

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

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

CASE NO. 9143  
Order No. R-8508

APPLICATION OF AMERIND OIL COMPANY FOR  
AN UNORTHODOX LOCATION FOR A WELL  
TO BE DRILLED 330 FEET FROM THE SOUTH  
LINE AND 1980 FEET FROM THE WEST LINE  
OF SECTION 33, TOWNSHIP 16 SOUTH,  
RANGE 37 EAST, LEA COUNTY, NEW MEXICO  
IN THE SHIPP-STRAWN OIL POOL, TO BE  
DEDICATED TO THE E/2 SW/4 OF SAID SECTION.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on July 16, 1987, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 9th day of September, 1987, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law and the applicant having provided notice to all interested parties as required by Rule 1207, as amended, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Amerind Oil Company ("Amerind") seeks an exception to the Special Rules and Regulations for the Shipp-Strawn Pool as promulgated by Division Order No. R-8062, as amended, to authorize an unorthodox oil well location for its Meyers Well No. 3 at a surface location 330 feet from the South line and 1980 feet from the West line of Section 33, Township 16 South, Range 37 East, and to dedicate the E/2 SW/4 of said Section 33 to the well.

(3) The Special Rules and Regulations governing the Shipp-Strawn Pool as promulgated by Division Order No. R-8062-A, provide for 80-acre oil well spacing units with

wells to be located no further than 150 feet from the center of a governmental quarter-quarter section or lot.

(4) Amerind seeks to drill its Meyers Well No. 3 at an unorthodox location in order to reduce the risk of drilling a dry hole or marginal well caused by the abrupt termination of porosity in this type of oil accumulation.

(5) At the time of the hearing, Pennzoil, Tipperary and W. A. Moncrief, Jr., who are interest owners in the south offsetting acreage, appeared and objected to the proposed unorthodox location.

(6) The Shipp-Strawn pool consists of a series of isolated pools, or porous and permeable algal mounds of limited area bounded by facies changes into tight limestone.

(7) There is conflicting testimony as to the ability of seismic techniques to accurately define the reservoir limits.

(8) Depending on interpretation, the pool presently contains either three wells or four wells. The disputed well was recompleted in another formation after producing 19,647 barrels of oil from the Strawn.

(9) Exhibits presented by both sides utilized conventional structure and Isopach contouring techniques in attempting to portray the geometry and porosity distribution of the Strawn reservoir but the development history in the area has shown that the exact size and shape of the algal mound reservoirs are highly interpretative even after drilling.

(10) Expert witness testimony and historical evidence has established the inaccuracies of geological and geophysical projections from producing proration units into undeveloped offsetting acreage thereby casting extreme doubt on penalty formulas derived from exhibits which portray net acre feet of pay and productive acreage.

(11) The evidence established that the original pressure in the Strawn in this area was approximately 4000 psi which is slightly underpressured for the depth but the original pressure in this pool was 2571 psi indicating possible regional pressure depletion originating outside the pool.

(12) Protestants contend that reserves under the drilling and proration unit for this well are inadequate to pay for the well and that a penalty must be imposed to prevent

drainage from their lease in Section 4, Township 17 South, Range 37 East.

(13) The evidence established that allowing the proposed Amerind well to produce without a penalty would permit Amerind to produce more than their share from the reservoir thereby violating the correlative rights of other operators in the pool.

(14) Several methods have been used in the past to determine allowable penalties to be assessed to wells drilled at unorthodox locations, including encroachment drainage circles (double circle), the ratio of productive acreage to the acreage of a standard unit, the ratio of productive acre feet of one tract to another, the ratio of distance to the unit boundary from the proposed location and from the nearest standard location, and combinations of such methods.

(15) Protestant recommended a combination of "productive acreage" and the "double circle" methods to arrive at a penalty of 83% or an allowable of 17% of a normal unit allowable; or as an alternative, a penalty based on acre-feet of pay under the subject tract compared to average acre-feet of pay under the three other pool tracts which calculate to be 9% of the well's normal allowable.

(16) The double circle procedure can be used with reasonable precision but this method does not adequately protect the correlative rights of offset operators in this reservoir. It understates the penalty by granting a substantial allowable even to a well drilled on the proration unit boundary.

(17) The ratio of productive acreage and the ratio of net acre-feet is subject to geological interpretation which the historical evidence has shown to be unreliable and incapable of accurate resolution prior to drilling.

(18) The ratio of distances from the unit boundary can be readily and precisely determined on the surface or with directional surveys at the bottom of the well.

(19) Uniform spacing would require wells to be drilled in the center of the spacing unit, or in the case of rectangular units, in the center of alternative halves of units, but such rigid requirements often cannot reasonably or economically be met because of the placement of roads, surface obstructions or topography so that exceptions are required; consequently tolerance is granted to allow operators flexibility in coping with these problems.

(20) Tolerance distances are authorized for flexibility in drilling wells near the center of units and are a form of minor encroachment which the Commission does not penalize. They are not designed to gain geologic advantage; therefore, any penalty assessed for an unorthodox location should be based on a location in the center of the unit or standard location area.

(21) Application for an unorthodox location creates a presumption that the proration unit is not entirely productive or that applicant is seeking a geologic advantage, or both, and such presumption must be overcome to avoid a penalized allowable.

(22) Testimony established that there is a strong tendency for the drill bit to drift northward in this area which in this case is away from the common lease line; however, applicant volunteered, and protestants requested that applicant be required to run a directional survey on this well.

(23) In order to permit applicant the opportunity to recover his share of the oil in the Shipp-Strawn pool underlying his tract, applicant should be permitted to drill its well at the proposed location but the allowable for said well should be penalized to that proportion of the top unit allowable that the distance of the well from the lease line bears to the distance of the lease line from the center of the quarter-quarter section, or 660 feet, and that such distance shall be determined at the top perforation in the well provided there is no dispute on the accuracy of the directional survey; otherwise, the distance should be determined at ground level.

(24) Since the south line is the only line being crowded in this application, no penalty is required for encroachment in other directions.

(25) Granting of this application with a penalized allowable will prevent waste, protect correlative rights and permit applicant the opportunity to recover his just and equitable share of the reserves from the Shipp-Strawn pool underlying his tract.

IT IS THEREFORE ORDERED THAT:

(1) Applicant, Amerind Oil Co., is hereby authorized to drill its Meyers Well No. 3 at a location 330 feet from the South line and 1980 feet from the West line of Section 33,

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Township 16 South, Range 37 East, NMPM, Lea County, New Mexico and to complete said well in the Shipp-Strawn Pool, the E/2 SW/4 of said Section 33 to be dedicated to said well.

(2) Applicant shall run a directional survey in said well either on a continuous recording or at points not more than 500 feet apart to the base of salt and not more than 250 feet apart thereafter, and shall file a copy of said survey with the Division's Hobbs District Office and with the offset operator, Tipperary-Pennzoil-Moncrief within 15 days after setting the production casing.

(3) The allowable for said well shall be that proportion of the top unit allowable which the distance from the well to the south line of Section 33 bears to the distance from the center of the SE/4 SW/4 of said Section 33; said distance to be determined at the top perforation of the well in the Strawn formation; provided, in the event of survey failure, or if there is a dispute as to the accuracy of the survey such penalty shall be based on the said distance determined on the surface which would be  $330/660 = 50\% \times 445 = 223$  BOPD.


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

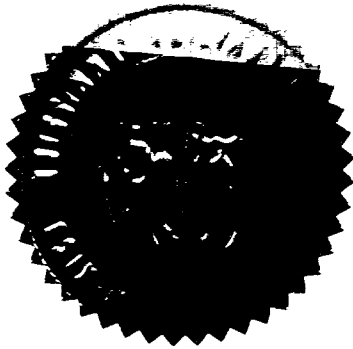
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

WILLIAM R. HUMPHRIES, Member

  
ERLING A. BROSTUEN, Member

  
WILLIAM J. LEMAY, Chairman and  
Secretary



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