

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

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

*CASE NO. 10196  
ORDER NO. R-9450*

**APPLICATION OF MERRION OIL AND GAS  
CORPORATION FOR A HORIZONTAL DIRECTIONAL  
DRILLING PILOT PROJECT, SPECIAL OPERATING  
RULES THEREFOR, NON-STANDARD OIL PRORATION  
UNIT, AND AN UNORTHODOX OIL WELL LOCATION,  
MCKINLEY COUNTY, NEW MEXICO**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on February 7, 1991 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 12th day of March, 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) The applicant, Merrion Oil and Gas Corporation, seeks the formation of an 80-acre non-standard oil spacing and proration unit in the Undesignated Ojo Encino-Entrada Oil Pool comprising the W/2 NE/4 of Section 28, Township 20 North, Range 5 West, NMPM, McKinley County, New Mexico, for the purpose of initiating a horizontal drilling pilot project therein and to further promulgate special rules and provisions within said pilot project area including the designation of a target window limiting the horizontal displacement of a wellbore and special allowable considerations.

(3) The proposed pilot project is located within one mile of the Ojo Encino-Entrada Oil Pool boundaries and is therefore governed by the applicable rules therefor which include statewide 40-acre oil spacing units and general oil well location requirements, but is subject to a special 750 barrels of oil per day poolwide depth bracket allowable established by Division Order No. R-5420 dated April 26, 1977.

(4) The Entrada formation in this area was deposited as an eolian sand overlain by lacustrine limestones and anhydrites of the Todilto formation. These small "dune-like" structures, having high porosity and permeability act as the reservoir for trapping the accumulations of oil in the Entrada formation.

(5) The Ojo Encino-Entrada Oil Pool is a strong water drive reservoir and the character of the oil found in this pool is paraffin base, low asphalt, and low viscosity (35.5° API).

(6) Conventionally drilled (vertical) oil wells in this pool experience water coning quite early and after water breakthrough occurs, the well produces large volumes of water and relatively low volumes of oil, which result in very high operating costs, low oil recovery, and less efficient drainage.

(7) By drilling a horizontal well along the crest of one of these oil-bearing subterranean dunes, the applicant is attempting to alleviate coning by creating a small pressure drop along the large length of a horizontal wellbore instead of a large pressure drop through a small area available to a vertical wellbore.

(8) Also, there should be less produced water to handle, thereby lowering operating costs; and, because there will be larger reservoir contact by a horizontal wellbore, more efficient oil production should result in better drainage.

(9) The applicant proposes to drill vertically from an unorthodox surface location 750 feet from the North line and 2450 feet from the East line (Unit B) of said Section 28, penetrate the Entrada formation whereby the zone will be further evaluated to better determine the proper azimuth for a horizontal extension, which will be in a southeasterly direction within a target window described as a rectangle 1320 feet wide and 1200 feet long, the northern side of which is located 550 feet from the North line of said Section 28, with the western side formed by the half-section line of Section 28.

(10) The aforementioned prescribed area limiting the horizontal displacement of the wellbore would allow for flexibility, serve to minimize risk and maximize the success of such a completion.

(11) Since the project area consists of essentially two 40-acre proration units, the applicant proposed that the project be assigned an allowable of 1500 barrels of oil per day, which is equal to twice the normal allowable assigned a 40-acre proration unit in the Ojo Encino-Entrada Oil Pool.

(12) The N/2 of said Section 28 is inclusive of the applicant's Federal "28" Lease of which Merrion Oil and Gas Corporation is 100% working interest owner.

(13) There was no objection to the subject application by any interested party.

(14) In the interest of conservation, the prevention of waste, and the protection of correlative rights, the application of Merrion Oil and Gas Corporation for this horizontal drainhole project should be approved.

(15) The non-standard proration unit, as described above, should not become effective until such time as the horizontal wellbore is completed and placed on production and will cease at such time as the horizontal wellbore is properly plugged and abandoned.

(16) The applicant should be required to determine the actual location of the kick-off point prior to directional drilling operations. Also, the applicant should notify the supervisor of the Aztec District Office of the Division of the proposed direction of the deviated hole and of the date and time of the commencement of directional drilling in order that the same may be witnessed.

(17) The applicant should be required to conduct a directional survey on the lateral portion of the wellbore during or after completion of the drilling operations on the well and submit a copy of said survey to both the Santa Fe and Aztec Offices of the Division.

IT IS THEREFORE ORDERED THAT:

(1) The application of Merrion Oil and Gas Corporation for a horizontal directional drilling pilot project consisting of the W/2 NE/4 of Section 28, Township 20 North, Range 5 West, NMPM, Undesignated Ojo Encino-Entrada Oil Pool, McKinley County, New Mexico, forming a non-standard 80-acre oil spacing and proration unit is hereby approved.

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(2) The applicant is further authorized to drill its Federal 28 Well No. 1 at an unorthodox surface oil well location 750 feet from the North line and 2450 feet from the East line (Unit B) of said Section 28 in the unconventional manner as described in Finding Paragraph No. (9) of this order.

(3) The lateral extent of the horizontal wellbore shall be such that the producing interval be limited to an area described as a rectangle 1320 feet wide and 1200 feet long, the northern side of which is located 550 feet from the North line of said Section 28, with the western side formed by the half-section line of Section 28.

(4) The aforementioned 80-acre non-standard oil proration unit shall be dedicated to the proposed horizontal well and shall be assigned an acreage dedication factor of 2.0 to be assessed toward the depth bracket allowable for said pool.

(5) This non-standard proration unit shall not become effective until such time as the horizontal wellbore is completed and placed on production and shall cease at such time as the horizontal well is properly plugged and abandoned.

(6) The geographic location of the kick-off point for the proposed horizontal well shall be determined prior to directional drilling. Also, the operator shall notify the supervisor of the Aztec District Office of the Division of the proposed direction of the deviated hole and of the date and time of the directional drilling in order that the same may be witnessed.

(7) The applicant shall conduct a directional drilling survey on the well during or after completion of horizontal drilling operations.

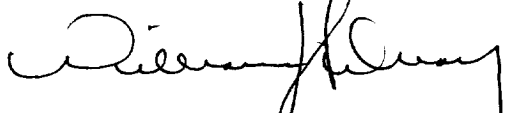
(8) Upon completion of the horizontal drilling operations on the well, the applicant shall file a copy of said directional drilling survey along with a final report specifying the depth and location of the terminus of said horizontal wellbore to both the Santa Fe and Aztec Offices of the Division.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director

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