



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

October 13, 1995

RECEIVED  
OCT 17 1995

Merrion Oil & Gas Corporation  
P. O. Box 840  
Farmington, New Mexico 87499

Attention: George Sharpe

OIL CON. DIV.

*Media Entrada #2 DIST. 3*  
*1-15-14N-03W*

Administrative Order DD-120(H)  
High Angle/Horizontal

Dear Mr. Sharpe:

Reference is made to your application dated May 31, 1995 for authorization to initiate a high angle/horizontal directionally drilling project in the Media-Entrada Oil Pool on Merrion Oil & Gas Corporation's Media Entrada Unit which comprises the following described 580 acres of Federal lands in, Sandoval County, New Mexico:

**TOWNSHIP 19 NORTH, RANGE 3 WEST, NMPM**

Section 14: S/2 NW/4 and SW/4

Section 15: S/2 NE/4 and SE/4

Section 22: N/2 NE/4 NE/4

Section 23: N/2 NW/4.

**The Division Director Finds That:**

- (1) The application by Merrion Oil & Gas Corporation ("Merrion") has been duly filed under the provisions of Rule 111.D and E of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10388, issued by the Oil Conservation Commission in Case 11,274 on June 13, 1995;
- (2) The Media-Entrada Oil Pool currently comprises all of said Sections 14 and 15, the NE/4 of said Section 22, and the N/2 of said Section 23 and is subject to the "*Special Rules and Regulations for the Media-Entrada Oil Pool*", as promulgated by Division Order No. R-4277, dated March 15, 1972, which provides for 160-acre oil spacing and proration units, or drilling units, and requires that wells be located no closer than 330 feet to the outer boundary of the proration unit or to any governmental quarter-quarter section line nor closer than 660 feet to the nearest well drilling to or capable of producing from the same pool;
- (3) A special depth bracket oil allowable of 750 barrels of oil per day per 160-acre unit was established for said pool by Division Order No. R-4713, as amended;
- (4) Development within the Media-Entrada Oil Pool has over the years been subject to numerous non-standard oil spacing and proration unit orders:

- (a) Division Order No. R-4274, dated March 15, 1972, authorized the formation of two 160-acre non-standard oil spacing and proration units comprising the S/2 NW/4 and N/2 SW/4 of Section 14 and the S/2 NE/4 and N/2 SE/4 of Section 14;
- (b) Division Order No. R-4287, dated April 17, 1972, also authorized the formation of two 160-acre non-standard oil spacing and proration units comprising the S/2 SW/4 of Section 14 and the N/2 NW/4 of Section 23 and the S/2 SE/4 of Section 15 and the N/2 NE/4 of Section 22; and,
- (c) Division Order No. R-5051, dated June 17, 1975, authorized the formation of an unusual 140-acre non-standard oil spacing and proration unit comprising the S/2 NE/4 NE/4, NW/4 NE/4, and S/2 NW/4 of Section 22.

Records on file with the New Mexico Oil Conservation Division show that the subject Media Entrada Unit was October 10, 1975 and made effective on November 1, 1975, however there is no reference in the Division records that a corresponding non-standard oil spacing and proration unit comprising the S/2 SE/4 of Section 15 and the N/2 NE/4 NE/4 of Section 22 (consisting of 100 acres) was ever formed, it can therefore be assumed that the provisions of said Unit Agreement provided for such development within the Unit Area.

- (5) The Entrada formation in this area was deposited as an eolian sand overlain by lacustrine limestones and anhydrites of the Todilto formation. The resulting "dune-like" structures, having porosity and permeability, act as the reservoir for trapping the accumulation of oil in the Entrada formation. The Media-Entrada Oil Pool is in contact with a large aquifer and hydrodynamically active fresh ground water flowing to the southwest beneath the oil accumulation. This strong drive acts to tilt the oil-water contact in the direction of flow; conventionally drilled (vertical) wells in this pool experience significant "water coning", whereby the water below the oil moves upward to the wellbore, a process that has left a significant amount of "attic" oil sidetracked or by-passed between wells; by drilling horizontally across the top of the structure, the applicant is attempting to drain this otherwise unrecoverable attic oil by alleviating this coning action; such horizontal drainhole will act to create a small pressure drop along the large area found in a long horizontal drainhole instead of a large pressure drop through a small area available to a vertical wellbore;
- (6) The "project area" proposed by Merrion is to correspond with the Unit Area as described above.
- (7) Within this project area Merrion seeks:
  - a) the ability to traverse section and quarter section lines within the project area in order to combine proration units in order to form non-standard oversized and irregular sized spacing and proration units to accommodate such wellbores;
  - b) drill the proposed horizontal wellbores to within 330 feet of the outer boundary of the "project area" or Unit Area; and,

c) the assignment of an allowable for a horizontally drilled well based upon;

1. the number of standard 160-acre proration units which are developed or traversed by a horizontal wellbore; or,

2. in the case of that portion of the Unit Area comprising the S/2 SE/4 of Section 15 and the N/2 NE/4 NE/4 of Section 22, a non-standard 100-acre oil spacing and proration unit can be formed to accommodate development of Entrada oil production.

- (8) Initially, it is Merrion's intent to utilize the existing wellbore on its previously plugged and abandoned Media Entrada Unit Well No. 2 (API No. 30-043-20087), located 1650 feet from the South line and 330 feet from the East line (Unit I), of said Section 15 to drill a short radius horizontal drainhole a lateral distance of 1,000 to 1,500 feet; and,
- (9) It appears the applicant has satisfied all of the appropriate requirements prescribed in said Rule 111.D and E, the subject application should be approved and the well should be governed by the provisions contained within this order and all other applicable provisions of Division General Rule 111.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of Merrion Oil and Gas Corporation ("Merrion") for high angle/horizontal directional drilling within a "project area", in the Media-Entrada Oil Pool on its Media Entrada Unit comprising the following described 580 acres in Sandoval County, New Mexico, is hereby approved:

**TOWNSHIP 19 NORTH, RANGE 3 WEST, NMPM**

Section 14: S/2 NW/4 and SW/4

Section 15: S/2 NE/4 and SE/4

Section 22: N/2 NE/4 NE/4

Section 23: N/2 NW/4.

(2) Merrion is further authorized to proceed with their initial plans to re-enter and recomplete its previously plugged and abandoned Media Entrada Unit Well No. 2 (API No. 30-043-20087), located 1650 feet from the South line and 330 feet from the East line (Unit I), of said Section 15 by plugging-back, milling a window in the existing production casing, kick-off from the vertical by drilling a short radius curve hole to approximately 90 degrees so as to encounter the upper portion of the oil bearing Entrada sand, and continue drilling horizontally a distance of 1,000 to 1,500 feet.

**PROVIDED HOWEVER THAT** any drainhole drilled within said Unit Area including one drilled from said Media Entrada Unit Well No. 2 may traverse section and quarter section lines within the project area provided that the horizontal or producing portion of any drainhole shall be located no closer than 330 feet from the outer boundary

of the above-described "project area" or Unit Area.

**PROVIDED FURTHER THAT** the applicant shall determine the actual location of the kick-off point in said well prior to commencing directional drilling operations. Also, the applicant shall conduct a directional survey on the lateral portion of any horizontal wellbore during or after completion of drilling operations.

(3) The applicant shall notify the supervisor of the Aztec District office of the Division of the date and time said wellbore surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore surveys to the Santa Fe and Aztec offices of the Division upon completion.

(4) The allowable assigned to the proration unit designated to each well in the Media-Entrada Oil Pool shall be assigned by the supervisor of the Division's Aztec district office and shall be equal to 750 barrels of oil per day times the number of standard or non-standard 160-acre tracts or within each designated proration unit that are developed/traversed by a horizontal drainhole.

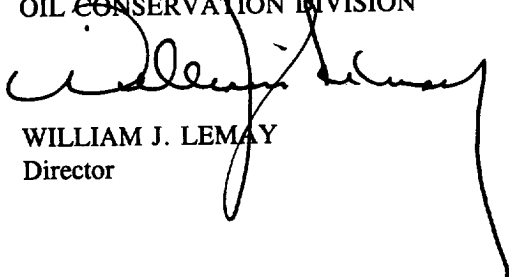
(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F.

(6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth (TVD) in addition to measured depths (MVD).

(7) 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.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director

S E A L

cc: Oil Conservation Division - Aztec ✓  
U. S. Bureau of Land Management - Farmington  
File: Case 11328