

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. 12024  
ORDER NO. R-7400-A

**APPLICATION OF YATES PETROLEUM CORPORATION FOR AN  
UNORTHODOX INFILL GAS WELL LOCATION AND SIMULTANEOUS  
DEDICATION, EDDY COUNTY, NEW MEXICO**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on August 6, 1998, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 15<sup>th</sup> day of January, 1999 the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) The applicant, Yates Petroleum Corporation ("Yates"), seeks an exception to Division Rule 104.D(3) to continuously and concurrently produce gas from the Little Box Canyon-Morrow Gas Pool from both its proposed Little Box Canyon "AOX" Federal Well No. 2 (API No. 30-015-30222), to be drilled as an infill gas well at a location that is 1980 feet from the North line and 1190 feet from the West line of irregular Section 7, Township 21 South, Range 22 East, NMPM, Eddy County, New Mexico, and from its existing Little Box Canyon "AOX" Federal Well No. 1 (API No. 30-015-24747), located at an unorthodox gas well location 800 feet from the South line and 1600 feet from the West line (Unit N) of Section 7 (approved by Division Order No. R-7400, issued in Case No. 8006 and dated December 14, 1983). Both wells are to be simultaneously dedicated to the existing non-standard 240.64-acre gas spacing and proration unit (approved by Division Administrative Order NSP-1792, dated July 9, 1998) comprising Lots 1, 2, 3, and 4 and the E/2 W/2 (W/2 equivalent) of Section 7.

(3) The Little Box Canyon-Morrow Gas Pool is an "unprorated gas pool" not subject to the "*General Rules for the Prorated Gas Pools of New Mexico*," as established by Division Order Nos. R-8170, as amended, and R-10987. This pool is therefore subject to Division Rule 104.C(2)(b), which requires standard 320-acre gas spacing and proration units with wells to be located no closer than 1650 feet from the end boundaries nor closer than 660 feet from the side boundaries nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary.

(4) Due to a variation and correction in the legal subdivision of the U. S. Lands Survey, Section 7 is irregular in size and comprises a total of 560.64 acres (see Division Order No. R-10803, dated May 22, 1997). Since it is narrower across its latitudinal (east/west) axis than a normal sized (640-acre) section, the location of Yates' proposed Little Box Canyon "AOX" Federal Well No. 2, which falls within the SE/4 NW/4 (Unit F) of Section 7, is considered to be standard. Therefore, that portion of the original application seeking an unorthodox gas well location for the Little Box Canyon "AOX" Federal Well No. 2 can be **dismissed**.

(5) Yates presented geological and engineering evidence which indicates that:

- (a) the Morrow formation in the Little Box Canyon-Morrow Gas Pool is comprised of two reservoirs: (i) an Upper Morrow Sand; and (ii) a Lower Morrow Sand herein referred to as the Mescal Sand;
- (b) the Mescal Sand is a narrow channel deposit through the western portion of Section 7 and the northern portion of Section 18, Township 21 South, Range 22 East, NMPM, Eddy County, New Mexico;
- (c) the Mescal Sand is structurally higher to the north and has been produced in the Yates Mescal "SE" Federal Well No. 1 (API No. 30-015-24002) located in Unit "C" of Section 18, which offsets the Little Box Canyon AOX Federal Well No. 1 to the south, but has watered out and has been recompleted up-hole into another pool;
- (d) the reservoir drive mechanism within the Mescal Sand is an active water drive;

- (e) the Little Box Canyon "AOX" Federal Well No. 1 was initially capable of water-free production but, due to increasing water production, now is only marginally productive in the Mescal Sand and will soon water out;
- (f) since initial production from the Mescal Sand, the gas/water contact has moved at least 60 feet up dip in the reservoir;
- (g) there is pressure communication in the Mescal Sand between the Little Box Canyon "AOX" Federal Well No. 1 in Section 7 and the Mescal "SE" Federal Well No. 1 in Section 18; and
- (h) producing the Little Box Canyon "AOX" Federal Well No. 1 while continuously and concurrently producing the Little Box Canyon "AOX" Federal Well No. 2 in the W/2 equivalent of Section 7 will dewater the reservoir thereby lowering the abandonment pressure for the reservoir which will result in the additional recovery of natural gas from the Mescal Sand.

(6) Additional natural gas will be recovered from the Mescal Sand in the W/2 equivalent of Section 7 if the Little Box Canyon "AOX" Well Nos. 1 and 2 are concurrently and continuously produced thereby preventing the waste of natural gas and affording Yates the opportunity to produce its fair share of the reserves in this pool which underlie the W/2 equivalent of Section 7 thereby protecting its correlative rights.

(7) The Mescal Sand is confined to the W/2 equivalent of Section 7 and the northern portion of Section 18, which has watered out, and therefore the correlative rights of no offsetting operator will be impaired by the approval of this application.

(8) No other offset operator or interest owner appeared at the hearing in opposition to the proposed unorthodox location.

(9) The simultaneous dedication of the existing 240.64-acre non-standard gas spacing and proration unit comprising the W/2 equivalent of Section 7 to Yates' Little Box Canyon "AOX" Federal Wells No. 1 and 2 in the Mescal Sand of the Morrow formation will result in the increased recovery of hydrocarbons from this formation, will not impair the correlative rights of any operator in this reservoir and should therefore

be approved.

IT IS THEREFORE ORDERED THAT:

(1) The application of Yates Petroleum Corporation ("Yates") for an exception to Division Rule 104.D(3) to continuously and concurrently produce gas from the Little Box Canyon-Morrow Gas Pool from both its proposed Little Box Canyon "AOX" Federal Well No. 2 (API No. 30-015-30222), to be drilled at a standard infill gas well location 1980 feet from the North line and 1190 feet from the West line (Unit F) of irregular Section 7, Township 21 South, Range 22 East, NMPM, Eddy County, New Mexico, and its existing Little Box Canyon "AOX" Federal Well No. 1 (API No. 30-015-24747), located at an unorthodox gas well location 800 feet from the South line and 1600 feet from the West line (Unit N) of Section 7 (approved by Division Order No. R-7400, issued in Case No. 8006 and dated December 14, 1983), is hereby approved.

(2) The portion of Yates' original application seeking an unorthodox gas well location for the Little Box Canyon "AOX" Federal Well No. 2 is hereby **dismissed**.

(3) Jurisdiction 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

*Lori Wrotenbery*  
LORI WROTENBERY  
Director

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. 12076  
ORDER NO. R-2373-C*

**APPLICATION OF MARBOB ENERGY CORPORATION FOR AN  
UNORTHODOX INFILL GAS WELL LOCATION AND SIMULTANEOUS  
DEDICATION, LEA COUNTY, NEW MEXICO**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on December 3, 1998, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 15<sup>th</sup> day of January, 1999 the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) The applicant, Marbob Energy Corporation ("Marbob"), seeks an exception to Division Rule 104.D(3) to continuously and concurrently produce gas from the Lusk-Morrow Gas Pool from its: (i) proposed Lusk Deep Unit Well No. 14, to be drilled at an unorthodox infill gas well location 1650 feet from the North line and 990 feet from the West line (Unit E) of Section 19, Township 19 South, Range 32 East, NMPM, Lea County, New Mexico; (ii) existing Lusk Deep Unit "A" Com. Well No. 1 (API No. 30-025-00905), located at an unorthodox gas well location 660 feet from the North and East lines (Unit A) of Section 19 (approved by Division Orders No. R-2373, issued in Case No. 2691 and dated November 21, 1962 and R-5028, issued in Case No. 5482 and dated May 22, 1975); and (iii) existing Lusk Deep Unit "A" Well No. 5 (API No. 30-025-20122), located at an unorthodox infill gas well location 1980 feet from the South and East lines (Unit J) of Section 19. All three wells are to be simultaneously dedicated to the existing standard 643.58-acre gas spacing and proration unit comprising all of Section 19.

(3) Division Order No. R-2373 also created and defined the Lusk-Morrow Gas Pool for the production of gas from the Morrow formation. The horizontal limits for this

pool currently include the following described lands in Lea and Eddy Counties, New Mexico:

EDDY COUNTY  
TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM

Section 1:	All
Sections 24 and 25:	All

LEA COUNTY  
TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM

Sections 9 and 10:	All
Sections 15 and 16:	All
Sections 18 through 21:	All
Sections 27 through 30:	All
Section 32:	All.

(4) The Lusk-Morrow Gas Pool is an "unprorated gas pool" not subject to the "*General Rules for the Prorated Gas Pools of New Mexico*," as established by Division Order Nos. R-8170, as amended, and R-10987. However, this pool is subject to: (i) the "*Special Rules and Regulations for the Lusk-Morrow Gas Pool*," as established by Division Order No. R-2373, as amended by Order Nos. R-2373-A, R-2373-B, and R-6197, which require standard 640-acre gas spacing and proration units, with wells to be located no closer than 330 feet to the outer boundary of the SW/4 NE/4, SE/4 NW/4, NE/4 SW/4, and NW/4 SE/4 of the section; and (ii) Division Rule 104.D(3), which restricts the number of producing wells within a single gas spacing unit within non-prorated pools to only one. Producing wells within this pool are allowed to produce at capacity.

(5) Section 19 is within the boundaries of the Lusk Deep Unit which is a Federal exploratory unit operated by Marbob.

(6) Division Order No. R-5028 also authorized the simultaneous dedication of Morrow gas production from both the Lusk Deep Unit "A" Com. Well No. 1 and the Lusk Deep Unit "A" Well No. 5 to the 643.58-acre unit.

(7) Marbob presented testimony and evidence indicating that:

(a) there are numerous productive formations underlying Section 19 and the potential for hydrocarbon production from formations in addition to the Morrow formation is necessary to economically justify the drilling of an additional well in Section 19;

(b) wells drilled to the Lusk-Morrow Gas Pool are typically multiple-completed with other gas bearing pools or formations;

(c) current low drilling costs make it economically possible to drill an additional well in Section 19 and, if a Morrow well is not drilled at this time, it may never be drilled and recoverable reserves may be left in the ground and wasted;

(d) there are recoverable gas reserves under Section 19 in the Morrow pay zone that cannot be produced by any well currently producing from this section;

(e) the main gas-bearing intervals within the Morrow formation under Section 19 consists of three distinct northwest-southeast trending channels (upper, middle, and lower), each being a narrow lenticular sand of limited extent and continuity;

(f) the middle and lower Morrow sands are thicker at the proposed unorthodox well location than at any standard location in Section 19; and

(g) a well at the proposed unorthodox location will be better able to efficiently produce the remaining Morrow reserves under Section 19 than a well at a standard location.

(8) Requiring Marbob to shut in existing Morrow gas wells in Section 19, if the proposed Lusk Deep Unit Well No. 14 is successful, would not only delay the recovery of the reserves from the Lusk Deep Unit "A" Com. Well No. 1 and the Lusk Deep Unit "A" Well No. 5 but also could result in water damage to the Morrow formation resulting in the waste of hydrocarbons.

(9) The proposed Lusk Deep Unit Well No. 14 is necessary to produce the recoverable reserves in the Morrow formation under Section 19 thereby preventing waste.

(10) The simultaneous dedication of Section 19 to these three wells will result in the recovery of hydrocarbons that otherwise will be wasted.

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(11) The proposed unorthodox well location for the Lusk Deep Unit Well No. 14 at a point 1650 feet from the North line and 990 feet from the West line of Section 19, Township 19 South, Range 32 East, NMPM, is necessary to efficiently produce the recoverable reserves from the Morrow B and C zones under Section 19.

(12) Approval of an unorthodox well location for the Lusk Deep Unit Well No. 14 and the simultaneous dedication of Section 19 to the three wells will afford Marbob the opportunity to produce the recoverable reserves under Section 19 thereby protecting its correlative rights.

(13) The Lusk-Morrow Gas Pool appears to have reached maturity and is in its final stages of depletion.

(14) Current technical information regarding the Lusk-Morrow Gas Pool is limited and data acquired from the Lusk Deep Unit Well No. 14 may encourage the drilling of additional wells in the Lusk Morrow-Pool.

(15) Other operators in this area have expressed support for this application; no operator of a tract offsetting Section 19 opposed this application; and Yates Petroleum Corporation, operator of the offsetting Section 31, Township 19 South, Range 32 East, NMPM, Lea County, New Mexico to the south, provided written support for increased development density in this pool through allowing multiple wells in a spacing unit where offsetting correlative rights will not be impaired.

(16) The evidence shows that an additional well is necessary to produce the remaining recoverable gas reserves in the Morrow formation in Section 19 thereby preventing waste. Approval of the unorthodox well location for the proposed Lusk Deep Unit Well No. 14 and the simultaneous dedication of Section 19 to this well and the Lusk Deep Unit "A" Com. Well No. 1 and Lusk Deep Unit "A" Well No. 5 will afford Marbob the opportunity to produce the recoverable Morrow reserves under this section thereby protecting its correlative rights. Marbob Energy Corporation has therefore produced compelling evidence in support of its application for the simultaneous dedication of the Lusk Deep Unit "A" Com. Well No. 1, Lusk Deep Unit "A" Well No. 5, and Lusk Deep Unit Well No. 14 and its application should be **granted**.

(17) An opinion expressed by the applicant at the time of the hearing indicates that 640-acre spacing and the current set-back requirements (both internal and external) for wells within the Lusk-Morrow Gas Pool: (i) may be too restrictive for this mature pool; and (ii) are inhibiting the depletion of this pool by restricting production of its remaining reserves. The applicant further expressed an interest in taking the lead on behalf of all operators in this pool to: (i) evaluate the technical data to be collected on this well; (ii) organize this pool's historical data for the purpose of preparing a reservoir study; and (iii)



collect pressure and drainage data in order to amend the Lusk-Morrow Gas Pool rules to include:

- (a) infill drilling provisions that allow for up to four wells on each 640-acre unit (one well in each quarter section, or effective 160-acre spacing); and
- (b) the relaxation of the setback requirements for wells, such that wells can be located no closer than 660 feet to a quarter section line nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of Marbob Energy Corporation ("Marbob") for an exception to Division Rule 104.D(3) to continuously and concurrently produce gas from the Lusk-Morrow Gas Pool from its: (i) proposed Lusk Deep Unit Well No. 14, to be drilled at an unorthodox infill gas well location 1650 feet from the North line and 990 feet from the West line (Unit E) of Section 19, Township 19 South, Range 32 East, NMPM, Lea County, New Mexico; (ii) existing Lusk Deep Unit "A" Com. Well No. 1 (API No. 30-025-00905), located at an unorthodox gas well location 660 feet from the North and East lines (Unit A) of Section 19 (approved by Division Order No. R-2373, issued in Case No. 2691 and dated November 21, 1962); and (iii) existing Lusk Deep Unit "A" Well No. 5 (API No. 30-025-20122), located at an unorthodox infill gas well location 1980 feet from the South and East lines (Unit J) of Section 19 is hereby approved. All three wells shall be simultaneously dedicated to the existing standard 643.58-acre gas spacing and proration unit comprising all of Section 19.

**PROVIDED HOWEVER THAT,** within one year following the completion of the Lusk Deep Unit Well No. 14, Marbob shall file an application with the Division to amend the "*Special Pool Rules and Regulations for the Lusk-Morrow Gas Pool,*" as established by Division Order No. R-2373, as amended by Order Nos. R-2373-A, R-2373-B, and R-6197, to include:

- (a) infill drilling provisions that allow for up to four wells on each 640-acre unit (one well in each quarter section, or effective 160-acre spacing); and
- (b) the relaxation of the setback requirements for wells, such that wells can be located no closer than 660 feet to a quarter section line nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary.

At the hearing held on the application, Marbob shall present geological and engineering data in support of the application, which data shall include the information acquired from the drilling and successful completion of the Lusk Deep Unit Well No. 14.

PROVIDED FURTHER THAT, if these proposed amendments to the Lusk-Morrow Gas Pool are not adopted by the Division, Marbob shall immediately file an application to reopen this case for the entry of such further orders as may be required by the data acquired from the drilling of the Lusk Deep Unit Well No. 14.

(2) Jurisdiction 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

*Lori Wrotenbery*  
LORI WROTENBERY  
Director