

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

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

CASE NO. 10259  
ORDER NO. R-9482

APPLICATION OF CHEVRON U.S.A., INC.  
FOR STATUTORY UNITIZATION, LEA COUNTY,  
NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on March 7, 1991, at Santa Fe, New Mexico, before Examiner Jim Morrow.

NOW, on this 8th day of April, 1991, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) Division Case Nos. 10259, 10260 and 10261 were consolidated at the time of the hearing for the purpose of testimony.

(3) The applicant, Chevron U.S.A., Inc., seeks the statutory unitization, pursuant to the "Statutory Unitization Act", Sections 70-7-1 through 70-7-21, N.M.S.A. (1978), of 5922.26 acres, more or less, being a portion of the Grayburg-

San Andres formation, Lea County, New Mexico, said portion to be known as the Arrowhead Grayburg Unit; the applicant further seeks approval of the Unit Agreement and the Unit Operating Agreement which were submitted in evidence as applicant's Exhibit Nos. 61 and 62 in this case.

(4) The horizontal limits of said unit area should be comprised of the following described Federal, State and Fee lands in Lea County, New Mexico:

Township 21 South, Range 36 East, NMPM

Section 25: All  
Section 26: SE/4 SE/4  
Section 35: E/2; E/2 SW/4; SW/4 SW/4; SE/4 NW/4  
Section 36: All

Township 22 South, Range 36 East, NMPM

Section 1: All  
Section 2: All  
Section 11: NE/4 NW/4; NE/4; NE/4 SE/4  
Section 12: All  
Section 13: E/2; E/2 NW/4; NW/4 NW/4; NE/4 SW/4  
Section 24: NE/4 NE/4

Township 22 South, Range 37 East, NMPM

Section 6: W/2 NW/4; SW/4  
Section 7: W/2; S/2 SE/4; NW/4 SE/4  
Section 18: All  
Section 19: N/2 N/2

(5) The vertical limits of said unit area should comprise that interval which extends from an upper limit of 150 feet below sea level or the top of the Grayburg formation, whichever is shallower, to a lower limit of 1,500 feet below sea level; with the geologic marker for the top of the Grayburg formation being found to occur at 3,671 feet in the Chevron Harry Leonard (NCT-C) Well No. 20 (located 660 feet from the North line and 990 feet from the West line (Unit D) of Section 36, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico) as recorded by the Gearhart Compensated Neutron Log measured from the Kelly Drive Bushing elevation of 3,532 feet above sea level and dated February 25, 1985, save and except the following: in the SE/4 of Section 18, Township 22 South, Range 37 East, and N/2 N/2 of Section 19, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, the lower vertical limit shall be the top of the San

Andres Formation which occurs at 3,804 feet below the Kelly Drive Bushing on the Dresser Atlas Compensated Density Neutron Log dated August 16, 1978 on the Zia (Exxon) New Mexico "M" Well No. 49 which is located 2,610 feet from the South line and 2,310 feet from the East line (Unit J) of Section 18, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.

(6) The horizontal and vertical limits of said unit have been reasonably defined by development and should be known as the Arrowhead-Grayburg Pool.

(7) In order to provide a single pool designation for the Arrowhead Grayburg Unit, the horizontal/ vertical limits of the Arrowhead-Grayburg, Penrose-Skelly, Langlie-Mattix and Eumont Oil and Gas Pools should be extended/contracted as set forth in companion Case No. 10261.

(8) The establishment of a uniform depth limit to the unit serves the best interest of all parties because it includes a portion of the aquifer which may be productive of minor amounts of hydrocarbons and should be allocated to the unit if produced. Correspondingly, the amounts should be so small that no correlative rights are violated by its inclusion.

(9) The unit area contains 26 separate tracts of land owned by 48 different working interest owners.

(10) The applicant has made a good faith effort to secure voluntary unitization within the Unit Area and at the time of the hearing 87 percent of the working interest owners and approximately 82.5 percent of the royalty interest owners were effectively committed to the unit.

(11) The applicant proposes to institute a waterflood project for the secondary recovery of oil and associated gas, condensate, and all associated liquefiable hydrocarbons within and to be produced from the proposed unit area (being the subject of Division Case No. 10260).

(12) Arco Oil & Gas Company, as a proposed working interest owner in the unit, and some of the overriding royalty interest owners in Tract 20 appeared at the hearing but did not oppose the case.

(13) No working interest owner or royalty owner appeared in opposition to the case.

(14) The working interest owners in the proposed unit area formed a technical committee in May, 1988 which reached the following conclusions in September, 1989:

- a) that the proposed unit had sufficient secondary recovery potential to justify unitization estimating a 41.6% secondary to primary recovery ratio recovering an estimated 15 million barrels of additional oil; and
- b) that for an investment of approximately \$28.2 million dollars a rate of return of 20% with a 10% discount would result in a present worth profit of \$24.6 million dollars.

(15) The unit technical committee developed equity parameters for negotiation purposes which included cumulative oil production, remaining primary oil and gas reserves, ultimate primary oil reserves, current oil and gas production rates and gross acreage.

(16) Based upon those equity parameters 97.7712% of the unit working interest owners agreed upon a participation formula consisting of 57% cumulative oil plus 33% remaining oil reserves plus 10% current oil rates per tract as each tract's relative share of secondary oil recovery from the proposed unit.

(17) The working interest committee considered acreage as one of the factors in the participating formula, but ultimately agreed that a formula without an acreage factor was more equitable.

(18) The resulting participation of each unit tract using the proposed participation formula is set forth on applicant's Exhibit 20 which shows, with the exception of Tracts 18 and 20, that all tracts have a positive participation percentage.

(19) Tracts 18 and 20 have a "0" percent participation because no party has been able to establish production on those tracts despite wells being drilled and tested on those tracts in the unitized formation.

(20) Said Tracts 18 and 20 do not have contribution value and have been fairly treated under the proposed participation formula.

(21) Both Tracts 18 and 20 are necessary in order to provide an effective flood pattern for the unit and cannot be excluded from the unit area without the loss of substantial volumes of secondary oil.

(22) In order to accommodate the concerns expressed by certain overriding royalty owners in Tract 20, Chevron and those owners request the inclusion of a special provision in the statutory unitization order as follows:

Any ORRI owner in a unit tract which has a "0%" participation under the proposed participation formula for the unit, and who does not receive income from any other unit tract, shall be paid his/her proportionate share of the production from the "0%" tract as if that tract was not a part of the unit. The payment shall be made only if production is obtained from a producing unit well on the "0%" participation tract and the ORRI payment shall be charged as a unit expense against all the working interest owners of the unit. This provision shall apply only to the overriding working interest owner and not to the royalty or working interest owner for that tract, both of whom receive income from other unit tracts.

(23) The inclusion of the above special provision, while not required for approval of this unit, serves to resolve a potentially disputed issue which could delay institution of the waterflood and therefore is appropriate.

(24) The proposed secondary recovery operations should result in the additional recovery of approximately 15 million barrels of oil.

(25) The unitized management, operation and further development of the Arrowhead Grayburg Unit Area, as proposed, is reasonably necessary to effectively carry on secondary recovery operations and will substantially increase the ultimate recovery of oil and gas from the unitized portion of the pool.

(26) The proposed unitized method of operation as applied to the Arrowhead Grayburg Unit Area is feasible and should result with reasonable probability in the increased recovery of substantially more oil and gas from the unitized portion of the pool than would otherwise be recovered without unitization.

(27) The estimated additional costs of such operations will not exceed the estimated value of the additional oil so recovered plus a reasonable profit.

(28) Such unitization and adoption of applicant's proposed unitized method of operation will benefit the working interest owners and royalty owners of the oil and gas rights within the Arrowhead Grayburg Unit Area.

(29) The granting of the application in this case should have no adverse effect upon the Grayburg, San Andres or other formations located within or outside the proposed unit area.

(30) Chevron proposed a wellbore assessment method in the Unit Operating Agreement as an incentive to encourage the working interest owners in the Unit Area to contribute the maximum number of existing useable wellbores to the unit.

(31) This assessment method, though not common, is used in other unit agreements.

(32) A wellbore useable for production or injection in the unitized interval would be made available for any proration unit which currently has a well completed in the unitized interval within the Unit Area which is to participate in the proposed waterflood operation.

(33) It is not unreasonable to penalize the owners of such proration units if they do not dedicate that well to the unit.

(34) The proposed method of wellbore assessment is fair and reasonable.

(35) The applicant's Exhibit Nos. 61 and 62 in this case, being the Statutory Unit Agreement and the Unit Statutory Operating Agreement, respectively, should be incorporated by reference into this order.

(36) The Arrowhead Grayburg Unit Agreement and the Arrowhead Grayburg Unit Operating Agreement provide for unitization and unit operation of the Arrowhead Grayburg Unit Area upon terms and conditions that are fair, reasonable and equitable, and include:

- a) an allocation to the separately owned tracts in the unit area of all oil and gas that is produced from the unit area and which is saved, being the

production that is not used in the conduct of unit operations or not unavoidably lost;

- b) a provision for the credits and charges to be made in the adjustment among the owners in the unit area for their respective investments in wells, tanks, pumps, machinery, materials and equipment contributed to the unit operations;
- c) a provision governing how the costs of unit operations, including capital investments, shall be determined and charged to the separately owned tracts and how said costs shall be paid, including a provision providing when, how, and by whom, such costs shall be paid, including a provision providing when, how and by whom such costs shall be charged to each owner or the interest of such owner, and how his interest may be sold and the proceeds applied to the payment of his costs;
- d) a provision for carrying any working interest owner on a limited, carried or net-profits basis, payable out of production, upon terms and conditions which are just and reasonable, and which allow an appropriate charge for interest for such service payable out of production, upon such terms and conditions determined by the Division to be just and reasonable;
- e) a provision designating the Unit Operator and providing for supervision and conduct of the unit operations, including the selection, removal or substitution of an operator from among the working interest owners to conduct the unit operations;
- f) a provision for a voting procedure for decisions on matters to be decided by the working interest owners in respect to which each working interest owner shall have a voting interest equal to his unit participation; and,
- g) the time when the unit operations shall commence and the manner in which, and the circumstances under which, the operations shall terminate and

for the settlement of accounts upon such termination.

(37) At the time of the hearing, the applicant requested that no penalty be assessed against non-consenting working interest owners in said unit.

(38) The Bureau of Land Management and the commissioner of Public Lands of the State of New Mexico have granted preliminary approval of the proposed unit.

(39) The statutory unitization of the Arrowhead Grayburg Unit Area is in conformity with the above findings, and will prevent waste and protect correlative rights of all interest owners within the proposed unit area, and should be approved.

IT IS THEREFORE ORDERED:

(1) The application of Chevron U.S.A., Inc. for the Arrowhead Grayburg Unit Agreement covering 5922.26 acres, more or less, of Federal, State and Fee lands in the Arrowhead Grayburg Pool, Lea County, New Mexico, is hereby approved for statutory unitization pursuant to the "Statutory Unitization Act", Section 70-7-1 through 70-7-21, N.M.S.A. (1978).

(2) The lands covered by said Arrowhead Grayburg Unit Agreement shall be designated the Arrowhead Grayburg Unit Area and shall comprise the following described acreage in Lea County, New Mexico:

Township 21 South, Range 36 East, NMPM

Section 25: All  
Section 26: SE/4 SE/4  
Section 35: E/2; E/2 SW/4; SW/4 SW/4; and SE/4 NW/4  
Section 36: All

Township 22 South, Range 36 East, NMPM

Section 1: All  
Section 2: All  
Section 11: NE/4 NW/4; NE/4; and NE/4 SE/4  
Section 12: All

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Section 13: E/2; E/2 NW/4; NW/4 NW/4; and NE/4 SW/4  
Section 24: NE/4 NE/4

Township 22 South, Range 37 East, NMPM

Section 6: W/2 NW/4; and SW/4  
Section 7: W/2; S/2 SE/4; and NW/4 SE/4  
Section 18: All  
Section 19: N/2 N/2

(3) The vertical limits of said unit area shall comprise that interval which extends from an upper limit of 150 feet below sea level or the top of the Grayburg formation, whichever is shallower, to a lower limit of 1,500 feet below sea level; the geologic marker for the top of the Grayburg formation being found to occur at 3,671 feet in the Chevron Harry Leonard (NCT-C) Well No. 20 (located 660 feet from the North line and 990 feet from the West line (Unit D) of Section 36, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico) as recorded by the Gearhart Compensated Neutron Log measured from the Kelly Drive Bushing elevation of 3,532 feet and dated February 25, 1985, save and except the following: in the SE/4 of Section 18, Township 22 South, Range 37 East, and the N/2 N/2 of Section 19, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, the lower vertical limit of the Arrowhead Grayburg Unit Area shall be the top of the San Andres Formation which occurs at 3,804 feet below the Kelly Drive Bushing on the Dresser Atlas Compensated Density Neutron Log dated August 16, 1978 on the Zia (Exxon) New Mexico "M" Well No. 49 which is located 2,610 feet from the South line and 2,310 feet from the East line (Unit J) of Section 18, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.

(4) The applicant shall institute a waterflood project for the secondary recovery of oil and associated gas, condensate and all associated liquefiable hydrocarbons within and produced from the unit area, and said waterflood project is the subject of Division Case No. 10260.

(5) The Arrowhead Grayburg Unit Agreement and the Arrowhead Grayburg Unit Operating Agreement, which were submitted to the Division at the time of the hearing as Exhibit Nos. 61 and 62, respectively, are hereby incorporated by reference into this order.

(6) The Arrowhead Grayburg Unit Agreement and the Arrowhead Grayburg Unit Operating Agreement shall be subject to the following additional special provision:

Any ORRI owner in a unit tract which has a "0%" participation under the proposed participation formula for the unit, and who does not receive income from any other unit tract, shall be paid his/her proportionate share of the production from the "0%" tract as if that tract was not a part of the unit. The payment shall be made only if production is obtained from a producing unit well on the "0%" participation tract and the ORRI payment shall be charged as a unit expense against all the working interest owners of the unit. This provision shall apply only to the overriding working interest owner and not to the royalty or working interest owner for that tract, both of whom receive income from other unit tracts.

(7) This order shall not become effective unless and until seventy-five percent of the working interest and seventy-five percent of the royalty interest owners in the Unit Area have approved the plan for unit operations as required by Section 70-7-8, N.M.S.A., 1978 Compilation.

(8) If the persons owning the required percentage of interest in the Unit Area as set out in Section 70-7-8, N.M.S.A., 1978 Compilation, do not approve the plan for unit operations within a period of six months from the date of entry of this order, this order shall cease to be of further force and effect and shall be revoked by the Division, unless the Division shall extend the time for ratification for good cause shown.

(9) When the persons owning the required percentage of interest in the Unit Area have approved the plan for unit operations, the interests of all persons in the Unit Area are unitized whether or not such persons have approved the plan or unitization in writing.

(10) Any working interest owner who has not agreed in writing to participate in the unit prior to the effective date of this order shall be deemed to have relinquished to the Unit Operator all of his operating rights and working interest in and to the unit until his share of the costs has been repaid. Such

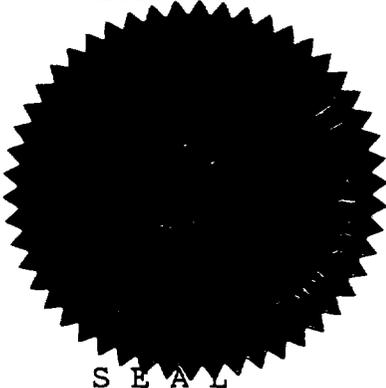
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repayment shall not include a non-consent penalty (Section 70-7-7.F N.M.S.A. 1978)

(11) The applicant as Unit Operator shall notify in writing the Division Director of any removal or substitution of said Unit Operator by any other working interest owner within the area.

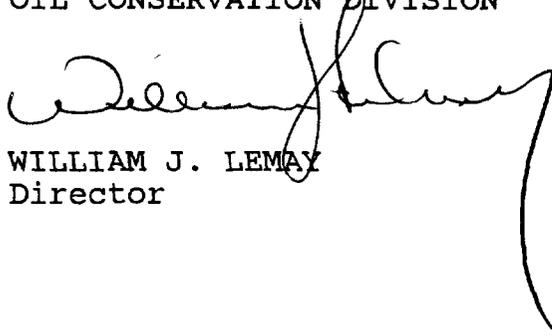
(12) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director