

**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. 12622
ORDER NO. R-11768**

**APPLICATION OF NEARBURG EXPLORATION COMPANY, L.L.C. FOR TWO
NON-STANDARD GAS SPACING UNITS, LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on June 28 and July 26, 2001, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 22nd day of May, 2002, 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, Nearburg Exploration Company, L.L.C. ("Nearburg"), seeks exception to the spacing provisions of Division Rule 104.C (2), revised by Division Order No. R-1 1231, issued by the New Mexico Oil Conservation Commission in Case No. 12119 on August 12, 1999, in order to create two non-standard 160-acre spacing units within the East Grama Ridge-Morrow Gas Pool comprising: (i) the NE/4 of Section 34, Township 21 South, Range 34 East, NMPM, Eddy County, New Mexico, to be dedicated to the Nearburg Producing Company's existing Grama Ridge East "34" State Well No. 1 (**API No. 30-025-34948**), located at a standard gas well location 1548 feet from the North line and 990 feet from the East line (Unit H) of Section 34; and (ii) the SE/4 of Section 34 to be dedicated to the EOG Resources, Inc.-operated Llano "34" State Well No. 1 (**API No. 30-025-26318**), located at a standard gas well location 1650 feet from the South line and 660 feet from the East line (Unit I) of Section 34.

(3) The E/2 of Section 34 is included in the East Grama Ridge-Morrow Gas Pool and the W/2 of the section is in the Grama Ridge-Morrow Gas Pool. Both pools are subject to Division Rule 104.C (2), as revised, which provides for 320-acre spacing units comprising any two contiguous quarter sections of a single governmental section and

provides for infill development (a total of two wells per unit); provided however, there can only be one well in each quarter section.

(4) All of Section 34 is within the Grama Ridge Morrow Gas Storage Unit Area, which was unitized for the purpose of gas injection, storage, and withdrawal within a portion of the Morrow formation, as provided for by Division Order No. R-1 1611, issued in consolidated cases No. 12441 and 12588 on July 3, 2001.

(5) Redrock Operating Ltd., Co. of Coppell, Texas ("Redrock"), an overriding royalty interest owner in the SE/4 of Section 34, appeared at the hearing and presented evidence in opposition to the application. Raptor Natural Pipeline, LLC, operator of the Grama Ridge Morrow Gas Storage Unit Area and a unit well in the W/2 of Section 34, and Wayne Newkumet, James E. Brown, Brent D. Hilliard, Wendel Creech, and David F. Alderks, all of Midland, Texas and all overriding royalty interest owners in the N/2 of Section 34, appeared through legal counsel but did not oppose Nearburg's request.

(6) On October 10, 1979, the above-described EOG Resources, Inc.-operated Llano "34" State Well No. 1 in the SE/4 of Section 34 (originally drilled by Minerals, Inc.) was completed in the East Grama Ridge-Morrow Gas Pool. A standard 320-acre stand-up gas spacing unit comprising the E/2 of Section 34 was dedicated to the well under a communitization agreement approved October 19, 1979 and made effective May 1, 1979 by the New Mexico State Land Office ("NMSLO"). This well last produced in 1991 and the communitization agreement was terminated by the NMSLO effective March 31, 1991. This 320-acre unit ceased to exist when the well stopped producing and the communitization agreement terminated.

(7) Evidence indicates that Redrock acquired the working interest in the SE/4 of Section 34 by assignment on March 1, 1998. On May 27, 1999 Redrock assigned its interest to Roco Resources Company, Inc. of Midland, Texas, reserving however a 10% overriding royalty interest.

(8) The evidence presented by Nearburg and the records of the Division establish that:

- (a) State of New Mexico Oil and Gas Lease No. K-03592 covering the N/2 of Section 34 was cancelled by the NMSLO in January, 1999;
- (b) a new oil and gas lease covering the N/2 of Section 34 was offered by the NMSLO at the December, 1999 lease sale; the NMSLO request for bids contained no stipulations or reservations concerning the existence of the Grama Ridge

Morrow Gas Storage Unit;

- (c) Great Western Drilling Company of Midland, Texas was the successful bidder and received a new oil and gas lease (Lease No. V-05683) covering the N/2 of Section 34 that became effective January 1, 2000;
- (d) Nearburg later acquired 75% of the interest of Great Western Drilling Company in the N/2 of section 34. On February 28, 2000 the Division's district office in Hobbs approved Nearburg Producing Company's "*Application for Permit to Drill*" ("*APD*") (Division Form C-101 with Form C-102 attached) for its above-described Grama Ridge East "34" State Well No. 1 at a standard gas well location on a standard 320-acre lay-down gas spacing unit comprising the N/2 of Section 34;
- (e) the Grama Ridge East "34" State Well No. 1 was drilled in March, 2000 to a depth of 13,500 feet and completed as a Morrow gas well on June 9, 2000; on June 19, 2000 the Division's Hobbs district office approved Nearburg Producing Company's "*Request for Allowable and Authorization to Transport*" (Division Form C-104), and on June 22, 2000 approved a testing allowable for the well;
- (f) in July, 2000 Nearburg Producing Company was notified by the Division's Hobbs district office that the previously authorized lay-down N/2 spacing unit included acreage from two separate Morrow gas pools [see Finding Paragraph No. (3) above];
- (g) Nearburg filed an administrative application pursuant to Division Rule 104.D, as revised, with the Division's Santa Fe office on January 8, 2001 for the two subject 160-acre non-standard gas spacing units within the E/2 of Section 34;
- (h) due to inadequate notification pursuant to Division Rule 1207.A (3), the administrative application was ruled incomplete by the Division on February 5, 2001, and Nearburg was duly informed by letter to provide such notice;
- (i) subsequent to Nearburg's notification, Redrock filed

objections in a timely manner with the Division on February 12 and 14, 2001; the application was then set for hearing before a Division Examiner;

- (j) pending the hearing, the Grama Ridge East "34" State Well No. 1 was allowed to continue producing gas from the East Grama Ridge-Morrow Gas Pool;
- (k) at the conclusion of the June 28, 2001 hearing, a four-week continuance was granted in order to give all the parties in this matter the opportunity to reach a mutually acceptable agreement; and
- (l) at the July 26, 2001 hearing, the Examiner ordered Nearburg to shut-in its Grama Ridge East "34" State Well No. 1 because an agreement had not been reached.

(9) The evidence and testimony presented in this case and in Division Cases No. 12441 and 12588 [see Paragraph Nos. (8) and (9) of Division Order No. R-1 1611] indicate that although the Nearburg Producing Company-operated Grama Ridge East "34" State Well No. 1 is completed in and producing from the Morrow formation, it is not in communication with the unitized interval of Raptor Natural Pipeline LLC's Grama Ridge Morrow Gas Storage Unit.

(10) Nearburg Exploration Company, LLC presented engineering and geological testimony in support of its application, which the Division finds inconclusive for the following reasons:

- (a) Nearburg developed a P/Z curve with bottom-hole flowing pressures instead of static reservoir pressures, and for a deep gas well such as the Grama Ridge East "34" State Well No. 1, the difference between the static reservoir pressures and bottom-hole flowing pressures can be substantial.
- (b) The gas compressibility factors or the gas deviation factors (the Z- factor) and the gas formation volume factors (Bg) depend on and change with temperature and pressure. When the pressures and the temperatures are incorrect, the calculated P/Z values are erroneous; therefore a plot of P/Z versus cumulative production will give a wrong slope, which translates into a wrong Initial Gas in Place and

Estimated Ultimate Recovery (EUR)*. Nearburg arrived at an estimated ultimate recovery of 1.1 Bcf using the material balance method, which Nearburg's witness admitted to be too low.

- (c) The decline curve analysis presented by Nearburg is not precise enough to support any conclusion about the ultimate recovery from the Grama Ridge East "34" State Well No.1. Nearburg's witness testified that the well is declining between 50 and 82 percent annually, with probable estimated ultimate recovery of 1.7 Bcf. A range of 50 to 82 percent is too wide to use as a basis for estimating ultimate recovery.
- (d) Nearburg's witness calculated an estimated ultimate recovery of 2.7 Bcf from the geological isopach map of the Grama Ridge East Morrow sands.
- (e) Haas Petroleum Consultants conducted volumetric analysis for Nearburg and demonstrated that the estimated ultimate recovery is about 3.0 Bcf. The ultimate recovery as presented in Nearburg's testimony ranges from 1.1 to 3.0 Bcf.
- (f) Using an estimated ultimate recovery of 1.7 Bcf, Nearburg presented testimony that the size of the reservoir is between 140 and 165 acres. If the size of the reservoir is between 140 and 165 acres, we can calculate the drainage radius to be between 1393 and 1513 feet respectively. Since the well is located in the NE/4 of Section 34, Township 21 South, Range 34 East, NMPM, Eddy County, New Mexico, at a standard gas well location 1548 feet from the North line and 990 feet from the East line (Unit H), it is probable that the SE/4 of Section 34 is contributing recoverable hydrocarbons in this interval even under Nearburg's conservative estimates of ultimate recovery.

*EUR is calculated as follows: $EUR = [P_i/Z_i - P_a/Z_a]/\text{slope}$ where i indicates initial conditions and a indicates abandonment conditions.

(11) There is insufficient evidence to support Nearburg's contentions about the size, shape, and orientation of this producing interval or to show that the SE/4 does not contribute recoverable hydrocarbons in this interval.

(12) The application of Nearburg for approval of two non-standard 160-acre gas spacing units within the East Grama Ridge-Morrow Gas Pool comprising the NE/4 of Section 34 and the SE/4 of Section 34 should be **denied**.

(13) All past and any future Morrow gas production from the Nearburg Grama Ridge East "34" State Well No. 1, as described above, should be allocated to either: (i) the N/2 of Section 34, being a standard 320-acre lay-down gas spacing unit, in either the East Grama Ridge-Morrow Gas Pool or the Grama Ridge-Morrow Gas Pool, depending on the necessary adjustment to the pool boundaries to be sought through the Division's nomenclature process; or (ii) the E/2 of Section 34, being a standard 320-acre stand-up gas spacing unit in the East Grama Ridge-Morrow Gas Pool.

TTTS THEREFORE ORDERED THAT!

(1) The application of Nearburg Exploration Company, L.L.C., for an exception to the spacing provisions of Division Rule 104.C (2) creating two non-standard 160-acre spacing units within the East Grama Ridge-Morrow Gas Pool comprising: (i) the NE/4 of Section 34, Township 21 South, Range 34 East, NMPM, Eddy County, New Mexico, to be dedicated to the Nearburg Producing Company's existing Grama Ridge East "34" State Well No. 1 (**API No. 30-025-34948**), located at a standard gas well location 1548 feet from the North line and 990 feet from the East line (Unit H) of Section 34; and (ii) the SE/4 of Section 34 to be dedicated to the EOG Resources, Inc. Llano "34" State Well No. 1 (**API No. 30-025-26318**), located at a standard gas well location 1650 feet from the South line and 660 feet from the East line (Unit I) of Section 34, is hereby **denied**.

(2) The above-described Nearburg Producing Company Grama Ridge East "34" State Well No. 1 shall remain shut-in pending the following:

- (a) establishment of a standard 320-acre stand-up gas spacing unit comprising the N/2 or the E/2 of Section 34; and
- (b) designation of a single Division-approved operator for this unit and the applicable well dedicated thereto.

(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
Director

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