

Entered April 5, 1982
JMR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE No. 7522
Order No. R-6933

APPLICATION OF SANTA FE EXPLORATION
CO. FOR AN UNORTHODOX GAS WELL
LOCATION, EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 31, 1982, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 5th day of April, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Santa Fe Exploration Co., seeks approval of an unorthodox gas well location 660 feet from the North line and 660 feet from the West line of Section 14, Township 20 South, Range 25 East, NMPM, to test the Permo-Penn, Strawn, Atoka and Morrow formations, Eddy County, New Mexico.

(3) That the N/2 of said Section 14 is to be dedicated to the well.

(4) That the applicant requested said unorthodox location on the grounds that it will improve its structural position with respect to the so-called "Boyd Channel," a north/south trending Morrow zone of higher than usual porosity and permeability traversing the western half of said Section 14, thereby increasing its chances of obtaining strong commercial production.

(5) That a standard location for a well in the western half of the N/2 of Section 14 would be in either the NE/4 NW/4 or the SE/4 NW/4 of said Section 14.

(6) That a non-commercial well has been drilled in the S/2 of Section 11 immediately to the north, and applicant is seeking to move as far as possible away from said well, thereby making the NE/4 NW/4 of Section 14 undesirable as a location for the proposed well.

(7) That a high pressure pipe line traverses Section 14, and a portion of said line passes in a northeast/southwest direction through the middle of the SE/4 NW/4 of the section.

(8) That a standard location for the N/2 of Section 14 in the SE/4 NW/4 of the section would be in the center of said quarter-quarter section at a point 1980 feet from the North line and 1980 feet from the West line of the section.

(9) That an unorthodox location 200 feet north and 200 feet west of the aforesaid location, or 1780 feet from the North line and 1780 feet from the West line should provide adequate clearance from the aforementioned high pressure pipe line and would, according to applicant's exhibits, be as geologically attractive as the proposed unorthodox location.

(10) That an offset operator appeared at the hearing and opposed approval of the proposed unorthodox location without assessment of a penalty against production from the proposed well, but waived objection to the unorthodox location described above, i.e., 1780 feet from the North line and 1780 feet from the West line of Section 14.

(11) That the applicant should be given the choice of drilling either of the aforesaid locations, the proposed unorthodox location 660 feet from the North line and 660 feet from the West line of Section 14, or 1780 feet from the North line and 1780 feet from the West line of Section 14.

(12) That in order to protect correlative rights and to offset the advantage gained over the offsetting operators, a well drilled at the 660/660 location described above should be penalized by the imposition of a production limitation factor.

(13) That a well at said proposed location is 100 percent of the standard distance from the north boundary of the spacing and proration unit, but is only 33 percent of the standard distance from the western boundary of the unit permitted by the Division Rules and Regulations.

(14) That a well at said proposed location will have an area of drainage which extends 66.7 more acres outside its proration unit than a well at a standard location, being 21 percent of a 320 acre unit and leaving 79 percent of the area of

-3-

Case No. 7522
Order No. R-6933

drainage within the assigned unit or the permissible drainage area outside the unit.

(15) That the production limitation factor should be based upon the variation of the location from a standard location and the 66.7-acre encroachment described in Finding No. (14) above, and should be calculated by averaging the north/south location factor (100 percent), the east/west location factor (33 percent) and the acreage encroachment factor (79 percent), which yields a production limitation factor of 0.71.

(16) That in the absence of any special rules and regulations for the prorating of production from the subject well, the aforesaid production limitation factor should be applied against the well's ability to produce into the pipe line as determined by periodic tests.

(17) That in order to avoid premature abandonment and subsequent loss of recoverable reserves, provision should be made for a reasonable minimum allowable for the subject well, and 500,000 cubic feet of gas per day is a reasonable figure for a minimum allowable.

(18) That approval to drill the proposed well at the unorthodox location described in Finding No. (2) above, subject to the Production Limitation Factor described in Finding No. (15) above, or in the alternative, to drill at the unorthodox location described in Finding No. (9) above, will not impair but will protect correlative rights, will not cause waste, and should be given.

IT IS THEREFORE ORDERED:

(1) That the applicant, Santa Fe Exploration Co., is hereby authorized to drill a well to test the Permo-Penn, Strawn, Atoka and Morrow formations at a point 660 feet from the North line and 660 feet from the West line of Section 14, Township 20 South, Range 25 East, NMPM, Eddy County, New Mexico, subject to a Production Limitation Factor of 0.71 applicable as described below, or, in the alternative, to drill said well at an unorthodox location 1780 feet from the North line and 1780 feet from the West line of said Section 14 without penalty, in either case to be dedicated to the N/2 of said Section 14.

(2) That in the absence of any Special Rules and Regulations prorating production from the subject well, the following Special Rules and Regulations for a non-prorated gas well shall apply, if the well is drilled at the location first described in Paragraph (1) above:

-4-

Case No. 7522
Order No. R-6933

SPECIAL RULES AND REGULATIONS
FOR THE
APPLICATION OF A "PRODUCTION LIMITATION FACTOR"
TO A NON-PRORATED GAS WELL

APPLICATION OF RULES

RULE 1. These rules shall apply to the Santa Fe Exploration Co. Morrow formation gas well located 660 feet from the North line and 660 feet from the West line of Section 14, Township 20 South, Range 25 East, NMPM, Eddy County, New Mexico, which well's Production Limitation Factor of 0.71 shall be applied to the well's deliverability (as determined by the hereinafter set forth procedure) to determine its maximum allowable rate of production.

ALLOWABLE PERIOD

RULE 2. The allowable period for the subject well shall be six months.

RULE 3. The year shall be divided into two allowable periods commencing at 7:00 o'clock a.m. on January 1 and July 1.

DETERMINATION OF DELIVERY CAPACITY

RULE 4. Immediately upon connection of the well the operator shall determine the open flow capacity of the well in accordance with the Division "Manual for Back-Pressure Testing of Natural Gas Wells" then current, and the well's initial deliverability shall be calculated against average pipeline pressure in the manner described in the last paragraph on Page I-6 of said test manual.

RULE 5. The well's "subsequent deliverability" shall be determined twice a year, and shall be equal to its highest single day's production during the months of April and May or October and November, whichever is applicable. Said subsequent deliverability, certified by the pipeline, shall be submitted to the appropriate District Office of the Division not later than June 15 and December 15 of each year.

RULE 6. The Division Director may authorize special deliverability tests to be conducted upon a showing that the well has been worked over or that the subsequent deliverability determined under Rule 5 above is erroneous. Any such special test shall be conducted in accordance with Rule 4 above.

RULE 7. The operator shall notify the appropriate district office of the Division and all offset operators of the date and

time of initial or special deliverability tests in order that the Division or any such operator may at their option witness such tests.

CALCULATION AND ASSIGNMENT OF ALLOWABLES

RULE 8. The well's allowable shall commence upon the date of connection to a pipeline and when the operator has complied with all appropriate filing requirements of the Rules and Regulations and any special rules and regulations.

RULE 9. The well's allowable during its first allowable period shall be determined by multiplying its initial deliverability by its production limitation factor.

RULE 10. The well's allowable during all ensuing allowable periods shall be determined by multiplying its latest subsequent deliverability, as determined under provisions of Rule 5, by its production limitation factor. If the well shall not have been producing for at least 60 days prior to the end of its first allowable period, the allowable for the second allowable period shall be determined in accordance with Rule 9.

RULE 11. Revision of allowable based upon special well tests shall become effective upon the date of such test provided the results of such test are filed with the Division's district office within 30 days after the date of the test; otherwise the date shall be the date the test report is received in said office.

RULE 12. Revised allowables based on special well tests shall remain effective until the beginning of the next allowable period.

RULE 13. In no event shall the well receive an allowable of less than 500,000 cubic feet of gas per day.

BALANCING OF PRODUCTION

RULE 14. January 1 and July 1 of each year shall be known as the balancing dates.

RULE 15. If the well has an underproduced status at the end of a six-month allowable period, it shall be allowed to carry such underproduction forward into the next period and may produce such underproduction in addition to its regularly assigned allowable. Any underproduction carried forward into any allowable period which remains unproduced at the end of the period shall be cancelled.

Entered April 9, 1982
JHR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 7492
Order No. R-6934

APPLICATION OF HARVEY E. YATES
COMPANY FOR DESIGNATION OF A
TIGHT FORMATION, CHAVES COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 16, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 9th day of April, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Harvey E. Yates Company, requests that the Division in accordance with Section 107 of the Natural Gas Policy Act, and 18 C.F.R. §271.701-705 recommend to the Federal Energy Regulatory Commission that the Atoka-Morrow formation underlying certain lands situated in Chaves County, New Mexico, as described on Exhibit "A" attached to this order, hereinafter referred to as the Atoka-Morrow formation, be designated as a tight formation in said Federal Energy Regulatory Commission's regulations.

(3) That the Atoka-Morrow formation underlies all of the lands described in Exhibit "A"; that the formation consists of shales interspersed with lime and sand sections; that the top of such formation is found at an average depth of 8,100 feet below the surface of said area; and that the thickness of such formation is from 91 to 895 feet within said area.

(4) That the type section for the Atoka-Morrow formation for the proposed tight formation designation is found at a depth of from approximately 8,510 feet to 8,800 feet on the Compensated Neutron Density log dated October 4, 1977, from the Texas Oil and Gas Company B Well No. 1 located in Unit N of Section 2, Township 9 South, Range 29 East, Chaves County, New Mexico.

(5) That the following wells produce or have produced natural gas from the Atoka-Morrow formation within the proposed area:

Texas Oil & Gas Company O'Brien B #1	660 feet from South line and 1980 feet from West line of Section 2, Township 9 South, Range 29 East, NMPM, Chaves County, New Mexico.
Texas Oil & Gas Company O'Brien C #1	1980 feet from South line and 1980 feet from West line of Section 11, Township 9 South, Range 29 East, NMPM, Chaves County, New Mexico.
Texas Oil & Gas Company O'Brien A #1	660 feet from North line and 1980 feet from East line of Section 14, Township 9 South, Range 29 East, NMPM, Chaves County, New Mexico.
Texas Oil & Gas Company O'Brien #1	1980 feet from South line and 660 feet from East line of Section 11, Township 9 South, Range 29 East, NMPM, Chaves County, New Mexico.
Amoco Production Company State JA #1	1980 feet from North line and 1980 feet from West line of Section 36, Township 8 South, Range 29 East, NMPM, Chaves County, New Mexico.
General American Oil Company of Texas GAO State #1	2206 feet from North line and 660 feet from East line of Section 36, Township 7 South, Range 28 East, NMPM, Chaves County, New Mexico.
Stevens Operating Corporation O'Brien C #4	1980 feet from South line and 745 feet from West line of Section 1, Township 9 South, Range 28 East, NMPM, Chaves County, New Mexico.

(6) That the Atoka-Morrow formation underlying the above described lands has been penetrated by several other wells,

none of which produced natural gas in commercial quantities from said formation.

(7) That the evidence presented in this case demonstrated that no well formerly or currently completed in the Atoka-Morrow formation within the proposed area exhibited permeability, gas productivity, or crude oil productivity in excess of the following parameters:

- (a) average in situ gas permeability throughout the pay section of 0.1 millidarcy; and
- (b) stabilized production rates, without stimulation, against atmospheric pressure, as found in the table set out in 18 C.F.R. §271.703(c)(2)(B) of the regulations; and
- (c) production of more than five barrels of crude oil per day.

(8) That based on analysis of available data from existing wells within the proposed area and utilizing generally and customarily accepted petroleum engineering techniques and measurements:

- (a) The estimated average in situ gas permeability throughout the pay section of the Atoka-Morrow formation is expected to be 0.1 millidarcy or less; and
- (b) The stabilized production rate, against atmospheric pressure, of wells completed for production in the Atoka-Morrow formation, without stimulation, is not expected to exceed production levels determined by reference to well depth, as found in the table set out in 18 C.F.R. §271.703(c)(2)(B) of the regulations; and
- (c) No well drilled into the formation is expected to produce, without stimulation, more than five barrels of crude oil per day.

(9) That within the proposed area there is a recognized water aquifer, being the Triassic Sands, found at depths of from 100 feet to 400 feet.

(10) That existing State of New Mexico and Federal Regulations relating to casing and cementing of wells will assure

-4-

Case No. 7492
Order No. R-6934

that development of the Atoka-Morrow formation will not adversely affect said water zones.

(11) That the Atoka-Morrow formation, or any portion thereof, as described herein, is not currently being developed by infill drilling as defined in 18 C.F.R. §271.703(b)(6) of the regulations.

(12) That the Atoka-Morrow formation within the proposed area should be recommended to the Federal Energy Regulatory Commission for designation as a tight formation.

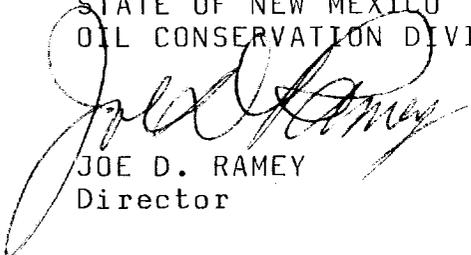
IT IS THEREFORE ORDERED:

(1) That it be and hereby is recommended to the Federal Energy Regulatory Commission pursuant to Section 106 of the Natural Gas Policy Act of 1978, and 18 C.F.R. §271.703 of the regulations that the Atoka-Morrow formation underlying certain lands in Chaves County, New Mexico, as shown on Exhibit "A" attached to this order, be designated as a tight formation.

(2) That jurisdiction of this cause is hereby 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



JOE D. RAMEY
Director

S E A L

fd/

TOWNSHIP 7 SOUTH, RANGE 28 EAST, NMPM

Sections 22 through 27: All

Sections 34 through 36: All

TOWNSHIP 7 SOUTH, RANGE 29 EAST, NMPM

Sections 19 through 36: All

TOWNSHIP 7 SOUTH, RANGE 30 EAST, NMPM

Sections 19 through 36: All

TOWNSHIP 7 SOUTH, RANGE 31 EAST, NMPM

Sections 19 through 21: All

Sections 28 through 33: All

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM

Sections 1 through 3: All

Sections 10 through 15: All

Sections 22 through 27: All

Sections 34 through 36: All

TOWNSHIP 8 SOUTH, RANGE 29 EAST, NMPM

Sections 1 through 36: All

TOWNSHIP 8 SOUTH, RANGE 30 EAST, NMPM

Sections 1 through 36: All

TOWNSHIP 8 SOUTH, RANGE 31 EAST, NMPM

Sections 4 through 9: All

Sections 16 through 21: All

Sections 28 through 33: All

TOWNSHIP 9 SOUTH, RANGE 28 EAST, NMPM

Sections 1 through 3: All

Sections 10 through 15: All

TOWNSHIP 9 SOUTH, RANGE 29 EAST, NMPM

Sections 1 through 18: All

TOWNSHIP 9 SOUTH, RANGE 30 EAST, NMPM

Sections 1 through 18: All

TOWNSHIP 9 SOUTH, RANGE 31 EAST, NMPM

Sections 4 through 9: All

Sections 16 through 18: All

Containing 138,240 acres, more or less.

Exhibit "A"
Order No. R-6934