

CASE 4896: Application of LLANO,  
INC. FOR GAS INJECTION, LEA  
COUNTY, NEW MEXICO.

Case Number

4896

Application  
Transcripts.

Small Exhibits

ETC.

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF LLANO, INC. FOR APPROVAL  
OF THE INJECTION OF GAS INTO THE MORROW  
FORMATION THROUGH THE STATE GRA WELL NO.  
1 LOCATED IN THE SW $\frac{1}{4}$ NW $\frac{1}{4}$  SECTION 3, TOWN-  
SHIP 22 SOUTH, RANGE 34 EAST AND THE  
STATE GRB WELL NO. 1 LOCATED IN THE NW $\frac{1}{4}$ SW $\frac{1}{4}$   
SECTION 34, TOWNSHIP 21 SOUTH, RANGE 34  
EAST SITUATED WITHIN THE GRAMA RIDGE  
MORROW UNIT FOR SECONDARY RECOVERY AND  
GAS STORAGE PURPOSES.

No. 4896

Oil Conservation Commission  
Box 2088  
Santa Fe, New Mexico 87501

Comes Llano, Inc., acting by and through the undersigned attorneys, and hereby makes application for approval of the injection of gas into the Morrow formation through the 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 State GRB Well No. 1 located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 34, Township 21 South, Range 34 East, situated within the Grama Ridge Morrow Unit for secondary recovery and gas storage purposes, and in support thereof respectfully shows:

1. There is attached hereto as Exhibit "A" a plat showing the location of the proposed injection wells and the location of all other wells within a radius of two miles therefrom and the formation from which said wells are producing or have produced. The plat also indicates the owners of the leases within said two mile radius.

2. It is proposed to inject gas into the Morrow formation through the 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 State GRB Well No. 1 located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 34, Township 21 South, Range 34 East, N.M.P.M. for secondary recovery and gas storage purposes.

3. Copies of electrical logs of the proposed injection wells are filed herewith.

4. There are also attached hereto as Exhibits "B" and "C" diagrammatic sketches showing the manner in which it is proposed to complete the injection wells, showing the casing strings, including

diameters and setting depths, quantities used and tops of cement, perforated or open hole intervals, tubing strings, including diameters and setting depths and the type and location of packers, if any.

5. The Grama Ridge Morrow Unit Area which embraces the two sections hereinabove referred to containing 1280 acres covers a part of the Grama Ridge Morrow Gas Pool as designated by the Oil Conservation Commission and said wells are completed in the Morrow formation.

6. Applicant believes that the injection of gas as above set forth for secondary recovery and gas storage purposes will be in the interest of conservation and the prevention of waste and will tend to protect correlative rights.

7. Applicant requests that this matter be included on the docket for the examiner's hearing on January 17, 1973.

Respectfully submitted,

LLANO, INC.

BY 

HINKLE, BONDURANT, COX & EATON  
P.O. Box 10  
Roswell, New Mexico 88201  
Attorneys for Applicant



LLANO, INC.  
STATE GRA No. 1  
GRAMA RIDGE MORROW UNIT  
GRAMA RIDGE FIELD  
LEA COUNTY, NEW MEXICO

- DIAGRAMMATIC SKETCH -  
ELEV. 3644' DF

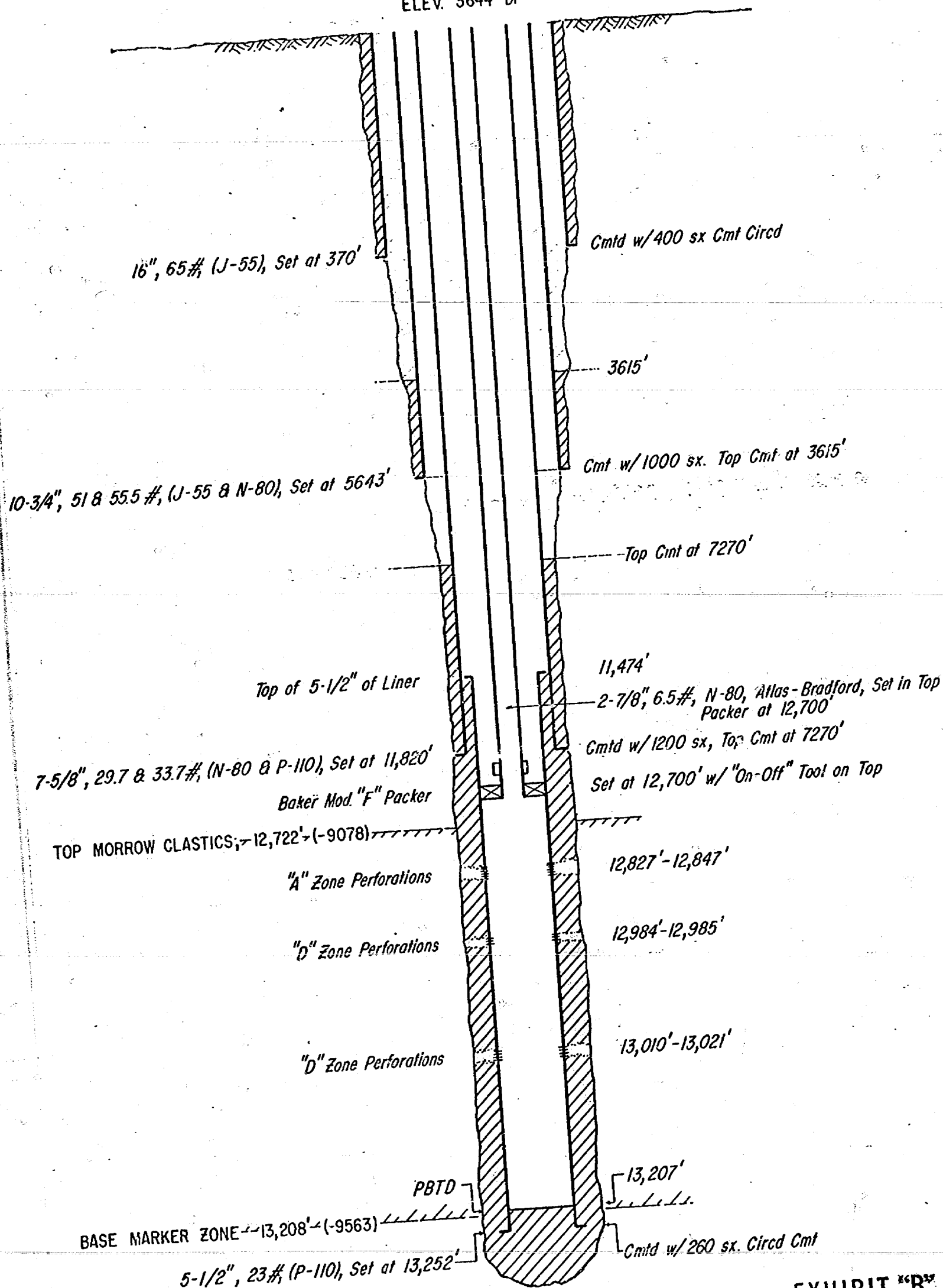
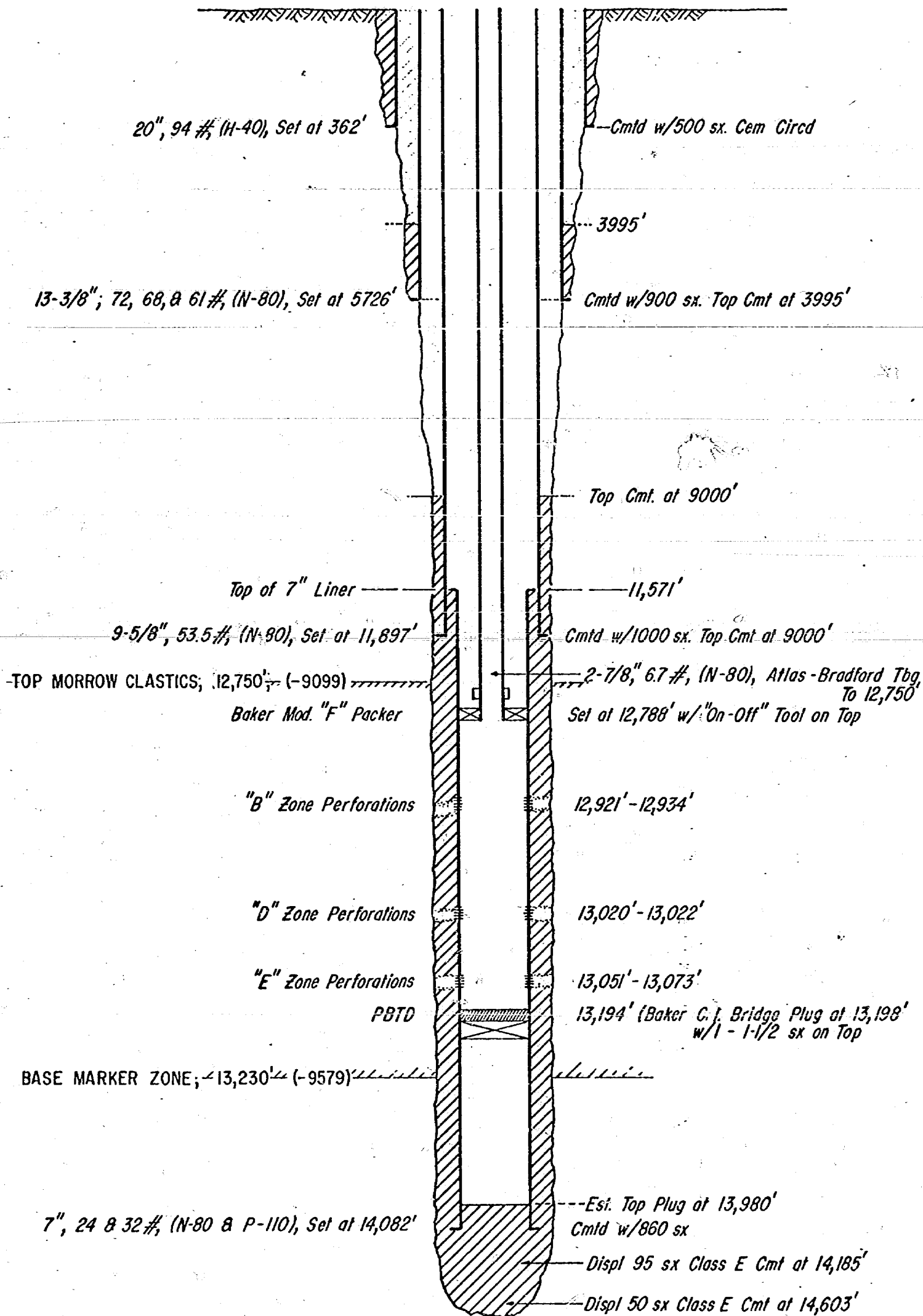


EXHIBIT "B"

# LLANO, INC

STATE GRB No. 1  
GRAMA RIDGE MORROW UNIT  
GRAMA RIDGE FIELD  
LEA COUNTY, NEW MEXICO

## - DIAGRAMMATIC SKETCH - ELEV. 3651' DF



TD: 14,603'

EXHIBIT "C"

CASE 4893: Application of Continental Oil Company for three non-standard proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the following non-standard gas proration units, Eumont Gas Pool, Lea County, New Mexico:

A 200-acre unit comprising the N/2 NE/4, SE/4 NE/4, and N/2 SE/4 of Section 18, Township 21 South, Range 36 East, to be dedicated to the Meyer A-1 Well No. 6 located in Unit B of said Section 18; a 320-acre unit comprising the S/2 of Section 12, Township 19 South, Range 36 East, to be dedicated to the State KN-12 Well No. 1 located in Unit P of said Section 12; and a 158.9-acre unit comprising the N/2 S/2 of Section 7, Township 19 South, Range 37 East, to be dedicated to the State A-7 Com No. 1 located in Unit I of said Section 7.

CASE 4894: Application of Felmont Oil Corporation for a dual completion, contraction of vertical limits, creation of a new pool, and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the vertical limits of the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, to exclude the producing interval from 8894 feet to 8914 feet as found in its Aaron Unit Well No. 1, located in Unit N of Section 11, Township 18 South, Range 26 East, and to re-designate said Atoka-Pennsylvanian Gas Pool as the Atoka-Lower Pennsylvanian Gas Pool, and for the creation of a new pool for the above-described producing interval to be designated Atoka-Upper Pennsylvanian Gas Pool. Applicant also seeks the adoption of special rules for said proposed new pool similar to the pool rules for the presently existing Atoka-Pennsylvanian Gas Pool; applicant further seeks approval for the dual completion of the above-described well to produce from the afore-said two pools.

CASE 4895: Application of Llano, Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Grama Ridge Morrow Unit Area comprising 1,280 acres, more or less, of State Lands in Townships 21 and 22 South, Range 34 East, Lea County, New Mexico.

CASE 4896: Application of Llano, Inc. for gas injection, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to inject gas for secondary recovery and gas storage purposes in the Morrow formation through its State GRA Well No. 1 located in Unit N of Section 3, Township 22 South, Range 34 East, and its State GRB Well No. 1 located in Unit L of Section 34, Township 21 South, Range 34 East, Grama Ridge-Morrow Gas Pool, Lea County, New Mexico.

CASE 4890: (Continued from the January 3, 1973 Examiner Hearing)

Application of Texaco Inc. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks as an exception to Rule 303 of the Commission Rules and Regulations, authority to commingle production from the North Vacuum-Abo, Vacuum-Wolfcamp, and Vacuum-Upper Pennsylvanian Pools in the wellbore of its Mobil State Well No. 1 located in Unit H of Section 25, Township 17 South, Range 34 East, Lea County, New Mexico.

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 17, 1973

9 A. M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Elvis A. Utz, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for February, 1973 from seventeen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico;
- (2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico for February, 1973.

CASE 4875: (Continued from December 19, 1972 Examiner Hearing)

Application of ESH Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Lower San Andres formation in the perforated interval from 5144 feet to 5170 feet in its Hobbs State Well No. 5 located in Unit F of Section 29, Township 18 South, Range 38 East, Hobbs Field, Lea County, New Mexico.

CASE 4860: (Continued from the December 19, 1972 Examiner Hearing)

Application of Craig Folsom for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well to test the Queen formation at an unorthodox oil well location 1340 feet from the South line and 1300 feet from the East line of Section 12, Township 13 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico.

CASE 4482: (Reopened) (Continued from the January 3, 1973 Examiner Hearing)

In the matter of Case 4482 being reopened pursuant to the provisions of Order No. R-4093-A, which order continued the special rules and regulations for the Parkway-Strawn Pool, Eddy County, New Mexico, for a period of one year. All interested parties may appear and show cause why said special pool rules should be further extended.

CASE 4892: Application of Mobil Oil Corporation for a dual completion and water injection, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Carson Watson Com Well No. 13 located in Unit G of Section 33, Township 21 South, Range 37 East, in such a manner as to permit the production of gas from the Tubb Gas Pool and the injection of water into the Drinkard formation underlying the Central Drinkard Unit, Drinkard Pool, Lea County, New Mexico.

4396

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

THIS AGREEMENT entered into as of the 2nd day of January, 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); 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); 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); and

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

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 GRA 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 January 1, 1973 to its economic limit has been determined by rate-time extrapolations 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 from January 1, 1973 through September 1975 shall be considered as full payment to the state for all remaining primary gas reserves. The period from January 1, 1973 through September 30, 1975 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 rentals and royalty provided in the leases covering the respective tracts, beginning as of October 1, 1975, unit operator shall pay an annual storage fee or rental of \$ to 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 shall be paid during the month of October of each year.

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 as to 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 January 2, 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 the 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 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. SUBSEQUENT ADJUSTMENT OF STORAGE OR RENTAL FEE: The gas storage or rental fee provided for in Section 11B shall be subject to adjustment at the end of each 5 year period during the life of this agreement. If in the opinion of the Commissioner of Public Lands the rental or storage fee being paid under this agreement is not commensurate with rental and storage fees being paid in the State of New Mexico in connection with gas storage projects, the Commissioner, at his option, may at least 60 days prior to the expiration of any 5 year period give notice thereof to operator and thereupon the rental or storage fee for the next 5 years shall be re-negotiated and agreed

upon between the unit operator and Commissioner to the end that rental or storage fees will be paid which are commensurate with conditions existing as of that time.

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 hereto have caused this agreement to be executed as of the respective dates set forth opposite their signatures.

ATTEST:

\_\_\_\_\_  
Secretary

LLANO, INC.

By \_\_\_\_\_

President

UNIT OPERATOR AND WORKING INTEREST OWNER

LESSEES OF RECORD

ATTEST:

SHELL OIL COMPANY

By \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Secretary

By

**Address:**

Secretary

By

Address:

The foregoing instrument was acknowledged before me this \_\_\_\_ day of January, 1973 by \_\_\_\_\_ President of Llano, Inc., a New Mexico corporation, on behalf of said corporation.

Notary Public

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of January, 1973 by \_\_\_\_\_ of Shell Oil Company, a Delaware corporation, on behalf of said corporation.

Notary Public

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of January, 1973 by \_\_\_\_\_ of Gulf Oil Corporation, a Pennsylvania corporation, on behalf of said corporation.

Notary Public

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ ) ss

The foregoing instrument was acknowledged before me this \_\_\_\_\_  
day of January, 1973 by \_\_\_\_\_  
of Texaco Inc., a \_\_\_\_\_ corporation, on behalf of said cor-  
poration.

My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public



EXHIBIT "B"  
GRAMA RIDGE MORROW UNIT AGREEMENT

Tract No.	Description	No. Surface Acres	Lease No.	Basic Royalty	Lessee of Record	Overriding Royalty or Prod. Pymt.	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 $\frac{1}{8}$ %	Texaco Inc.	None	Llano, Inc. 100%	24.861
2	N $\frac{1}{4}$ Sec. 3, T. 22 S., R. 34 E.	327.16	E-9141	12 $\frac{1}{8}$ %	Shell Oil Company	None	Llano, Inc. 100%	25.417
3	S $\frac{1}{4}$ Sec. 34, T. 21 S., R. 34 E.	320.00	E-9659	12 $\frac{1}{8}$ %	Gulf Oil Corporation	None	Llano, Inc. 100%	24.861
4	N $\frac{1}{4}$ Sec. 34, T. 21 S., R. 34 E.	320.00	K-3592-1	12 $\frac{1}{8}$ %	Shell Oil Company	None	Llano, Inc. 100%	24.861
Total		1287.16						100.000

EXHIBIT "C"

Rate-time extrapolation of remaining primary royalty gas reserves, Grama Ridge Morrow Unit Area, Lea County, New Mexico

1973			1974			1975		
Equivalent Gas Production MCF			Equivalent Gas Production MCF			Equivalent Gas Production MCF		
Month			Month			Month		
Jan.	2,370		Jan.	1,211		Jan.	407	
Feb.	2,252		Feb.	1,137		Feb.	389	
Mar.	2,125		Mar.	1,085		Mar.	361	
Apr.	2,002		Apr.	1,020		Apr.	344	
May	1,902		May	962		May	335	
June	1,793		June	905		June	316	
July	1,689		July	859		July	299	
Aug.	1,607		Aug.	813		Aug.	280	
Sept.	1,509		Sept.	767		Sept.	270	
Oct.	1,428		Oct.	479		Oct.	-	
Nov.	1,351		Nov.	453		Nov.	-	
Dec.	1,282		Dec.	434		Dec.	-	
Total	21,310			10,125			3,001	

**LLANO, INC.**

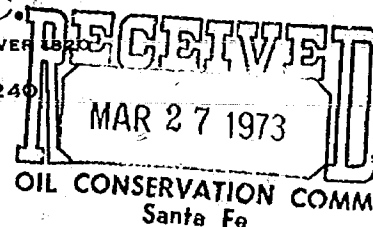
PHONE 393-2153

P. O. DRAWER 1820

HOBBS, NEW MEXICO 88240

March 23, 1973

R. F. MONTGOMERY  
PRESIDENT



DWIGHT TEED  
SECRETARY-TREASURER

New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Attention: Mr. Pete Porter

Re: Notification of Commencing Phase I  
Operations, Grama Ridge Morrow Unit,  
Lea County, New Mexico

Gentlemen:

In accordance with New Mexico Oil Conservation Commission Order No. R-4491, this is to inform you that Llano, Inc. has started the well conditioning work and installation of surface, testing and metering facilities on the Grama Ridge Morrow Unit. The State GRA No. 1 and State GRB No. 1 have been converted for injection purposes and are awaiting the installation of the compressor equipment in order to begin the pilot operations.

After gas injection has begun, Llano will so inform you by letter with the first month's report on injection and/or withdrawal volumes.

The New Mexico Oil Conservation Commission (Hobbs) and the New Mexico State Land Office have also been notified.

Very truly yours,

*R. F. Montgomery*  
Randall F. Montgomery

RBW/zs

*File 4896  
Case Reg case file  
not a unit*



# OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO  
P. O. BOX 2088 - SANTA FE  
87501

March 16, 1973

GOVERNOR  
BRUCE KING  
CHAIRMAN  
LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER  
STATE GEOLOGIST  
A. L. PORTER, JR.  
SECRETARY - DIRECTOR

Mr. Lewis Cox  
Hinkle, Bondurant, Cox & Eaton  
Attorneys at Law  
Post Office Box 10  
Roswell, New Mexico 88201

Re: Case No. 4896

Order No. R-4491

Applicant:

LLANO, INC.

Dear Sir:

Enclosed herewith are two copies of the above-referenced  
Commission order recently entered in the subject case.

Very truly yours,

*A. L. Porter, Jr.*  
A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x  
Artesia OCC         
Aztec OCC       

OTHER Mr. Richard S. Morris

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:

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, 12,984 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.

-2-

Case No. 4896  
Order No. R-4491

(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 compatability 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.

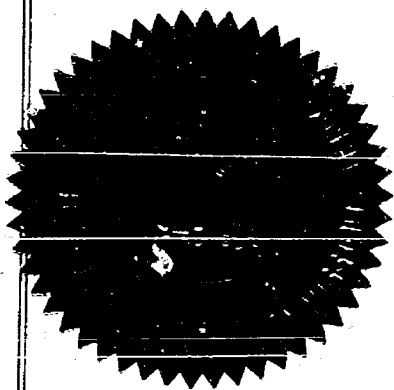
-3-

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

*Bruce King*  
BRUCE KING, Chairman

*Alex J. Armijo*  
ALEX J. ARMILLO, Member

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

S E A L

dr/

Case 4896

Heard. 1-17-73

Rec'd 1-26-73

Grant Llanos request for  
approval of ~~2~~ injection wells  
& a storage project in the  
Trama Ridge Monow unit  
area consisting of sec. 34-  
21 S - 34 E & sec 3-22 S - 34 E.  
The two injection wells  
are:

Llanos - State GRB # 1 E - 3-22 S - 34 E.

Llanos - State GRB # 1 L - 34-21-34 E  
Injection shall be thru 2 7/8" N-80  
tubing & under a packer set at  
approx. 12,700'. The annular  
space shall be filled with cement  
fluid w/ a pressure gauge at the  
surface to detect any leakage  
into or out of the annular space.  
Injection shall be into the A & D  
regions <sup>of the Monow</sup> the GRB # 1 & into  
the B, D, & E zones <sup>of the Monow</sup> of the GRB  
# 1 well.

Reports shall be filed as  
follows:

1. Notes to the Commission ~~at~~ <sup>the</sup> and the State Land Office when  
Phase II <sup>III</sup> ~~II~~ began.
2. Six months injection & withdrawal  
reports after Phase II is begun.

CLARENCE E. HINKLE  
W. E. BONDURANT, JR.  
LEWIS C. COX, JR.  
PAUL W. EATON, JR.  
CONRAD E. COFFIELD  
HAROLD L. HENSLEY, JR.  
STUART D. SHANOR  
C. D. MARTIN  
PAUL J. KELLY, JR.

LAW OFFICES  
HINKLE, BONDURANT, COX & EATON

600 HINKLE BUILDING  
POST OFFICE BOX 10

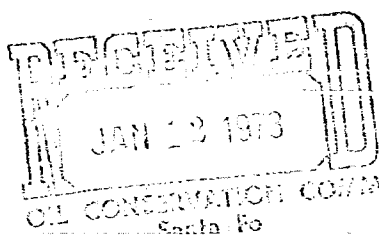
ROSWELL, NEW MEXICO 88201

January 11, 1973

TELEPHONE (505) 622-8510

MIDLAND, TEXAS OFFICE  
521 MIDLAND TOWER  
(915) 683-4691

Oil Conservation Commission  
Box 2088  
Santa Fe, New Mexico 87501



Gentlemen:

Cases 4895 and 4896 appear on the examiner's docket for January 17 and are the applications of Llano, Inc. for approval of the Grama Ridge Morrow Unit Agreement and for the injection of gas in the unitized formation. These cases were put on the docket at my request. We enclose applications in triplicate to be filed in connection with these cases.

The application in Case No. 4895 for the approval of the unit agreement states that there is filed with the application 3 copies of the proposed unit agreement. The form of unit agreement is under consideration by Ray Graham of the Commissioner's office and we expect to have this in final form and copies filed with the Commission prior to the hearing.

In connection with Case 4896, it is stated that copies of the electrical logs of the injection wells are being filed. Llano is in the process of obtaining these logs and they should be available shortly and we will file them with the Commission prior to the hearing.

Yours sincerely,

HINKLE, BONDURANT, COX & EATON

By Clarence E. Hinkle  
Cf

CEH:cs  
Enc.

DRAFT

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:

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

CASE NO. 4896

Order No. R- 4491

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. Ortiz.

NOW, on this 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 3A,  
injection to be into the perforated intervals from 12,827 to 12,847 feet,  
12,984 to 12,985 feet, and 13,010 to 13,021 feet in said ~~GRA~~ State GRA  
Well No. 1, and the perforated intervals from 12,921 to 12,934 feet,  
13,020 to 13,022 feet, and 13,061 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 compatability 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 ~~storage~~ 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:

(7) That the applicant, Llano, Inc., is hereby authorized to inject gas for storage purposes, and to subsequently withdraw such gas, in ~~the~~ 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

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

DONE at etc.

CASE 4897: Application of COASTAL  
STATES GAS PRODUCING CO. FOR AN  
UNORTHODOX LOCATION, LEA COUNTY.