	0	488,654	7,659	72,668	0	926,104	-926,104	30,879,740	26,705,088	4,174,652
Jan-93	0	314,012	0	468,165	11,687	55,153	0	849,017	-849,017	30,879,740	27,554,105	4,174,652
Feb-93	0	271,105	0	311,000	29,595	44,477	0	656,177	-656,177	30,879,740	28,210,282	3,325,635
Mar-93	0	259,271	0	203,447	12,961	40,075	0	515,754	-515,754	30,879,740	28,726,036	2,669,458
Apr-93	0	196,808	0	42,940	9,456	32,240	0	281,444	-281,444	30,879,740	29,007,480	2,153,704
May-93	424,878	0	429,794	0	0	0	854,672	0	854,395	31,734,412	29,007,480	1,872,260
Jun-93	496,780	0	506,449	0	0	0	1,003,229	0	1,003,229	32,737,641	29,007,480	2,726,655
Jul-93	476,231	0	325,025	0	0	0	801,256	0	801,256	33,538,897	29,007,480	3,729,884
Aug-93	260,872	125,438	255,560	107,115	0	0	517,432	232,553	284,879	34,056,329	29,240,310	4,531,140
Sep-93	488,297	0	257,159	0	0	0	745,456	0	745,456	34,801,785	29,240,310	4,816,019
Oct-93	144,746	65,010	152,536	32,641	0	0	297,282	97,651	199,631	35,099,067	29,337,961	5,561,475
Nov-93	0	387,196	0	499,889	21,462	30,338	0	938,885	-938,885	35,099,067	30,276,846	5,761,106
Dec-93	8,881	205,512	9,932	342,855	4,939	64,394	18,813	617,700	-598,887	35,117,880	30,894,546	4,822,221
Jan-94	0	272,101	0	465,579	6,155	70,292	0	814,127	-814,127	35,117,880	30,894,546	4,223,334
Feb-94	0	231,675	0	264,678	7,872	51,666	0	555,891	-555,891	35,117,880	31,708,673	3,408,207
Mar-94	0	163,120	0	100,361	11,135	36,161	0	310,777	-310,777	35,117,880	32,264,564	2,853,316
Apr-94	103,607	53,500	1,557	6,071	0	0	105,164	59,571	45,593	35,223,044	32,534,912	2,542,539
May-94	458,982	0	348,946	0	0	0	806,928	0	806,928	36,029,972	32,534,912	2,588,132
Jun-94	370,783	4,310	340,209	0	0	0	710,992	4,310	706,682	36,740,964	32,639,222	3,395,060
Jul-94	278,895	0	113,070	0	0	0	391,965	0	391,965	37,132,929	32,639,222	4,101,742
Aug-94	106,072	0	118,624	0	0	0	224,696	0	224,696	37,357,625	32,639,222	4,493,707
Sep-94	542,198	0	538,629	0	0	0	1,081,827	0	1,081,827	38,439,452	32,639,222	4,718,403
Oct-94	486,455	0	468,757	0	0	0	955,212	0	955,212	39,394,664	32,639,222	5,800,230
Nov-94	28,167	270,491	38,000	167,210	3,892	19,290	66,167	460,883	-394,716	39,460,831	33,100,105	6,360,726
Dec-94	0	449,676	0	767,248	12,636	100,607	0	1,330,167	-1,330,167	39,460,831	34,430,272	5,030,559
Jan-95	0	244,628	27,302	318,742	5,295	28,999	27,302	597,562	-570,360	39,460,831	35,027,934	4,460,199
Feb-95	101,663	210,325	17,427	225,287	9,589	63,618	119,090	508,819	-389,729	39,607,223	35,536,753	4,070,470
Mar-95	364,808	118,740	318,775	40,373	9,836	16,861	683,583	165,810	497,773	40,290,806	35,722,583	4,568,243
Apr-95	193,050	17,170	177,790	0	0	3,571	370,840	20,741	350,099	40,661,646	35,743,304	4,918,342
May-95	383,844	0	379,017	0	0	0	762,861	0	762,861	41,424,507	35,743,304	5,681,203
Jun-95	415,253	0	402,900	0	0	0	818,153	0	818,153	42,242,660	35,743,304	6,499,356
Jul-95	352,364	0	281,301	0	0	0	633,665	0	633,665	42,876,325	35,743,304	7,133,021
Aug-95	342,003	0	258,678	0	0	0	600,681	0	600,681	43,477,006	35,743,304	7,733,702
Sep-95	32,981	161,535	20,913	232,584	12,033	68,285	53,894	474,437	-420,543	43,530,900	36,217,741	7,313,159
Oct-95	4,174	311,406	16,844	100,541	0	47,736	21,018	459,683	-438,665	43,551,918	36,877,424	6,874,494
Nov-95	0	398,780	0	396,825	9,224	106,716	0	911,545	-911,545	43,551,918	37,588,959	5,968,969
Dec-95	7,877	302,371	16,194	375,526	15,787	64,286	24,071	757,970	-733,899	43,575,989	38,346,939	5,229,050
Jan-96	0	357,339	0	488,411	11,319	68,416	0	826,484	-826,484	43,575,989	39,273,420	4,302,558
Feb-96	0	303,126	0	319,615	22,592	55,165	0	700,988	-700,988	43,575,989	39,970,921	3,922,533
Mar-96	0	322,259	0	252,492	4,780	59,243	0	643,774	-643,774	43,575,989	40,617,595	3,853,294
Apr-96	0	206,135	0	193,555	1,182	19,114	0	373,675	-373,675	43,575,989	41,015,871	3,601,718
May-96	27,369	3,630	157,384	0	0	0	-35,563	11,923	473,138	44,173,220	41,015,871	3,155,352
Jun-96	14,631	9,158	33,745	0	0	0	38,375	19,158	79,220	44,173,220	41,015,871	3,144,348
Jul-96	6,197	0	36,412	0	0	0	42,609	0	42,609	44,214,308	41,015,871	3,166,957
Aug-96	26,633	0	123,199	0	0	0	149,832	0	149,832	44,364,440	41,015,871	3,058,769
Sep-96	445,453	0	468,982	0	0	0	314,435	0	314,435	45,278,575	41,015,871	4,251,214
Oct-96	186,805	30,412	239,882	37,131	0	0	426,667	67,543	359,124	45,705,542	41,095,194	4,610,348
Nov-96	0	394,635	12,438	474,949	15,674	0	12,438	885,258	-872,820	45,717,930	41,980,452	3,737,520
Dec-96	30,677	265,547	48,735	281,630	3,223	0	79,412	555,400	-475,988	45,797,392	42,535,852	3,261,540
Jan-97	0	273,303	0	231,475	7,926	0	0	512,704	-512,704	45,797,392	42,535,852	3,261,540
Feb-97	0	225,723	2,968	140,078	10,941	0	2,968	376,742	-373,774	45,800,360	43,048,556	2,748,836
Mar-97	0	203,396	0	36,791	3,794	0	0	243,981	-243,981	45,800,360	43,425,998	2,375,062
Apr-97	3,693	36,596	76,200	0	0	0	79,793	36,596	-3,197	45,880,153	43,705,875	2,174,278
May-97	0	22,186	162,956	0	0	0	162,956	140,770	-16,043,109	46,043,109	43,728,061	2,315,048
Jun-97	0	0	336,887	0	0	0	336,887	0	336,887	46,379,996	43,728,061	2,651,935
Jul-97	48,371	3,755	177,584	0	0	0	223,955	2,765	-14,130	46,603,351	43,737,326	2,866,025
Aug-97	428,338	0	357,335	0	0	0	386,270	0	386,270	47,390,224	43,737,326	3,652,568
Sep-97	354,935	0	318,732	0	0	0	673,667	0	673,667	48,063,891	43,737,326	4,326,065
Oct-97	143,610	57,805	153,973	26,849	268	0	297,583	84,922	212,661	48,381,474	43,822,748	4,538,726
Nov-97	11,488	247,107	22,059	316,792	3,555	0	34,527	370,454	-335,927	48,396,001	44,393,202	4,002,799
Dec-97	0	192,137	0	438,301	2,419	0	0	632,857	-632,857	48,396,001	45,326,058	3,369,942
Jan-98	140,921	7,495	0	109,235	0	0	140,921	118,730	24,191	48,536,322	45,142,789	3,394,133
Feb-98	578,668	0	3,706	0	0	0	682,374	0	682,374	49,219,295	45,142,789	4,076,507
Mar-98	61,510	96,593	52,265	112,795	0	0	113,875	209,356	-95,482	49,333,172	45,352,147	3,981,025
Apr-98	479,756	34,881	1,920	117	0	0	482,476	16,171	9,315,595	49,347,125	45,347,125	4,003,000
May-98	433,079	0	322,356	0	0	0	755,435	0	755,435	50,107,125	45,347,125	4,759,000
Jun-98	247,582	3,220	199,859	0	0	0	447,441	3,220	438,221	51,018,464	45,455,945	5,562,919
Jul-98	303,518	3,250	267,394	0	0	0	570,912	3,250	567,662	51,589,376	45,455,945	5,130,581
Aug-98	710,382	0	3,879	0	0	0	714,261	0	714,261	52,303,637	45,455,945	6,844,842
Sep-98	144,351	152,691	107,827	104,106	0	0	251,973	256,7				

Aug-99	302,549	47,699	317,810	13,668	0	1,547	620,359	62,914	557,445	55,584,140	49,257,269	6,326,871
Sep-99	281,430	534	364,036	1,155	0	12,123	645,466	13,812	631,654	56,229,606	49,271,081	6,958,525
Oct-99	270,177	602,677	1,475	3,291	0	0	271,652	605,968	-334,316	56,501,259	49,877,049	6,624,209
Nov-99	377,341	46,524	348,471	43,064	0	36,355	725,812	125,943	599,869	57,227,071	50,002,992	7,224,078
Dec-99	66,060	178,943	51,335	162,999	0	40,024	117,395	381,966	-264,571	57,344,466	50,384,958	6,959,507
							0	0	0	57,344,466	50,384,958	6,959,507
Jan-00	0	405,638	0	591,507	0	13,003	0	1,010,148	-1,010,148	57,344,466	51,395,106	5,949,359
Feb-00	26,351	358,538	37,393	480,772	0	5,685	63,744	854,995	-791,251	57,408,210	52,250,101	5,158,108
Mar-00	46,153	201,295	0	208,712	0	11,540	46,153	421,547	-375,394	57,454,363	52,671,648	4,782,714
Apr-00	386,042	517	474,604	0	0	23,498	860,646	24,015	836,631	58,315,009	52,695,663	5,619,345
May-00	312,055	85,718	330,673	88,802	0	42,306	642,728	216,826	425,902	58,957,737	52,912,489	6,045,247
Jun-00	232,311	43,225	290,264	0	0	47,787	522,575	91,012	431,563	59,480,312	53,003,501	6,476,810
Jul-00	29,640	422,747	41,867	333,697	0	48,378	71,507	804,822	-733,315	59,551,819	53,808,323	5,743,495
Aug-00	84,138	315,770	113,226	274,655	0	39,453	197,364	629,878	-432,514	59,749,183	54,438,201	5,310,981
Sep-00	80,902	144,392	159,008	165,243	0	33,599	238,910	343,234	-103,324	59,989,093	54,781,435	5,207,657
Oct-00	147,995	26,159	179,616	37,915	0	0	327,611	64,074	263,537	60,316,704	54,845,509	5,471,194
Nov-00	171,955	158,953	130,786	125,723	0	0	302,741	284,676	18,065	60,619,445	55,130,185	5,489,259
Dec-00	115,654	190,888	63,438	287,328	0	0	179,092	478,216	-299,124	60,798,537	55,808,401	5,190,135
							0	0	0	60,798,537	55,808,401	5,190,135
Jan-01	-23	273,119	-38	288,080	8,968	22,663	-61	592,830	-592,892	60,798,475	56,201,232	4,597,244
Feb-01	27,421	186,238	-127	196,585	7,011	21,550	27,294	411,385	-384,091	60,825,769	56,612,616	4,213,153
Mar-01	352,611	8,255	486,274	8,133	1,068	371	838,885	17,827	821,058	61,664,654	56,630,443	5,034,211
Apr-01	301,215	0	443,376	0	0	0	744,591	0	744,591	62,409,245	56,630,443	5,778,802
May-01	330,282	0	459,887	0	0	0	790,169	0	790,169	63,199,415	56,630,443	6,568,971
Jun-01	145,844	110,811	240,318	63,575	0	0	386,162	174,386	211,777	63,585,577	56,804,829	6,780,748
Jul-01	103,059	119,414	146,282	129,282	197	131	249,342	249,024	318	63,834,919	57,053,853	6,781,066
Aug-01	105,010	133,447	113,811	132,799	124	0	218,821	266,370	-47,549	64,053,740	57,320,223	6,733,517
Sep-01	265,408	34,347	237,909	22,411	0	0	503,316	56,759	446,558	64,557,056	57,376,981	7,180,075
Oct-01	187,287	53,564	246,375	13,878	0	0	433,662	67,442	366,220	64,990,718	57,444,423	7,546,295
Nov-01	272,284	24,025	297,077	11,418	0	0	569,361	35,443	533,918	65,560,079	57,478,866	8,080,213
Dec-01	62,692	99,175	26,237	161,866	0	0	889,29	261,041	-172,112	65,649,008	57,740,907	7,908,101

EXHIBIT "F"

Injection / Withdrawal MMBTU

Month:	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01	Cumulative
Raptor Natural Pipeline Actuals 14.65 PB MMBTU	193,667 (502,935)	(64) (622,178)	29,508 (432,154)	905,558 (18,706)	813,537	845,814	417,364 (178,857)	273,151 (262,171)	238,487 (280,146)	551,367 (59,667)	473,879 (73,026)	627,830 (38,305)	87,860 (284,036)	5,468,058 (2,752,183)
MCF	183,684 (490,478)	(63) (608,031)	27,994 (421,933)	860,395 (18,294)	763,683	810,430	396,064 (178,857)	255,735 (255,409)	224,432 (273,200)	516,222 (58,214)	444,763 (69,169)	583,936 (38,350)	91,208 (287,724)	5,158,481 (2,677,649)
MMBTU / MCF	1.05435 1.02540	1.02327	1.05408 1.02422	1.05249 1.02319	1.06528	1.04366	1.05378 1.00000	1.08810 1.02648	1.06262 1.02542	1.06808 1.02496	1.06546 1.05578	1.07517 1.05378	1.07405 1.06093	1.06001 1.02784

Weighted Average MMBTU / MCF: For time period December 1, 2000 through December 31, 2001

Injection 1.06001
Withdrawal 1.02784

Weighted Average MMBTU / MCF: For time period December 1, 2000 through December 31, 2001

Converted from 14.65 to 15.025 PB

Injection 1.08715
Withdrawal 1.05415

	Nov-00 and Prior		Dec-00 thru Dec01		Total as of Dec. 31, 2001	
	MCF	MMBTU	MCF	MMBTU	MCF	MMBTU
Cumulative Injections	60,819,445	65,902,226	5,029,734	5,468,058	65,649,178	71,370,284
Cumulative Withdrawals	55,130,185	58,115,253	2,610,818	2,752,183	57,741,004	60,867,436
	(1)	(2)	(3)	(4)		

Net Balance - MMBTU as of December 31, 2001 10,502,849

(1) From Exhibit "L" Cumulative Volumes
(2) MCF Multiplied by Weighted Average MMBTU / MCF (15.025 PB)
(3) Raptor Natural Pipeline Actuals Converted from 14.65 to 15.025 PB
(4) Raptor Natural Pipeline Actuals

13

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

RECEIVED
JUL 05 2001
MILLER STEIN GRT
TORGERSO, P.A.
SANTA FE, NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

APPLICATION OF RAPTOR NATURAL PIPELINE, LLC CASE NO. 12588
f/k/a LG & E ENERGY CORPORATION, FOR SPECIAL
RULES FOR THE GRAMA RIDGE MORROW GAS STORAGE
UNIT, LEA COUNTY, NEW MEXICO.

APPLICATION OF LG & E NATURAL PIPELINE LLC CASE NO. 12441
FOR SPECIAL RULES FOR THE GRAMA RIDGE
MORROW GAS STORAGE UNIT, LEA COUNTY, NEW
MEXICO.

ORDER NO. R-11611

ORDER OF THE DIVISION

BY THE DIVISION:

These cases came on for hearing at 9:00 a.m. on May 21, 2001, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 3rd day of July, 2001, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of these cases and their subject matter.

(2) At the time of the hearing, Cases No. 12588 and 12441 were consolidated for the purpose of testimony. It is further noted that the original applicant in Case No. 12441, LG&E Natural Pipeline, LLC, through a change of name became Raptor Natural Pipeline LLC.

BTA Oil Producers, Yates Petroleum Corporation, T. W. Trainer, Inc., Nearburg Exploration Company L.L.C. and Concho Resources, Inc. appeared at the hearing and were represented by counsel.

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(4) The applicant in Case No. 12588, Raptor Natural Pipeline LLC, is the Unit Operator of the Grama Ridge Morrow Gas Storage Unit, utilized for the purposes of the injection, storage, and withdrawal of gas in the Unitized Formation, consisting of those Morrow formation sands encountered between log depths of 12,722 feet and 13,208 feet in the Shell Oil Company State GRA Well No. 1 (API No. 30-025-21336), located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 3, Township 22 South, Range 34 East, NMPM, Lea County, New Mexico.

(5) The Grama Ridge Morrow unitized area, as originally approved by the Division on January 29, 1973, pursuant to Order No. R-4473, and subsequently amended, encompasses the above-referenced interval of the Morrow Formation underlying the following lands:

Township 21 South, Range 34 East, NMPM

Section 33: All
Section 34: All

Township 22 South, Range 34 East, NMPM

Section 3: All
Section 4: All
Section 10: All

(6) Unit operations originally commenced in 1964 as conventional production operations authorized by the Division under Order No. R-2792. In 1973, the Division, by Order No. R-4491, authorized the conversion of the Unit from primary recovery to gas storage, pursuant to a three-phase plan consisting of pilot pressure testing to determine the limits of the Morrow reservoir, followed by the installation of permanent compression equipment and fill-up operations, and subsequently, by installation of additional compression to facilitate fill-up to 2,500 psig surface pressure.

(7) In 1979, in Case No. 6557, the New Mexico Oil Conservation Commission ("Commission") issued Order No. R-6050, creating the East Grama Ridge-Morrow Gas Pool in the area. In Order No. R-6050, the Commission found that the Morrow producing interval in the area does not constitute a broad, continuous producing body, but instead is composed of numerous and separate isolated sand bodies. Subsequently, in Case No. 8088, the Commission found in Order No. R-7582 that the boundaries of the Grama Ridge Storage Reservoir could not be precisely determined. The issuance of Order No. R-7582 by the Commission in Case No. 8088 was precipitated by the proposed location of the L&B Oil Company Federal Well No. 1 to be drilled at a location 660 feet from the South line and

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1980 feet from the East line (Unit O) of Section 5, Township 22 South, Range 34 East, NMPM, Lea County, New Mexico directly offsetting the Grama Ridge Morrow Gas Storage Unit. At the insistence of the Unit operator, then Llano, Inc., the Commission ordered L&B Oil Company to permit Llano to run an RFT log in the Federal Well No. 1, in order to establish the pressure in each Morrow stringer and thereby determine if the well was in communication with the gas storage project. The Commission further ordered L&B Oil Company to provide Llano with certain information on the Federal Well No. 1, including drilling time, weight, bit changes, *etc.*; copies of drill stem tests; mud log information; samples of drill cuttings; and copies of the CNL-FDC porosity log or equivalent porosity log. L&B was further ordered to delay running casing into the well until Llano had the opportunity to run the RFT log. Order No. R-7582 finally prohibited L&B Oil Company from producing gas from those Morrow stringers that the RFT log data showed as having pressure similar to Llano's gas storage project

(8) The applicant presented evidence establishing that Nearburg Exploration Company LLC drilled and completed its Grama Ridge East "34" State Well No. 1 (API No. 30-025-34948) within the horizontal limits of the Unit at a location approximately 1548 feet from the North line and 990 feet from the East line (Unit H) of Section 34, Township 21 South, Range 34 East, NMPM, Lea County, New Mexico. This well was also drilled to a total depth and completed within the vertical limits of the structural equivalent of the Unitized Formation.

(9) Raptor presented testimony and evidence establishing that, based on currently available data, it appears that the Grama Ridge East "34" State Well No. 1 has not adversely affected Unit Operations, although the possibility of actual communication with the Unitized Formation cannot be precluded with absolute certainty.

(10) Raptor presented additional geologic and engineering evidence establishing that the exact boundaries of the storage reservoir still cannot be precisely determined. The evidence further establishes that the precise location of faults in the area and the apparent boundary or boundaries between the storage reservoir and the East Grama Ridge-Morrow Gas Pool is uncertain.

(11) Raptor presented additional geologic evidence of the depositional mechanics of the Morrow formation in the area, establishing that there is a reasonable possibility of communication between the storage reservoir and Morrow sands in the East Grama Ridge-Morrow Gas Pool. These depositional mechanisms include distributary prograding channel sands with truncation of lobe sands; bifurcating distributary channels; crevasse splays with communication up-formation; stacked channel sands with truncation; offsetting channels of relatively close proximity with varying relative reservoir pressures which may lead to the

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failure of inter-reservoir sealing mechanisms; and, faulted distributaries with cross-fault communication.

(12) The applicant presented additional evidence establishing that the potential exists for additional drilling and development within the horizontal limits of the Unit Area and that additional drilling or recompletions may result in wells being completed in Morrow Formation reservoirs that are in communication with that portion of the formation dedicated to the Grama Ridge Morrow Gas Storage Unit. As a consequence, there exists a reasonable potential that the drilling, completion, and operation of new wells or recompletions of existing wells in the area, would result in interference with Unit operations and the impairment of Applicant's correlative rights.

(13) Raptor requests that the Division adopt Special Project Rules and Operating Procedures for the Grama Ridge Morrow Gas Storage Unit Area, including certain notification, casing, cementing, completion and recompletion requirements for newly drilled and existing wells within the Unit Area.

(14) Raptor presented engineering testimony and evidence in support of its proposed casing and cementing requirements that would permit recompletions and new drills through the Unitized Formation, and completions immediately above and below the Unitized Formation, while maintaining the integrity of the Unit and unit operations.

(15) Raptor presented evidence establishing that the implementation of such rules is reasonable, and does not unduly burden operators of wells within the project area, and industry and regulatory precedent exists for such rules.

(16) The evidence presented further established that the implementation of such Special Project Rules and Operating Procedures would be in the interest of, and would promote, public safety.

(17) In August 2000, Raptor, then known as LG&E Natural Pipeline LLC, convened a meeting in Midland, Texas with operators in the vicinity of the Grama Ridge Morrow Gas Storage Unit to discuss the establishment of proposed Special Project Rules and Operating Procedures in the Grama Ridge Morrow Gas Storage Unit Area as well as in a buffer zone consisting of each 320-acre gas spacing and production unit immediately adjacent to the Grama Ridge Morrow Gas Storage Unit. As a result of that meeting and the comments received from the other operators, Raptor/LG&E modified its proposal by eliminating certain notification and testing procedures as well as the buffer zone. Subsequent meetings with other operators, specifically Nearburg Exploration, resulted in further refinements and modifications to the proposed Special Project Rules and Operating Procedures.

(18) The Special Project Rules and Operating Procedures presently proposed by Raptor provide for:

- (a) Advance notification of drilling or recompletion operations;
- (b) The sharing of certain information during drilling operations;
- (c) Availability of well logs;
- (d) Certain casing and cementing requirements for wells penetrating the Morrow Formation and completed above the top of the Unitized Formation;
- (e) Certain casing and cementing requirements for wells penetrating the Morrow Formation and completed below the base of the Unitized Formation and/or below the base of the Morrow Formation; and
- (f) A prohibition on completions within the Unitized Formation underlying the Unit Project Area by other than the Unit Operator.

The proposed Special Project Rules and Operating Procedures would not apply to any well that does not penetrate the Morrow Formation within the Unit Project Area.

(19) The evidence presented by Raptor established that the Special Project Rules and Operating Procedures are necessary to protect the correlative rights of the Unit Operator to the gas in its storage facility as well as to maintain the integrity of Unit operations. The evidence further established that the Special Project Rules and Operating Procedures would serve to prevent waste and are otherwise in the interests of conservation. The Special Project Rules and Operating Procedures would also promote public safety.

(20) In addition to its general authority to prevent waste and protect correlative rights set forth at N.M. Stat. Ann. 1978 Section 70-2-11, the Division is authorized by Section § 70-2-12.B (2), (7) and (13) to prevent the escape of gas from strata, to require wells to be drilled so as to prevent injury to neighboring leases or properties, and to regulate the subsurface storage of natural gas.

(21) Special operating procedures for all recompletions and newly drilled wells within the Grama Ridge Morrow Gas Storage Unit project area should be implemented in accordance with the Special Project Rules and Operating Procedures, as described above.

IT IS THEREFORE ORDERED THAT:

(1) Pursuant to the application of Raptor Natural Pipeline LLC, special project rules and operating procedures for the Grama Ridge Morrow Gas Storage Unit Area in Lea County, New Mexico are hereby promulgated as follows:

SPECIAL PROJECT RULES AND OPERATING PROCEDURES
FOR THE
GRAMA RIDGE MORROW GAS STORAGE UNIT

RULE 1. Each newly drilled or recompleted well penetrating the Morrow formation in the area of the Grama Ridge Morrow Gas Storage Unit Project Area shall be drilled, operated, and produced in accordance with the Special Project Rules and Operating Procedures hereinafter set forth.

RULE 2. Provisions of these Special Project Rules and Operating Procedures shall apply to the Grama Ridge Morrow Gas Storage Unit Project Area (the "Unit Project Area" or "Unit Area"), defined as and consisting of the following described acreage in Lea County, New Mexico:

GRAMA RIDGE MORROW
GAS STORAGE UNIT
PROJECT AREA

Township 21 South, Range 34 East, NMPM

Section 33: All

Section 34: All

Township 22 South, Range 34 East, NMPM

Section 3: All

Section 4: All

Section 10: All

RULE 3. For purposes of these Special Project Rules

and Operating Procedures, the “Unitized Formation,” as to State lands, is defined by that April 25, 1973, Unit Agreement For The Operation Of The Grama Ridge Morrow Unit Area, Lea County, New Mexico, as amended, and consists of “[t]hat subsurface portion of the unit area commonly known as the Morrow sands which is the same zone as [sic] the top and bottom of which were encountered at log depths of 12,722 feet and 13,208 feet respectively, in the Shell Oil Company State GRA Well No. 1 (API No. 30-025-21336), as shown on the Schlumberger Sonic Log B Gamma Ray Log of said well dated July 5, 1965, which well is located 1980 feet from the North line and 660 feet from the West line (Unit E) of Section 3, Township 22 South, Range 34 East, NMPM, Lea County, New Mexico.” As to State and fee lands, the Unit Area includes Sections 33 and 34, Township 21 South, Range 34 East, NMPM, and the NE/4 of Section 4 and all of Section 3, Township 22 South Range 34 East, NMPM. As to Federal lands, the “Unitized Formation” consists of the Morrow Formation underlying the “gas storage reservoir area” (also the Unit Area) in Section 4 (excluding the NE/4 of Section 4) and Section 10, Township 22 South, Range 34 East, NMPM, as defined in that November 24, 1975 Agreement for the Subsurface Storage of Gas, No. 14-08-0001-14277, as amended.

RULE 4. For purposes of these Special Project Rules and Operating Procedures, the “Morrow Formation” is defined as the full extent of the vertical limits of the Morrow formation. The “Unit Operator” is defined as the operator of the Grama Ridge Morrow Gas Storage Unit Area.

RULE 5. Operators other than the Unit Operator proposing to drill a new well or recomplete an existing well penetrating or that may penetrate the Morrow Formation within the Unit Project Area of the Grama Ridge Morrow Gas Storage Unit, as defined above, shall:

- (a) provide the Unit Operator with advance written notification of intent to drill at the sooner of the date of filing of APD, C-101 and

C-102 forms, or thirty (30) days prior to commencing drilling operations;

- (b) on commencement of drilling operations, provide the Unit Operator with the following information within twenty-four (24) hours of its availability:

 - (i) daily drilling reports, including detailed time breakdown and other parameters normally associated with IADC daily drilling reports; and
 - (ii) the anticipated date and time when the top of the Morrow formation will be encountered by the drill bit; and
- (c) provide the Unit Operator with copies of all logs run on the well within twenty-four (24) hours of their availability and before casing is set.

RULE 6. For each well penetrating the Morrow formation within the boundaries of the Unit Project Area and completed above the top of Unitized Formation, the operator shall:

- (a) in the event of a cased hole into or through the Unitized Formation, isolate the Unitized Formation by squeezing cement immediately above and below (if penetrated) the Unitized Formation and immediately below the operator's deepest completion interval, run a cement bond log, and then fill the casing with cement to a level higher than the top of the Unitized Formation; and
- (b) in the case of an open hole into or through the Unitized Formation with casing set above the Unitized Formation:

- (i) if the hole total depth is within the Unitized Formation, fill the hole with cement to a level 20 feet higher than the top of the Unitized Formation; and
- (ii) if the hole total depth is below the bottom of the Unitized Formation, set a bridge plug at a depth 20 feet below the bottom of the Unitized Formation and fill the hole with cement from the bridge plug to a level 20 feet higher than the top of the Unitized Formation.

RULE 7. For each well penetrating the Morrow Formation and completed below the base of the Unitized Formation within the boundaries of the Unit Project Area, the operator shall:

- (a) squeeze cement immediately above the perforation interval, squeeze cement immediately below the Unitized Formation and squeeze cement immediately above the Unitized Formation; and
- (b) provide the Unit Operator with a cement bond log to document bond on all squeeze jobs.

RULE 8. For each exploratory well penetrating the Morrow Formation that is to be plugged and abandoned without casing, the operator shall fill the hole with cement from a bridge plug set at 20 feet below the base of the Unitized Formation (if applicable) to a level 20 feet above the top of the Unitized Formation.

RULE 9. The Unit Operator, on the request of an operator providing information and materials pursuant to Rule 5 (a) through (c) above or any other applicable provision of these Special Project Rules and Operating Procedures, shall

treat all or any part of such information and materials as confidential and shall prevent their release to any third party, except that this confidentiality provision shall not cover such information and materials that: (i) are or become generally available to the public other than as a result of a disclosure by the Unit Operator or an affiliate in violation of this provision; (ii) the Unit Operator or an affiliate already possessed on a non-confidential basis; or (iii) the Unit Operator or an affiliate is obligated to disclose by law, subpoena, or the order of a court or other governmental entity having jurisdiction.

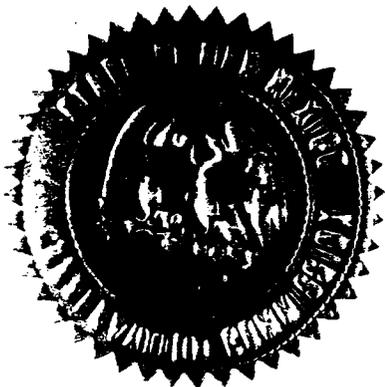
RULE 10. Completions within the Unitized Formation underlying the Unit Project Area by anyone other than the Unit Operator are prohibited.

RULE 11. These Special Project Rules and Operating Procedures shall not apply to any well that does not penetrate the Morrow Formation within the Grama Ridge Morrow Gas Storage Unit Project Area.

(2) The Special Project Rules and Operating Procedures for the Grama Ridge Morrow Gas Storage Unit Area shall become effective May 1, 2001.

(3) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

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



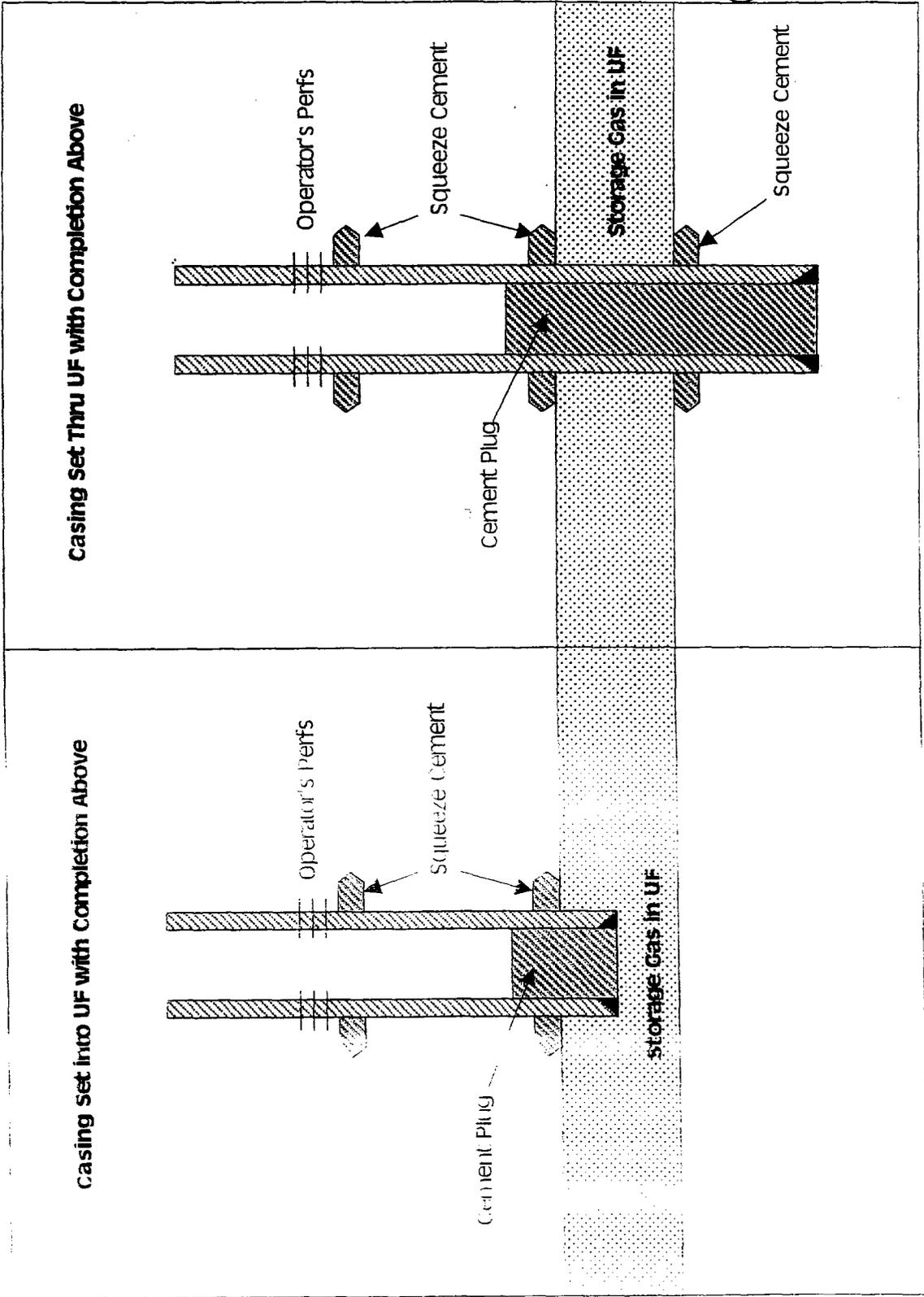
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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in cursive script that reads "Lori Wrottenbery".

LORI WROTENBERY
Director

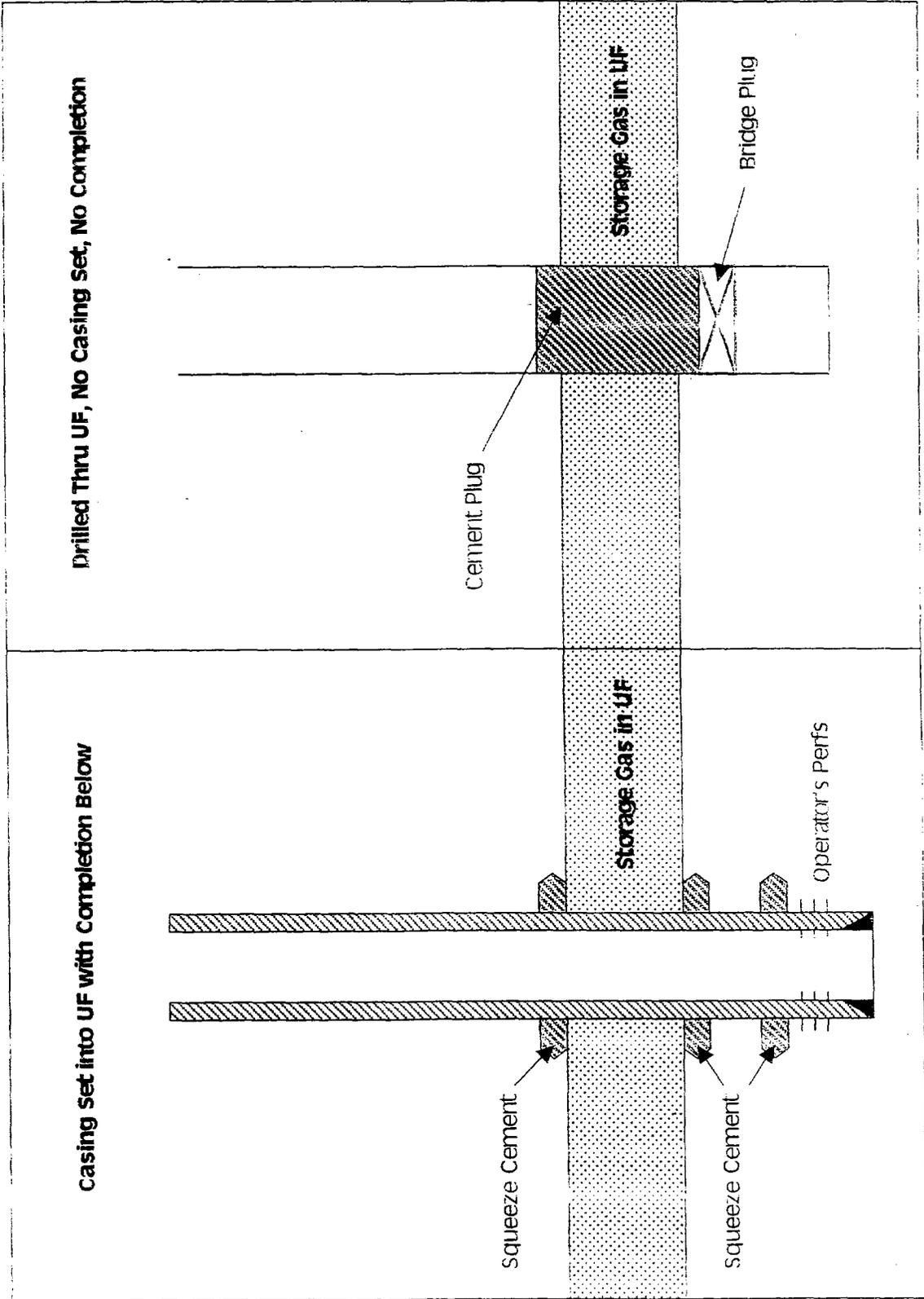
Rule 6(b)



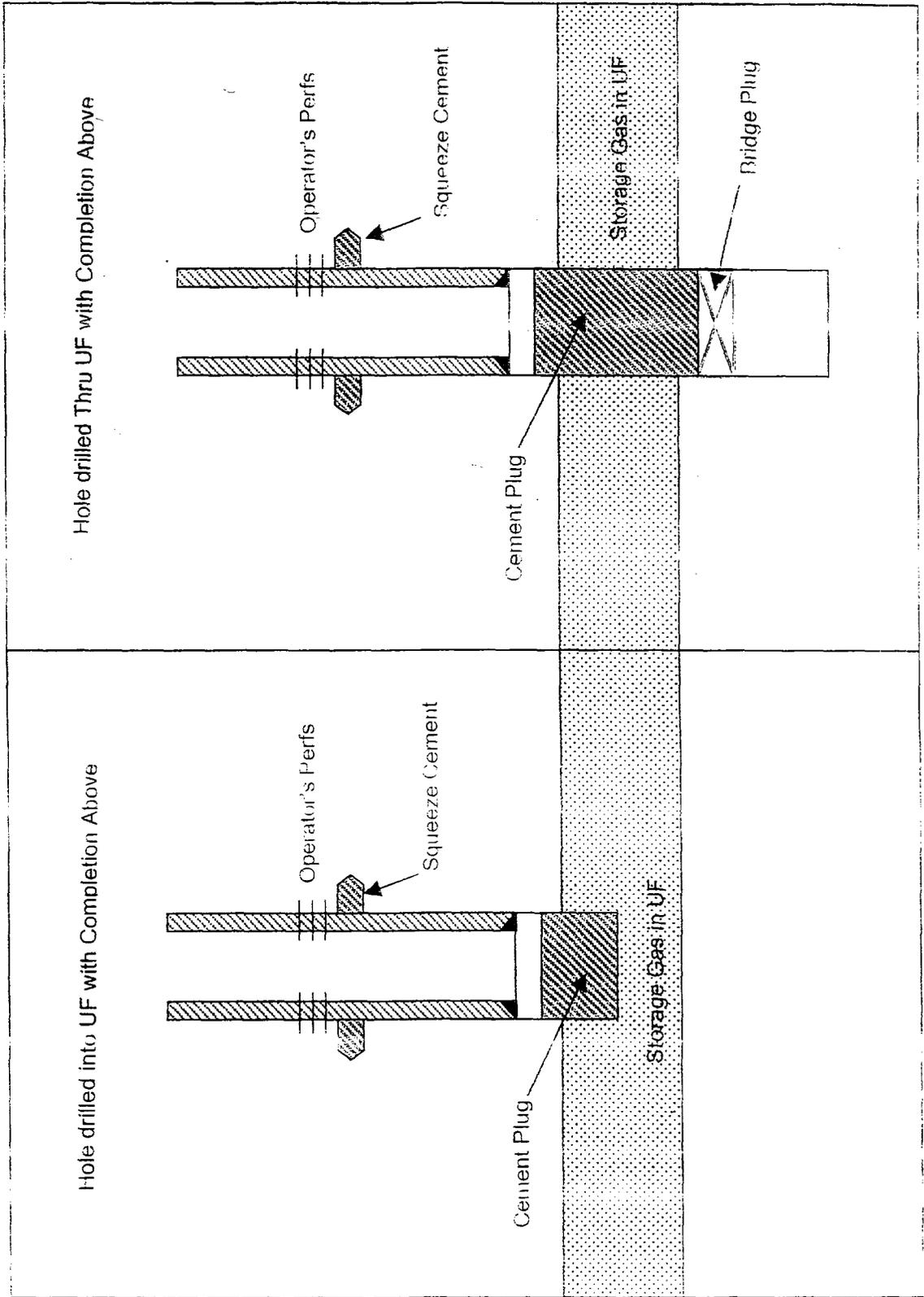
Exhibit

Rule 7(b)

Rule 8(b)



Rule 6(c)



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

15

**IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION DIVISION FOR
THE PURPOSE OF CONSIDERING:**

**CASE NO. 12622
ORDER NO. R-11768**

**APPLICATION OF NEARBURG EXPLORATION COMPANY, L.L.C. FOR TWO
NON-STANDARD GAS SPACING UNITS, LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on June 28 and July 26, 2001, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 22nd day of May, 2002, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) The applicant, Nearburg Exploration Company, L.L.C. ("Nearburg"), seeks exception to the spacing provisions of Division Rule 104.C (2), revised by Division Order No. R-11231, issued by the New Mexico Oil Conservation Commission in Case No. 12119 on August 12, 1999, in order to create two non-standard 160-acre spacing units within the East Grama Ridge-Morrow Gas Pool comprising: (i) the NE/4 of Section 34, Township 21 South, Range 34 East, NMPM, Eddy County, New Mexico, to be dedicated to the Nearburg Producing Company's existing Grama Ridge East "34" State Well No. 1 (API No. 30-025-34948), located at a standard gas well location 1548 feet from the North line and 990 feet from the East line (Unit H) of Section 34; and (ii) the SE/4 of Section 34 to be dedicated to the EOG Resources, Inc.-operated Liano "34" State Well No. 1 (API No. 30-025-26318), located at a standard gas well location 1550 feet from the South line and 660 feet from the East line (Unit D) of Section 34.

(3) The E 2 of Section 34 is included in the East Grama Ridge-Morrow Gas Pool and the W 2 of the section is in the Grama Ridge-Morrow Gas Pool. Both pools are subject to Division Rule 104.C (2), as revised, which provides for 800-acre spacing units comprising any two contiguous quarter sections of a single governmental section and

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provides for infill development (a total of two wells per unit); provided however, there can only be one well in each quarter section.

(4) All of Section 34 is within the Grama Ridge Morrow Gas Storage Unit Area, which was unitized for the purpose of gas injection, storage, and withdrawal within a portion of the Morrow formation, as provided for by Division Order No. R-11611, issued in consolidated cases No. 12441 and 12588 on July 3, 2001.

(5) Redrock Operating Ltd., Co. of Coppel, Texas ("Redrock"), an overriding royalty interest owner in the SE/4 of Section 34, appeared at the hearing and presented evidence in opposition to the application. Raptor Natural Pipeline, LLC, operator of the Grama Ridge Morrow Gas Storage Unit Area and a unit well in the W/2 of Section 34, and Wayne Newkumet, James E. Brown, Brent D. Hilliard, Wendel Creech, and David F. Alderks, all of Midland, Texas and all overriding royalty interest owners in the N/2 of Section 34, appeared through legal counsel but did not oppose Nearburg's request.

(6) On October 10, 1979, the above-described EOG Resources, Inc.-operated Llano "34" State Well No. 1 in the SE/4 of Section 34 (originally drilled by Minerals, Inc.) was completed in the East Grama Ridge-Morrow Gas Pool. A standard 320-acre stand-up gas spacing unit comprising the E/2 of Section 34 was dedicated to the well under a communitization agreement approved October 19, 1979 and made effective May 1, 1979 by the New Mexico State Land Office ("NMSLO"). This well last produced in 1991 and the communitization agreement was terminated by the NMSLO effective March 31, 1991. This 320-acre unit ceased to exist when the well stopped producing and the communitization agreement terminated.

(7) Evidence indicates that Redrock acquired the working interest in the SE/4 of Section 34 by assignment on March 1, 1998. On May 27, 1999 Redrock assigned its interest to Roco Resources Company, Inc. of Midland, Texas, reserving however a 10% overriding royalty interest.

(3) The evidence presented by Nearburg and the records of the Division establish that:

- (a) State of New Mexico Oil and Gas Lease No. K-03592 covering the N/2 of Section 34 was cancelled by the NMSLO in January, 1999;
- (b) a new oil and gas lease covering the N/2 of Section 34 was offered by the NMSLO at the December, 1999 lease sale; the NMSLO request for bids contained no stipulations or reservations concerning the existence of the Grama Ridge

Morrow Gas Storage Unit;

- (c) Great Western Drilling Company of Midland, Texas was the successful bidder and received a new oil and gas lease (Lease No. V-05683) covering the N/2 of Section 34 that became effective January 1, 2000;
- (d) Nearburg later acquired 75% of the interest of Great Western Drilling Company in the N/2 of section 34. On February 28, 2000 the Division's district office in Hobbs approved Nearburg Producing Company's "*Application for Permit to Drill ("APD")*" (Division Form C-101 with Form C-102 attached) for its above-described Grama Ridge East "34" State Well No. 1 at a standard gas well location on a standard 320-acre lay-down gas spacing unit comprising the N/2 of Section 34;
- (e) the Grama Ridge East "34" State Well No. 1 was drilled in March, 2000 to a depth of 13,500 feet and completed as a Morrow gas well on June 9, 2000; on June 19, 2000 the Division's Hobbs district office approved Nearburg Producing Company's "*Request for Allowable and Authorization to Transport*" (Division Form C-104), and on June 22, 2000 approved a testing allowable for the well;
- (f) in July, 2000 Nearburg Producing Company was notified by the Division's Hobbs district office that the previously authorized lay-down N/2 spacing unit included acreage from two separate Morrow gas pools [see Finding Paragraph No. (3) above];
- (g) Nearburg filed an administrative application pursuant to Division Rule 104.D, as revised, with the Division's Santa Fe office on January 8, 2001 for the two subject 160-acre non-standard gas spacing units within the E/2 of Section 34;
- (h) due to inadequate notification pursuant to Division Rule 1207.A (3), the administrative application was ruled incomplete by the Division on February 5, 2001, and Nearburg was duly informed by letter to provide such notice;
- (i) subsequent to Nearburg's notification, Redrock filed

objections in a timely manner with the Division on February 12 and 14, 2001; the application was then set for hearing before a Division Examiner;

- (j) pending the hearing, the Grama Ridge East "34" State Well No. 1 was allowed to continue producing gas from the East Grama Ridge-Morrow Gas Pool;
- (k) at the conclusion of the June 28, 2001 hearing, a four-week continuance was granted in order to give all the parties in this matter the opportunity to reach a mutually acceptable agreement; and
- (l) at the July 26, 2001 hearing, the Examiner ordered Nearburg to shut-in its Grama Ridge East "34" State Well No. 1 because an agreement had not been reached.

(9) The evidence and testimony presented in this case and in Division Cases No. 12441 and 12588 [see Paragraph Nos. (8) and (9) of Division Order No. R-11611] indicate that although the Nearburg Producing Company-operated Grama Ridge East "34" State Well No. 1 is completed in and producing from the Morrow formation, it is not in communication with the unitized interval of Raptor Natural Pipeline LLC's Grama Ridge Morrow Gas Storage Unit.

(10) Nearburg Exploration Company, LLC presented engineering and geological testimony in support of its application, which the Division finds inconclusive for the following reasons:

- (a) Nearburg developed a P/Z curve with bottom-hole flowing pressures instead of static reservoir pressures, and for a deep gas well such as the Grama Ridge East "34" State Well No. 1, the difference between the static reservoir pressures and bottom-hole flowing pressures can be substantial.
- (b) The gas compressibility factors or the gas formation factors (the Z-factor) and the gas formation volume factors (Bg) depend on and change with temperature and pressure. When the pressures and the temperatures are incorrect, the calculated P/Z values are erroneous, therefore a plot of P/Z versus cumulative production will give a wrong slope, which translates into a wrong Initial Gas in Place and

Estimated Ultimate Recovery (EUR)*. Nearburg arrived at an estimated ultimate recovery of 1.1 Bcf using the material balance method, which Nearburg's witness admitted to be too low.

- (c) The decline curve analysis presented by Nearburg is not precise enough to support any conclusion about the ultimate recovery from the Grama Ridge East "34" State Well No.1. Nearburg's witness testified that the well is declining between 50 and 82 percent annually, with probable estimated ultimate recovery of 1.7 Bcf. A range of 50 to 82 percent is too wide to use as a basis for estimating ultimate recovery.
- (d) Nearburg's witness calculated an estimated ultimate recovery of 2.7 Bcf from the geological isopach map of the Grama Ridge East Morrow sands.
- (e) Haas Petroleum Consultants conducted volumetric analysis for Nearburg and demonstrated that the estimated ultimate recovery is about 3.0 Bcf. The ultimate recovery as presented in Nearburg's testimony ranges from 1.1 to 3.0 Bcf.
- (f) Using an estimated ultimate recovery of 1.7 Bcf, Nearburg presented testimony that the size of the reservoir is between 140 and 165 acres. If the size of the reservoir is between 140 and 165 acres, we can calculate the drainage radius to be between 1393 and 1513 feet respectively. Since the well is located in the NE/4 of Section 34, Township 21 South, Range 34 East, NMPM, Eddy County, New Mexico, at a standard gas well location 1548 feet from the North line and 990 feet from the East line (Unit H), it is probable that the SE/4 of Section 34 is contributing recoverable hydrocarbons in this interval even under Nearburg's conservative estimates of ultimate recovery.

*EUR is calculated as follows: $EUR = [P_i/Z_i - P_a/Z_a]/\text{slope}$ where i indicates initial conditions and a indicates abandonment conditions.

(11) There is insufficient evidence to support Nearburg's contentions about the size, shape, and orientation of this producing interval or to show that the SE/4 does not contribute recoverable hydrocarbons in this interval.

(12) The application of Nearburg for approval of two non-standard 160-acre gas spacing units within the East Grama Ridge-Morrow Gas Pool comprising the NE/4 of Section 34 and the SE/4 of Section 34 should be **denied**.

(13) All past and any future Morrow gas production from the Nearburg Grama Ridge East "34" State Well No. 1, as described above, should be allocated to either: (i) the N/2 of Section 34, being a standard 320-acre lay-down gas spacing unit, in either the East Grama Ridge-Morrow Gas Pool or the Grama Ridge-Morrow Gas Pool, depending on the necessary adjustment to the pool boundaries to be sought through the Division's nomenclature process; or (ii) the E/2 of Section 34, being a standard 320-acre stand-up gas spacing unit in the East Grama Ridge-Morrow Gas Pool.

IT IS THEREFORE ORDERED THAT:

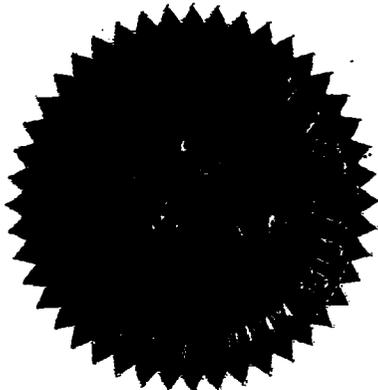
(1) The application of Nearburg Exploration Company, L.L.C., for an exception to the spacing provisions of Division Rule 104.C (2) creating two non-standard 160-acre spacing units within the East Grama Ridge-Morrow Gas Pool comprising: (i) the NE/4 of Section 34, Township 21 South, Range 34 East, NMPM, Eddy County, New Mexico, to be dedicated to the Nearburg Producing Company's existing Grama Ridge East "34" State Well No. 1 (API No. 30-025-34948), located at a standard gas well location 1548 feet from the North line and 990 feet from the East line (Unit H) of Section 34; and (ii) the SE/4 of Section 34 to be dedicated to the EOG Resources, Inc. Llano "34" State Well No. 1 (API No. 30-025-26318), located at a standard gas well location 1650 feet from the South line and 660 feet from the East line (Unit I) of Section 34, is hereby **denied**.

(2) The above-described Nearburg Producing Company Grama Ridge East "34" State Well No. 1 shall remain shut-in pending the following:

- (a) establishment of a standard 320-acre stand-up gas spacing unit comprising the N/2 or the E/2 of Section 34; and
- (b) designation of a single Division-approved operator for this unit and the applicable well dedicated thereto.

(3) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

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



SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

LORI WROTENBERY
Director

**GRAMA RIDGE MORROW UNIT
WELL COMPLETIONS/RE-COMPLETIONS
MORROW FORMATION**

WELL	SECTION	DATE
GRMU #1	3	08/19/65
GRMU #2	34	03/18/66
GRMU #3	33	12/01/66*
GRMU #4	4	06/01/65

*Re-completion

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OPERATOR	

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

SEP 15 12 52 PM '65

MAIN
'65 SEP 15 12 52 PM '65

Form C-105
Revised 1-1-65

5a. Indicate Type of Lease
State Fee

5. State Oil & Gas Lease No.
NM-1692

1a. TYPE OF WELL
OIL WELL GAS WELL DRY OTHER _____

b. TYPE OF COMPLETION
NEW WELL WORK OVER DEEPEN PLUG BACK DIFF. RESVR. OTHER _____

2. Name of Operator
Shell Oil Company, Western Division

3. Address of Operator
P. O. Box 1509, Midland, Texas 79704

4. Location of Well
UNIT LETTER **E** LOCATED **1980** FEET FROM THE **north** LINE AND **660** FEET FROM

THE **west** LINE OF SEC. **3** TWP. **22S** RGE. **34E** NMPM

7. Unit Agreement Name
8. Form or Lease Name
GRA State

9. Well No.
1

10. Field and Pool, or Wildcat
Wildcat

12. County
Lea

15. Date Spudded **6-1-65** 16. Date T.D. Reached **8-9-65** 17. Date Compl. (Ready to Prod.) **August 19, 1965**

18. Elevations (DF, RKB, RT, GR, etc.) **3644' DF** 19. Elev. Casinghead **-**

20. Total Depth **13,257'** 21. Plug Back T.D. **13,207'** 22. If Multiple Compl., How Many **-**

23. Intervals Drilled By
Rotary Tools **0-13,257'** Cable Tools **-**

24. Producing Interval(s), of this completion - Top, Bottom, Name
12,827' - 12,847' Pennsylvanian

25. Was Directional Survey Made
No

26. Type Electric and Other Logs Run
GR/S, 2ILL8, ML Proximity

27. Was Well Cored
Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
16"	65#	370'	20"	400 sx.	-
10-3/4"	51# & 55.5#	5643'	15"	1000 sx.	-
7-5/8"	29.7# & 33.7#	11,820'	9-5/8"	1200 sx.	-

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
5-1/2"	11,474'	13,252'	260		2-7/8"	12,700'	12,700'

30. TUBING RECORD

31. Perforation Record (Interval, size and number)
12,827', 12,829', 12,831', 12,837', 12,839', 12,843', 12,845' 1/ft. 12,847'

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

33. PRODUCTION

Date First Production **August 19, 1965** Production Method (Flowing, gas lift, pumping - Size and type pump) **Flowing** Well Status (Prod. or Shut-in) **Shut in**

Date of Test 8-19-65	Hours Tested 24	Choke Size 21/64"	Prod'n. For Test Period →	Oil - Bbl. -	Gas - MCF 26.5MMCF	Water - Bbl. -	Gas - Oil Ratio -
Flow Tubing Press. 4090	Casing Pressure -	Calculated 24-Hour Rate →	Oil - Bbl. -	Gas - MCF 26.5 MMCF	Water - Bbl. -	Oil Gravity - API (Corr.)	

34. Disposition of Gas (Sold, used for fuel, vented, etc.) **Vented** Test Witnessed By **A. L. Ellerd**

35. List of Attachments
Drill Stem Tests

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

Acting District
Exploitation Engineer

SIGNED **C. R. Coffey** C. R. Coffey TITLE **Exploitation Engineer** DATE **September 10, 1965**

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of wells and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be supplied by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 25, below, regarding separate reports for separate completions.

The log filed prior to the completion of the well should be recorded in separate logs (drill-log rock-stratigraphic sample and core analysis, all types, electric, etc.) forms. The log and pressure, casing, and production logs, should be attached hereto, as the extent required by applicable Federal and/or State laws and regulations. All attachments should be filed in the same file as the well log.

Item 4: If there are no applicable State requirements, regulations or Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for applicable instructions.

Item 18: Indicates which deviation is used as reference (if not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Item 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion) or not state in item 22, and in item 24 show the producing interval of intervals, top(s) and bottom(s) and name(s) (if any) for only the interval reported in item 88. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 25: "Geologic Correlation": Attached supplemental reports for this well should show the details of any multiple stage completion and the location of the cementing tool joint.

Item 31: Submit a separate completion report on this form for each interval for each well.

87 SUMMARY OF FIELDS ZONES:
 SHOW ALL IMPORTANT NAMES OF FIELDS AND ZONES AND CORRELATE THEM TO THE CORRELATION CHARTS AND STRATIGRAPHIC TESTS, INCLUDING DEPTH INTERVAL ENERGY, QUANTITIES USED, TIME, TYPE OF OPERATIONS AND SURFACE PLACEMENT, AND RECOMMENDATIONS.

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LAND OFFICE	
OPERATOR	

Form C-105
Revised 1-1-65

NEW MEXICO OIL CONSERVATION BOARD OFFICE
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

MAR 25 3 58 PM '66
APR 2 1966

6a. Indicate Type of Lease
State Fee
5. State Oil & Gas Lease No. **10659**

1a. TYPE OF WELL
OIL WELL GAS WELL DRY OTHER _____
b. TYPE OF COMPLETION
NEW WELL WORK OVER DEEPEN PLUG BACK DIFF. RESVR. OTHER _____

7. Unit Agreement Name
8. Farm or Lease Name
GRB State
9. Well No.
1
10. Field and Pool, or Wildcat
Gramma Ridge-Morrow Gas

2. Name of Operator
Shell Oil Company - (Western Division)
3. Address of Operator
P. O. Box 1509, Midland, Texas 79701
4. Location of Well

NIT LETTER **L** LOCATED **1980** FEET FROM THE **south** LINE AND **660** FEET FROM

11. WESTLINE OR SEC. **34** TWP **21S** RGE. **34E** NMPM

12. County
Lea

5. Date Spudded **10-27-65** 16. Date T.D. Reached **2-23-66** 19. Date Compl. (Ready to Prod.) **3-18-66** 18. Elevations (DF, RKB, RT, GR, etc.) **3651' DF** 19. Elev. Casinghead

10. Total Depth **14,603'** 21. Plug Back T.D. **13,194'** 22. If Multiple Compl. How Many
23. Intervals Drilled By
Rotary Tools **0-14,603'** Cable Tools

4. Producing Interval(s), of this completion - Top & Bottom, Name
13,921'-13,056' Morrow-Pennsylvanian
25. Was Directional Survey Made
Yes

6. Type Electric and Other Logs Run
GR/N, BHC/Sonic-GR, Proximity-Micro Log, Micro Log, DI-L
27. Was Well Cored
No

8. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	94#	362'	26"	500	-
13 3/8"	72#, 68#, 61#	5726'	17 1/2"	900	-
9 5/8"	53.5#	11897'	12 1/4"	1000	-

9. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
7"	11571'	14082'	860	2111'	2 1/2"	12,788'	12,788'

30. TUBING RECORD

1. Perforation Record (Interval, size and number)

12,921', 12,922', 12,924', 12,926', 12,928', 12,930', 12,932', 12,934', 13,020', 13,022', 13,051', 13,056'

1 JSPF 2"

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

3. PRODUCTION

ate First Production **3-18-66** Production Method (Flowing, gas lift, pumping - Size and type pump) **Flowing** Well Status (Prod. or Shut-in) **Producing**

ate of Test **3-21-66** Hours Tested **24** Choke Size **12/64"** Prod'n. For Test Period **60** Bbl. Cond. Gas - MCF **31,753** Water - Bbl. **-** **GLR** **142 MCF/bbl**

low Tubing Press. **5890-5609** Casing Pressure **-** Calculated 24-Hour Rate **60** Bbl. Cond. Gas - MCF **31,753** Water - Bbl. **-** Gravity - API (Corr.) **48.8°**

4. Disposition of Gas (Sold, used for fuel, vented, etc.) **Sold** Test Witnessed By **A. L. Ellerd**

5. List of Attachments
Drill Stem Tests

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED J. D. Duren J. D. Duren TITLE Staff Exploitation Engineer DATE March 23, 1966

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

- | | | | |
|----------------------------------|--------------------------------|-----------------------------|------------------------|
| T. Anhy _____ | T. Canyon _____ | T. Ojo Alamo _____ | T. Penn. "B" _____ |
| T. Salt 1706' (+1945') | T. Strawn _____ | T. Kirtland-Fruitland _____ | T. Penn. "C" _____ |
| B. Salt _____ | T. Atoka _____ | T. Pictured Cliffs _____ | T. Penn. "D" _____ |
| T. Yates 3950' (-299') | T. Miss. Ls. 13828' (-10,177') | Cliff House _____ | T. Leadville _____ |
| T. 7 Rivers 4423' (-772') | T. Devonian _____ | T. Menefee _____ | T. Madison _____ |
| T. Queen _____ | T. Silurian 14,444' (-10,793') | Point Lookout _____ | T. Elbert _____ |
| T. Grayburg _____ | T. Montoya _____ | T. Mancos _____ | T. McCracken _____ |
| T. San Andres _____ | T. Simpson _____ | T. Gallup _____ | T. Ignacio Qtzte _____ |
| T. Ghorjeta _____ | T. McKee _____ | Base Greenhorn _____ | T. Granite _____ |
| T. Paddock _____ | T. Ellenburger _____ | T. Dakota _____ | T. _____ |
| T. Blinebry _____ | T. Gr. Wash _____ | T. Morrison _____ | T. _____ |
| T. Tubb _____ | T. Granite _____ | T. Todilto _____ | T. _____ |
| T. Drinkard _____ | T. Delaware Sand _____ | T. Entrada _____ | T. _____ |
| T. Abo _____ | T. Bone Springs 8240' (-4589') | Wingate _____ | T. _____ |
| T. Wolfcamp 11,277' (-7626') | Delaware Mtn. 5567' (+1916') | _____ | T. _____ |
| T. Penn. _____ | T. _____ | T. Permian _____ | T. _____ |
| T. Cisco (Bough) _____ | T. Des Moines 11,680' (-8029') | Penn. "A" _____ | T. _____ |
| Atoka 11,963' (-8312') | Woodford 14,288' (-10,637') | | |
| Morrow Clastics 12,750' (-8889') | | | |

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1700	1700	Red Beds				
1700	5560	3860	Anhydrite, Salt, & Limestone				
5560	8970	3410	Limestone & Sandstone				
8970	11890	2920	Limestone, Sandstone, Chert & Shale				
11890	12520	630	Limestone & Shale				
12520	12720	200	Limestone, Shale, Sandstone & Chert				
12720	12840	120	Limestone & Shale				
12840	13100	260	Sandstone, Siltstone, & Shale				
13100	14450	1350	Shale & Limestone				
14450	14600	150	Dolomite				

NOV 22 3 29 PM '22
GEOLOGICAL

Attachment for NMOCC Form C-105
Dated March 23, 1966

HOBBS OFFICE O. G. C.
Shelley Oil Company

MAR 25 6 58 PM '66
MAR 25 6 58 PM '66
APR 4 AM 8:05
Section 34, T-21-S, R-34-E,
NMPM Survey, Lea County, New Mexico.

DST #1: 12,680'-12,937' (257' Morrow). Nitrogen valve at 10,487'. 2450' Nitrogen blanket pressured to 1535 psi surface pressure. Tool open 247 minutes, including 17 minutes pre-flow, thru 5/8" BC, 1" TC, 4 1/2" DP w/strong blow. Nitrogen to surface 4 minutes. Mud to surface 14 minutes. GTS 15 minutes. Flowed to pits 20 minutes. Turned thru separator and flowed at following rates: (Variable choke not operating properly).

<u>Flow Time</u>	<u>Flowing Surface Pressure</u>	<u>Rate</u>
15 minutes	3000 psi	-
30 minutes	5500 psi	-
45 minutes	5100 psi	-
55 minutes	5000 psi	-
75 minutes	4700 psi	11 MMCFPD
90 minutes	4500 psi	13 MMCFPD
110 minutes	4200 psi	-
125 minutes	4000 psi	15 MMCFPD
130 minutes	4000 psi	-

Total liquid recovered while flowing 3.3 BC + 3 bbls BS&W.
Gas Gr. 0.592 w/no CO₂ or H₂S. Condensate Gr. 51.8° API.
Total pipe recovery 50' (0.51 bbls.) condensate. No water recovery.
Pit mud filtrate titration 1500 ppm Cl⁻. 100 minutes ISIBHP 7682 psi.
FBHP 5648-6784 psi. 208 minutes FSIBHP 7682 psi. HMP 8460-8341 psi.
BHT 177°F. Positive Test. (Cook)

DST #2: 14,475'-14,603' (128' Silurian Dolomite). 1000' Nitrogen blanket pressured to 1475 psi. Tool open 150 minutes, 5 minutes preflow, thru 5/8" BC, 1" TC, 3 1/2" & 4 1/2" DP with fair to medium blow increased to strong in 10 minutes & decreased to no blow in 45 minutes. NGTS. Recovered 670' (10 bbls.) slightly gas cut mud + 5000' (45 bbls.) salty sulfur water. 150 minutes ISIBHP 6162 psi. FBHP 2319-2270 psi. 150 minutes FSIBHP 6162 psi. HMP 7198-7198 psi. Positive Test. (Cook)

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT**

FORM C-128
Revised 5/1/57

SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

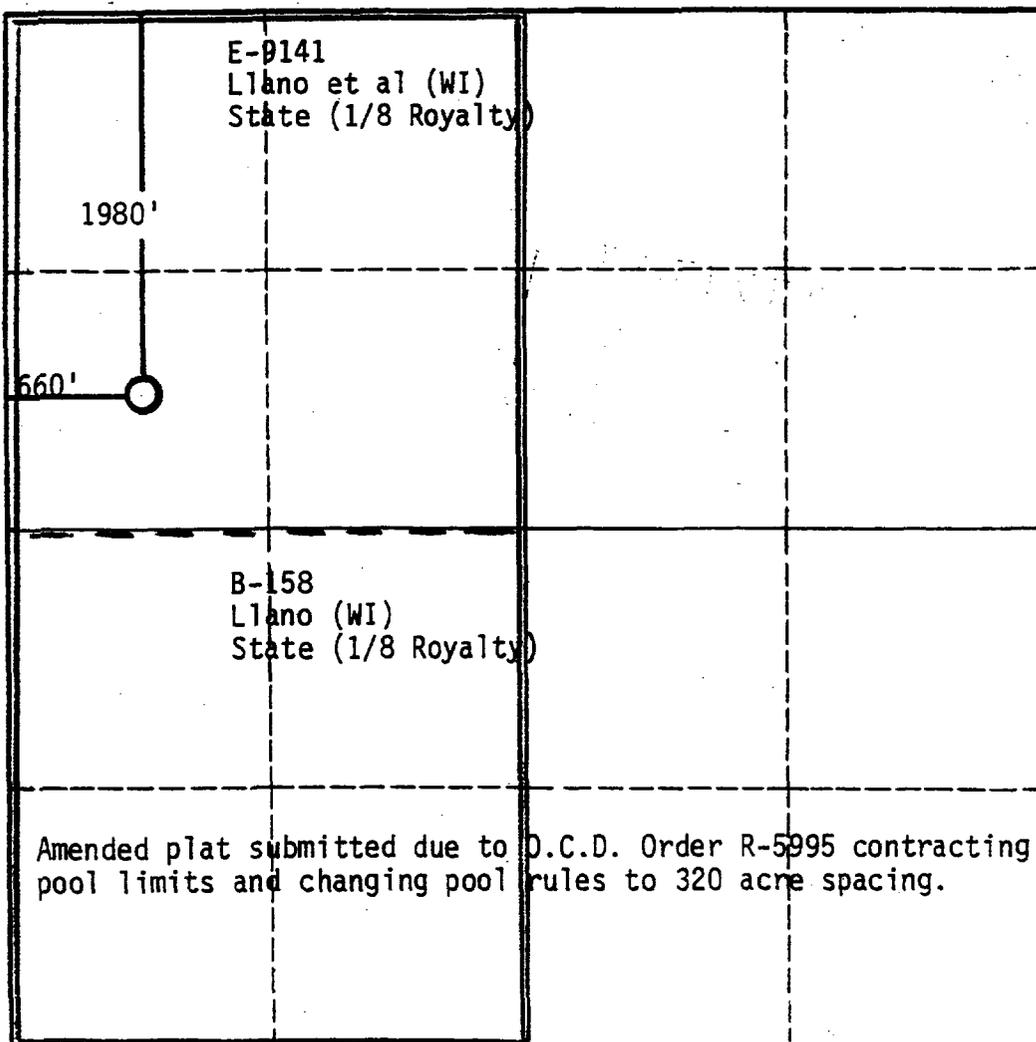
SECTION A

Operator Llano, Inc.		Lease Grama Ridge Morrow Unit		Well No. 1
Unit Letter E	Section 3	Township 22 South	Range 34 East	County Lea
Actual Footage Location of Well: 660 feet from the West line and 1980 feet from the North line				
Ground Level Elev. 3630	Producing Formation Morrow		Pool Grama Ridge Morrow (Gas)	Dedicated Acreage: 320 Acres

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES _____ NO X . ("Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1935 Comp.)
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communization agreement or otherwise? YES X NO _____. If answer is "yes," Type of Consolidation Unit Agreement
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner	Land Description

SECTION B



CERTIFICATION

I hereby certify that the information in SECTION A above is true and complete to the best of my knowledge and belief.

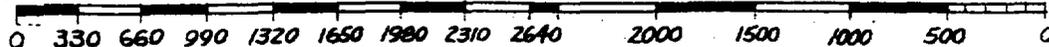
Name Al Klaar
 Position Mgr. Pet. & N.G. Engr.
 Company Llano, Inc.
 Date May 2, 1979

I hereby certify that the well location shown on the plat in SECTION B was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed 5-29-65
 Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No.



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LAND OFFICE	
OPERATOR	

NEW MEXICO OIL AND GAS ADMINISTRATION COMMISSION

Dec 7 1 21 PM '66

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease
State Fee

5. State Oil & Gas Lease No.
E-7574

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL GAS WELL OTHER-

2. Name of Operator
Sinclair Oil & Gas Company

3. Address of Operator
Shell Oil Company (Western Division) P. O. Box 1509, Midland, Tex. 79701

4. Location of Well
UNIT LETTER J, 1980 FEET FROM THE south LINE AND 1980 FEET FROM THE east LINE, SECTION 33 TOWNSHIP 21S RANGE 34E NMPM.

7. Unit Agreement Name
South Wilson Deep Unit

8. Farm or Lease Name
South Wilson Deep Unit

9. Well No.
701 2

10. Field and Pool, or Wildcat
Gramma Ridge (Morrow Gas)

15. Elevation (Show whether DF, RT, GR, etc.)
3656' DF

12. County
Lea

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input checked="" type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	OTHER <input type="checkbox"/>

7. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

October 10, 1966 thru December 1, 1966.
Recompleted from Bone Spring to Morrow Gas.

1. Pulled tubing & packer.
2. Squeezed Bone Spring perforations 10,675' - 10,711' w/150 sx. Trinity Inferno Slo-set cement at 5500 psi.
3. Pressured casing to 5000 psi, pressure dropped to 500 psi in 15 mins.
4. Resqueezed perforations w/75 sx. Trinity Inferno Slo-set cement at 6000 psi. Top of cement 10,428'.
5. Drilled firm cement 10,428' - 10,712'.
6. Pressured casing to 5000 psi for 30 minutes, no pressure drop.
7. Cleaned out to 13,350' (PBSD).

8. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Shell Oil Company as Sub-operator
and agent
SIGNED J. D. Duren J. D. Duren TITLE Staff Petrophysical Engineer DATE December 5, 1966

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

8. Ran 364 jts. (11,378') 2 7/8", EUE, 8rd, N-80 tubing, hung tubing at 11,394'. Baker Model "D" production packer at 11,400'.
9. Installed wellhead equipment.
10. Pressure tested via tubing to 8000 psi, no pressure drop. Pressured annulus to 5000 psi, no pressure drop. Pressure tested wellhead equipment to 10,000 psi, no pressure drop.
11. Perforated Morrow 13,031', 13,036', 13,038', 13,039', 13,042', 13,045', 13,051', 13,061', 13,064', 13,066', 13,068', 13,072', 13,075', 13,077' w/1-3/8" JSPF (total 14 holes).
12. In 20 1/2 hrs. flowed at rate of 4.3 MMCFPD + 37 BC thru 48/64" choke. FTP 850 psi.
13. Re-perforated 13,246', 13,248', 13,250', 13,252', 13,061', 13,065', 13,067', 13,069', 13,073', 13,075', 13,077', w/1-1 11/16" JSPF & at 13,029', 13,034', 13,036', 13,038', 13,040', 13,042', 13,045', & 13,051' w/2-1 11/16" JSPF.
14. On CAOFP flowed at rate 4.635 MMCFPD + 5.5 BC/MMCF thru 24/64" choke. FTP 1085 psi. Condensate Gravity 50.5° API.

DEC 1 1 ST LN .PP

11/27/72

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OPERATOR	

Form C-105
Revised 1-1-65

HOBBS OFFICE O. C. C.
NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG
JUN 30 11 27 AM '66

Indicate Type of Lease
State Fee
State Oil & Gas Lease No.
E-7574

a. TYPE OF WELL
 OIL WELL GAS WELL DRY OTHER

b. TYPE OF COMPLETION
 NEW WELL WORK OVER DEEPEN PLUG BACK DIFF. RESVR. OTHER

1. Name of Operator
Sinclair Oil Company

2. Address of Operator
Shell Oil Company (Western Division) P. O. Box 1509, Midland, Texas 79701

3. Location of Well
NIT LETTER J LOCATED 1980 FEET FROM THE south LINE AND 1980 FEET FROM

4. NE east LINE OR SEC. 33 TWP. 21S RGE. 34E NMPM

5. Date Spudded 3-5-66
 16. Date T.D. Reached 5-28-66
 17. Date Compl. (Ready to Prod.) June 27, 1966
 18. Elevations (DF, RKB, RT, GR, etc.) 3656' DF
 19. Elev. Casinghead -

0. Total Depth 13,403'
 21. Plug Back T.D. 13,350'
 22. If Multiple Compl., How Many 2*
 23. Intervals Drilled By Rotary Tools 0 - 13,403'
 Cable Tools -

4. Producing Interval(s), of this completion - Top, Bottom, Name
 10,675' - 10,711' Bone Spring
 13,173' - 13,252' Morrow
 25. Was Directional Survey Made yes

6. Type Electric and Other Logs Run
DIL, BHC-Sonic, Proximity-MicroLog
 27. Was Well Cored no

8. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	48#	375'	17 1/2"	400 sx.	-
9 5/8"	36# & 40#	5706'	12 1/4"	1300 sx.	-
7"	29#	11900'	8 3/4"	650 sx.	

9. LINER RECORD 30. TUBING RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
4 1/2"	11,593'	13,396'	225	1803'	2 1/2"	10,600'	10,600'

1. Perforation Record (Interval, size and number)

Interval	Size	Rate
13,143' - 13,148'	3/8"	1/ft.
13,173' - 13,252'	1 11/16"	1/ft.
10,675' - 10,711'	3/8"	1/ft.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
10,675' - 10,711'	500 gallons 15% NEA
13,143' - 13,148'	Squeezed w/42 sx. at 6500 psi.

3. PRODUCTION

1. Date First Production June 27, 1966	2. Production Method (Flowing, gas lift, pumping - Size and type pump) Flowing	3. Well Status (Prod. or Shut-in) Producing
4. Date of Test June 29, 1966	5. Hours Tested 18	6. Choke Size 7/64"
7. Oil - Bbl. 214	8. Gas - MCF 139	9. Water - Bbl. -
10. Gas - Oil Ratio 650	11. Low Tubing Press. 1800	12. Casing Pressure pkr.
13. Calculated 24-Hour Rate 285	14. Oil - Bbl. 285	15. Gas - MCF 185
16. Water - Bbl. -	17. Oil Gravity - API (Corr.) 42.8 deg.	

4. Disposition of Gas (Sold, used for fuel, vented, etc.)
vented
 Test Witnessed By
W. D. Moore

5. List of Attachments
none

6. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.
 Shell Oil Company as Sub-Operator
 and Agent
 SIGNED J. D. Duren J. D. Duren TITLE Staff Exploitation Engineer DATE June 30, 1966

*Application for Dual applied for.

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy _____	T. Canyon _____	T. Ojo Alamo _____	T. Penn. "B" _____
T. Salt _____	T. Strawn _____	T. Kirtland-Fruitland _____	T. Penn. "C" _____
B. Salt _____	T. Atoka <u>12,056'</u>	T. Pictured Cliffs _____	T. Penn. "D" _____
T. Yates _____	T. Miss _____	T. Cliff House _____	T. Leadville _____
T. 7 Rivers _____	T. Devonian _____	T. Menefee _____	T. Madison _____
T. Queen _____	T. Silurian _____	T. Point Lookout _____	T. Elbert _____
T. Grayburg _____	T. Montoya _____	T. Mancos _____	T. McCracken _____
T. San Andres _____	T. Simpson _____	T. Gallup _____	T. Ignacio Qtzte _____
T. Glorieta _____	T. McKee _____	Base Greenhorn _____	T. Granite _____
T. Paddock _____	T. Ellenburger _____	T. Dakota _____	T. _____
T. Blinebry _____	T. Gr. Wash _____	T. Morrison _____	T. _____
T. Tubb _____	T. Granite _____	T. Todilto _____	T. _____
T. Drinkard _____	T. Delaware Sand _____	T. Entrada _____	T. _____
T. Abo _____	T. Bone Springs <u>8325'</u>	T. Wingate _____	T. _____
T. Wolfcamp <u>11,314'</u>	T. Delaware Mountain <u>5510'</u>	T. Chinle _____	T. _____
T. Penn. _____	T. Des Moines <u>11,741'</u>	T. Permian _____	T. _____
T. Cisco (Bough C) _____	T. Morrow Clastics <u>12,919'</u>	T. Penn. "A" _____	T. _____

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation															
0	1700	1700	Red Beds																			
1700	55630	3930	Anhydrite, Salt, Limestone																			
5630	9908	4278	Limestone & Sand																			
9908	10700	792	Limestone																			
10700	11100	400	Limestone, Dolomite, Chert & Shale																			
11100	11800	700	Limestone, Sand, Chert & Shale																			
11800	12100	300	Limestone, Chert & Shale																			
12100	12700	600	Limestone & Shale																			
12700	12960	260	Limestone, Shale & Sand																			
12960	13403	443	Shale & Sand																			
<p>DST #1: 12,797' - 13,060' (263' Morrow). Tool open 305 minutes (including 5 minutes preflow) thru 5/8" BC, 1" & 3/8" TC, 3 1/2" DP. GTS 20 minutes. Adjustable choke cut out and choke sizes undetermined. Flowed gas as follows:</p> <table border="1"> <thead> <tr> <th>Time</th> <th>Rate MMCF</th> <th>FTP (psi)</th> </tr> </thead> <tbody> <tr> <td>1 hour</td> <td>5.62</td> <td>1600</td> </tr> <tr> <td>1 hour</td> <td>5.901</td> <td>1325</td> </tr> <tr> <td>1 hour 15 mins</td> <td>6.001</td> <td>1100</td> </tr> <tr> <td>45 minutes</td> <td>6.098</td> <td>1065</td> </tr> </tbody> </table>								Time	Rate MMCF	FTP (psi)	1 hour	5.62	1600	1 hour	5.901	1325	1 hour 15 mins	6.001	1100	45 minutes	6.098	1065
Time	Rate MMCF	FTP (psi)																				
1 hour	5.62	1600																				
1 hour	5.901	1325																				
1 hour 15 mins	6.001	1100																				
45 minutes	6.098	1065																				
<p>Recovery in tank 10 BC + 10 BW and mud. Gas Gravity 0.628. Condensate Gravity 50.3 deg. API. Recovered 150' mud and condensate above Nitrogen valve + 110' gas cut condensate above shut in tool. 90 minutes ISIBHP 7880 psi. FBHP 2648 - 2590 psi. 180 minutes FSIBHP 7042 psi. HMP 8567 - 8507 psi. BET 172 deg. <u>CONCLUSIVE TEST.</u> (Cook)</p>																						

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT**

FORM C-122
Revised 5/1/57

SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

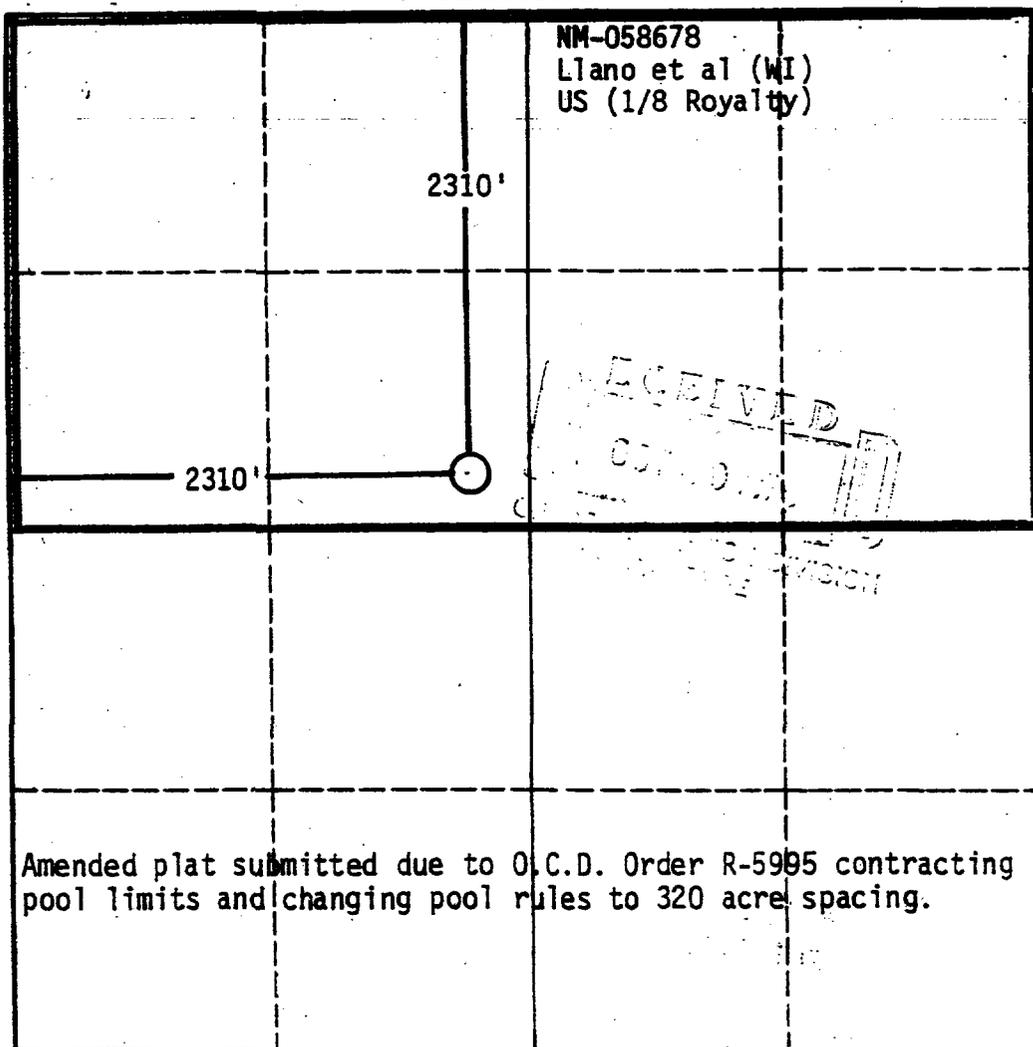
SECTION A

Operator Llano, Inc.		Lease Gram Ridge Morrow Unit		Well No. 4
Unit Letter F	Section 4	Township 22 South	Range 24 East	County Lea
Actual Footage Location of Wells: 2310 feet from the North line and 2310 feet from the West line				
Ground Level Elev. 3630	Producing Formation Morrow	Pool Gram Ridge Morrow (Gas)		Dedicated Acreage: 320 Acres

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES _____ NO X ("Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1935 Comp.)
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communization agreement or otherwise? YES X NO _____. If answer is "yes," Type of Consolidation Unit Agreement
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner	Land Description

SECTION B



Amended plat submitted due to O.C.D. Order R-5995 contracting pool limits and changing pool rules to 320 acre spacing.

CERTIFICATION

I hereby certify that the information in SECTION A above is true and complete to the best of my knowledge and belief.

Al Klaar

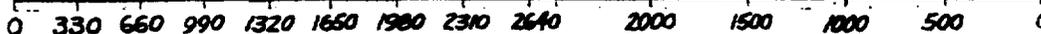
Name Al Klaar
Position Mgr. Pet. & N.G. Engr.
Company Llano, Inc.
Date May 2, 1979

I hereby certify that the well location shown on the plat in SECTION B was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed 11-23-64
Registered Professional Engineer and/or Land Surveyor

T. E. Chapman, Jr.

Certificate No.



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other instructions on reverse side)

Form approved
Budget Bureau No. 1-10000-10

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other

b. TYPE OF COMPLETION: NEW WELL WORK OVER DEEP-EN PLUG BACK DEEP. REEVE Other

2. NAME OF OPERATOR
Shell Oil Company

3. ADDRESS OF OPERATOR
P. O. Box 1852, Roswell, New Mexico 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface **2310' NW & 2310' NW, (SE/4 NW/4) Section 4, T-22-S,**
At top prod. **Section 4, T-22-S, Survey, Lea County, New Mexico**
At total depth

14. PERMIT NO. **114** DATE ISSUED **88**

15. DATE SPUNDED **12-9-64** 16. DATE T.D. REACHED **4-12-65** 17. DATE COMPL. (Ready to prod.) **June 1, 1965** 18. ELEVATIONS (DF, REB, RT, etc.)

20. TOTAL DEPTH, MD & TVD **14,870'** 21. PLUG BACK T.D., MD & TVD

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME, (MD AND TVD)
12,886'-13,111' Pennsylvania Morrow

26. TYPE ELECTRIC AND OTHER LOGS RUN
GR/1, 21 LLS, Proximity

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD
16"	65#	550'	20"	400 SX
10 3/4"	51# & 55#	5711'	13 3/4"	1000 SX
7 5/8"	29.7# & 33.7#	11,895'	9 5/8"	500 SX

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	BACKS CEMENT*	SCREEN (MD)
5 1/2"	11,639'	14,199'	305	
1 1/2"	12,886'	14,870'	100	

31. PREFORMATION RECORD (Interval, size, etc.)

* (See Reverse Side)

DEPTH INTERVAL (MD)	AMOUNT
14,424'-16,570'	4000 GALLONS
12,886'-13,111'	4500 GALLONS
12,886'-13,111'	8000 GALLONS

33. PRODUCTION
DATE FIRST PRODUCTION **6-1-65** PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)
DATE OF TEST **6-1-65** HOURS TESTED **24** PRODUCTION FOR TEST PERIOD
FLOW. TUBING PRESS. CASING PRESSURE CALCULATED 24-HOUR RATE
OIL—BSL. GAS—MCF. WATER—BSL. **CAOYP**

34. PROPOSITION OF GAS (Sold, used for fuel, vented, etc.)
Gas Liquid Ratio 122,840
Gas Gravity 0.593

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records
Original Signed By
SIGNED **C. R. Coffey** TITLE **Acting District Exploitation Engineer** DATE **June 1, 1965**

* (See Instructions and Spaces for Additional Data on Reverse Side)

Form approved
Budget Bureau No. 1-10000-10
1. LEASE DESIGNATION AND NO.
2. WELL NAME
3. WELL NUMBER
4. WELL LOCATION
5. WELL STATUS
6. WELL DEPTH
7. WELL TYPE
8. WELL COMPLETION
9. WELL OPERATOR
10. WELL ADDRESS
11. WELL PERMIT NO.
12. WELL DATE ISSUED
13. WELL DATE SPUNDED
14. WELL DATE T.D. REACHED
15. WELL DATE COMPLETED
16. WELL ELEVATIONS
17. WELL TOTAL DEPTH
18. WELL PLUG BACK DEPTH
19. WELL PRODUCING INTERVAL
20. WELL TYPE ELECTRIC LOGS
21. WELL CASING RECORD
22. WELL LINER RECORD
23. WELL PREFORMATION RECORD
24. WELL PRODUCTION
25. WELL GAS PROPOSITION
26. WELL ATTACHMENTS
27. WELL CERTIFICATION
28. WELL SIGNATURE
29. WELL DATE

INSTRUCTIONS