

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

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

**DE NOVO
CASE NO. 10796
Order No. R-9974-A**

**APPLICATION OF MANZANO OIL
CORPORATION FOR AN UNORTHODOX
GAS WELL LOCATION, LEA COUNTY,
NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on October 14, 1993, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico hereafter referred to as the "Commission".

NOW, on this 23rd day of December, 1993, the Commission, a quorum being present, having considered the record, and being fully advised in the premises,

FINDS THAT:

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

(2) The applicant, Manzano Oil Corporation (Manzano), seeks approval of an unorthodox gas well location 660 feet from the North line and 1650 feet from the East line (Unit B) of Section 14, Township 20 South, Range 35 East, NMPM, for its Neuhaus Federal Well No. 2 which has been drilled to and completed in the Lea-Wolfcamp Pool. The E/2 of Section 14 is to be dedicated to the subject well forming a standard 320-acre gas spacing and proration unit for said pool.

(3) The applicant further seeks approval of the unorthodox location as to all prospective pools or formations including, but not limited to the Wolfcamp, spaced on 320 acres.

(4) Marathon Oil Company (Marathon), the affected offset operator to the north of the subject acreage and operator of a standard 320-acre gas proration unit comprising the S/2 of Section 11, Township 20 South, Range 35 East, NMPM, appeared at the hearing in opposition to the application and tendered witnesses and offered evidence in support of its protest. The S/2 of Section 11 is currently dedicated to the Marathon Oil Company Jordan "B" Well No. 1 located at a standard gas well location 660 feet from the South line and 1980 feet from the East line (Unit O), which is currently completed in and producing from the Lea-Wolfcamp Pool.

(5) The Marathon Jordan "B" Well No. 1 was drilled in 1984 and completed in the Morrow formation as a commercial producer. In 1991 the well was abandoned in the Morrow, plugged back and completed in the Wolfcamp formation. The well first produced from the Lea-Wolfcamp Pool during December, 1991. The evidence and testimony indicates that the Jordan "B" Well No. 1 is currently capable of producing at a rate of approximately 5,000 MCFGD through 3 1/2 inch tubing and has cumulatively produced approximately 3 BCFG with associated condensate from the Lea-Wolfcamp Pool.

(6) On April 20, 1993, Manzano filed an APD (Application to Drill) for its proposed Neuhaus Federal Well No. 2. Division records indicate that the applicant filed for a Strawn oil test at a standard 40-acre oil well location, said well to be drilled to a depth of approximately 12,400 feet.

(7) The applicant spudded the well on June 3, 1993, and subsequently drilled the subject well to the Wolfcamp formation. A drill stem test subsequently conducted in the Wolfcamp formation indicated excellent reservoir development. The well was drilled an additional 169 feet and then drilling ceased and the well was completed in the Wolfcamp because, according to applicant's testimony, initial reservoir pressure indicated that drainage was occurring and that conditions in the wellbore existed such that continued drilling could cause extensive damage to the Wolfcamp reservoir and possible lost circulation problems.

(8) Marathon contends that the applicant initially circumvented the Division's unorthodox location approval process by permitting the Neuhaus Federal Well No. 2 as a wildcat Strawn test. According to Marathon's geologic witness, the nearest Strawn production in this area is over four miles away, and, the potential for Strawn production in this area is severely limited. Manzano felt that they had a drillable Strawn prospect when combined with other prospective pays.

(9) On July 13, 1993, Manzano requested that the Division assign the Neuhaus Federal Well No. 2 a testing allowable until such time as a hearing to approve the unorthodox location is held. By letter dated July 21, 1993, the Division assigned the Neuhaus Federal Well No. 2 a testing allowable of 882 MCFG per day, or 1/3 of the absolute open flow potential rate of 2,647 MCFGD.

(10) On July 20, 1993, a condensate allowable of 6,000 barrels per month was assigned to the Neuhaus Federal Well No. 2 by the supervisor of the Division's Hobbs district office.

(11) Based upon Manzano's submission of a new potential test, the Division, by letter dated August 13, 1993, assigned the Neuhaus Federal Well No. 2 a revised gas testing allowable of 11,740 MCFGD, or 1/3 of the calculated absolute open flow potential rate of 35,240 MCFGD.

(12) Subsequent to the hearing held on August 19, 1993, the Division ordered the applicant to shut-in the Neuhaus Federal Well No. 2.

(13) Production records obtained from the applicant subsequent to the hearing indicate that during the period from July 21-August 13, 1993, the Neuhaus Federal Well No. 2 was produced, in violation of a Division directive, at an average rate of approximately 3,407 MCFG per day.

(14) The Division should consider, outside the scope of these proceedings, taking action against the applicant as may be appropriate for violation of a Division directive.

(15) Geologic and engineering evidence presented by both parties indicates that the Lea-Wolfcamp Pool is a reservoir of limited extent which can be drained and developed by the Jordan "B" Well No. 1 and the Neuhaus Federal Well No. 2.

(16) Manzano presented a geological picture which interpreted the Wolfcamp pay to be a "carbonate mound" with the thickest Wolfcamp reservoir development under the NW/4 NE/4 of Section 14 with approximately from 71% to 82% of the reservoir underlying Manzano's acreage. The difference in percentages depends upon whether the Marathon Jordan "B" No. 2 in the SW/4 NE/4 of Section 11 is included within the limits of the reservoir boundary.

(17) Marathon presented a geological picture which interpreted the Wolfcamp pay to be a "debris flow" with the thickest Wolfcamp reservoir development under the NW/4 NE/4 of Section 14 and the SW/4 SE/4 Section 11 with approximately 65% of the reservoir underlying Marathon's acreage and 35% underlying Manzano's acreage. This interpretation included the Marathon Jordan "B" No. 2 within the limits of the reservoir boundary.

(18) Although there was disagreement as to the size of the reservoir and some minor disagreement as to what porosity cut-off should be used for computing net pay, the critical element in determining the percentage of remaining recoverable reserves under the Manzano and Marathon acreage is the geometry of the reservoir body and its relative location under Sections 11 and 14.

(19) The "reef mound" and "debris flow" interpretations share similar geometry with both models portraying a gas reservoir shape with a maximum thickness of 100 plus feet thinning to "0" at the reservoir limits. Pressure data supports an interpretation that includes the Marathon Jordan "B" No. 2 within the reservoir limits.

(20) Based solely upon available well data the reservoir is clearly better developed under Manzano's acreage. This same well data also shows that in terms of areal extent Marathon has twice as much productive acreage as Manzano.

(21) Based upon the geological facts as presented Manzano and Marathon each have approximately 50% of the remaining recoverable reserves underlying their respective acreage holdings and should be allowed to produce their share of the approximate 3.2 BCF of recoverable gas and associated distillate remaining in the reservoir.

(22) The maximum producing rate of the orthodox-Marathon Jordan "B" No. 1 has been established to be 5,000 MCFGPD. Based on this information, the unorthodox-Manzano Neuhaus Federal No. 2 should be restricted to this withdrawal rate and adjusted annually to reflect an equalizing production ratio which can be calculated by comparing the current deliverability of the Manzano Neuhaus Federal No. 2 which was 7,500 MCFGPD to its current withdrawal rate of 5,000 MCFGPD. Such ratio ($5,000/7,500$ or 67%) should be the production allowable applied to the Neuhaus Federal No. 2 to equalize future withdrawal rates from the reservoir if there were no other extenuating circumstances. This allowable rate translates into a production penalty of 33%.

(23) Manzano should be penalized however because they could have force pooled the NW/4 and combined that acreage with the NE/4 which they owned to form their N/2 320 acre gas proration unit in which case their current location would be an orthodox location. They chose instead to form their unit so as to maximize their acreage holdings and drill the unorthodox location.

(24) The deviation from a standard well location, normally used by the Division in calculating production penalties ($660 \text{ feet}/1980 \text{ feet} = 33\%$ allowable production or a 67% penalty), indicates that a production penalty of 67% could be considered fair to allow the applicant the opportunity to produce its just and equitable share of the gas underlying the E/2 of Section 14.

(25) Averaging the production penalty in Finding (22) equally with the production penalty in Finding (24) would result in a production penalty of 50% ($1/2$ of $33\% + 1/2$ of 67%) which would be fair and reasonable.

(26) Approval of the unorthodox location for the Neuhaus Federal Well No. 2 will prevent the drilling of unnecessary wells, will allow the applicant the opportunity to produce its just and equitable share of the gas in the Lea-Wolfcamp Pool underlying the E/2 of Section 14, and will protect correlative rights.

(27) The production penalty of 50% should be applied to the Neuhaus Federal Well No. 2's ability to produce into the pipeline as determined from a deliverability test to be initially conducted and annually thereafter. The applicant should notify the supervisor of the Division's Hobbs district office and Marathon of the date and time said test is to be conducted in order that it may be witnessed.

IT IS THEREFORE ORDERED THAT:

(1) The application of Manzano Oil Corporation for approval of an unorthodox gas well location 660 feet from the North line and 1650 feet from the East line (Unit B) of Section 14, Township 20 South, Range 35 East, NMPM, for its Neuhaus Federal Well No. 2 which has been drilled to and completed in the Lea-Wolfcamp Pool, Lea County, New Mexico, is hereby approved.

(2) The E/2 of Section 14 shall be dedicated to the subject well forming a standard 320-acre gas spacing and proration unit for said pool.

(3) The unorthodox location is hereby further approved for all prospective pools or formations including, but not limited to the Wolfcamp, spaced on 320 acres.

(4) The Neuhaus Federal Well No. 2 is hereby assigned a production penalty of 50% effective from date of first production. The production penalty shall be applied to the Neuhaus Federal Well No. 2's ability to produce into the pipeline as determined from a deliverability test to be initially conducted and annually thereafter. The applicant shall notify the supervisor of the Division's Hobbs district office and Marathon of the date and time said test is to be conducted in order that it may be witnessed by personnel of both the Division and Marathon.

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

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

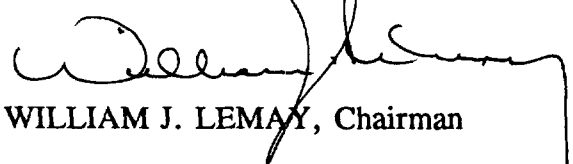
STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



JAMI BAILEY, Member



WILLIAM W. WEISS, Member



WILLIAM J. LEMAY, Chairman

