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 THE:**

**APPLICATION OF COLEMAN OIL & GAS INC. FOR SIMULTANEOUS DEDICATION, SAN JUAN COUNTY, NEW MEXICO**

**CASE NO. 13894**
**ORDER NO. R-12201-B**

## ORDER OF THE DIVISION

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on May 24, 2007, at Santa Fe, New Mexico, before Examiners William V. Jones and David K. Brooks.

NOW, on this 27th day of November, 2007, the Division Director, having considered 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 the subject matter.

(2) On August 26, 2004 the Division in Order No. R-12201, Case No. 13279, allowed Coleman Oil & Gas, Inc. ("Coleman") an exception to Rule 7(d) of the *"Special Pool Rules and Regulations for the Basin-Fruitland Coal Gas Pool"*, as established by Division Order No. R-8768, as amended, and authorized the simultaneous dedication of the W/2 of Section 18, Township 26 North, Range 11 West, NMPM, San Juan County, New Mexico, to the following-described four existing coal gas wells:

| Well Name & Number | API Number | Well Location |
|---|---|---|
| Ricky Well No. 1 | 30-045-25976 | 790' FNL & 875' FWL (Unit D) |
| Ricky Well No. 1R | 30-045-31165 | 765' FNL & 830' FWL (Unit D) |
| Ricky Well No. 2 | 30-045-25977 | 1850' FSL & 790' FWL (Unit L) |
| Ricky Well No. 2R | 30-045-31166 | 1845' FSL & 745' FWL (Unit L) |

(3) Division Order No. R-12201 also limited the production of all four wells to a one-

year time period, and required Ricky Wells No. 1 and 2 to produce only from the upper coal intervals and required these two wells to be shut-in after August 31, 2005.

(4) Coleman requested a one-year extension in Case No 13558, heard September 22 of 2005. The Division issued Order No R-12201-A in February of 2006, allowing Coleman the requested extension.

(5) In this case, Coleman seeks authority for permanent simultaneous dedication of these four Fruitland Coal Gas wells in the same Basin Fruitland Coal Gas Pool (71629) spacing unit, such unit consisting of 317.96 acres, more or less, defined as Lots 1, 2, 3, 4 and the E/2 W/2 (W/2) of Section 18, Township 26 North, Range 11 West, NMPM, San Juan County, New Mexico.

(6) Coleman presented testimony at the hearing from a geologist. PRO NM Energy, Inc. ("PRO NM") opposed this application and appeared at the hearing, presenting a petroleum engineer as its witness. No other parties entered an appearance or otherwise opposed this application.

(7) The Ricky Wells No. 1 and 2 were drilled to approximately 1375 feet in May of 1984 in Unit D (Lot 1) and Unit L (Lot 3), respectively. Both wells were drilled with 6-1/4 inch holes and equipped with 2-7/8 inch "slimhole" casing cemented to surface. Both were perforated in the Fruitland Sands near the upper Fruitland Coals and hydraulically fractured using a relatively small amount of sand and fluid energized with Nitrogen. Both wells flow dry gas without water through small tubing.

(8) After these wells were completed, the South Gallegos-Fruitland Pictured Cliffs Pool (77310) was extended to include the W/2 of Section 18 in January 8, 1985 in Order No R-7664. After creation of the Basin Fruitland Coal Gas Pool, the vertical limits of the South Gallegos Pool were contracted to exclude gas production from the Fruitland Coals and the pool re-designated as the South Gallegos-Fruitland Sand-Pictured Cliffs Pool - effective November 1, 1988 in Order No R-8769. The South Gallegos-Fruitland Sand Pictured Cliffs Pool has no special pool rules and allows one "sand" gas well per 160 acre standard spacing unit.

(9) Coleman became the operator of the Ricky Wells No. 1 and 2 in March of 2002 and soon thereafter added compression to these wells, raising gas production per day, per well from approximately 10 Mcf to approximately 30 Mcf.

(10) In February of 2003, Coleman completed both the Ricky Well No. 1R and the Ricky Well No. 2R on the same pad as (very near) the parent wells. Both wells were intended as completions in the thicker, lower Fruitland Coal. The Ricky Well No. 1R was cemented to near surface, but the Ricky Well No. 2R was cemented only to 1,178 feet. Both wells were completed in the lower coals, hydraulically fractured with low-gel, nitrified treatments, and produced coalbed methane with water.

(11) The two newly drilled wells were also intended as replacement wells for the "slimhole" Ricky Wells No. 1 and 2, since the original wells were "slimholes" and the Basin

Fruitland Coal Pool only allows two wells per 320-acre spacing unit. Coleman has not ceased production or plugged the original wells for reasons stated above.

(12) This gas spacing unit and these wells are located within the "Low Productivity Area of the Basin-Fruitland Coal Gas Pool," this area having been defined by Division Order No. R-8768-C dated October 15, 2002. Rule No. 7(d) (Well Density) of the *"Special Pool Rules and Regulations for the Basin-Fruitland Coal Gas Pool"* allows no more than two wells per standard 320-acre gas spacing unit and requires the wells to be located in opposite quarter sections.

(13) The upper coals are very thin, with low pressure and low gas content, and logically should not hold much gas, but no testimony was presented concerning the amount of gas contained in the coals versus the sands, or whether the completions are really in the South Gallegos-Fruitland Sand Pictured Cliffs Pool. At the time these wells were completed, the coalbed methane concept was just being realized, but dry, "tight gas" sands were being developed. The small, low rate energized hydraulic stimulations used on these wells were designed to prevent liquid loading and any clay swelling and should not have had significant vertical height growth. Also the wells have not produced water with the gas. Tighter sand completions typically show early time hyperbolic production decline. Since these wells were completed in an era of pipeline curtailments, this early-time behavior was masked by the shut-ins.

(14) PRO NM's expert stated the upper sands were "poor", but did not present a volumetric vs decline reserves comparison or other facts to support the contention that the thin coals were the dominant reservoir in lieu of the sands. After adding compression, the production from this dry gas "sand and coal" reservoir has responded and remained relatively flat, indicating a likely contribution from the coals.

(15) The gas production first declined rather steeply in the lower coal completions (Ricky Wells No. 1R and 2R) before leveling out. Ironically, this is not typical decline behavior of coalbed methane, although these wells are clearly completed in the thick wet, lower coal interval.

(16) Coleman contends the completions in the Ricky Well No. 1 and in the Ricky Well No. 1R are not in communication and produce from separate coals or separate intervals within the Fruitland formation. Coleman also contends the completions in the Ricky Well No. 2 and in the Ricky Well No. 2R are not in communication.

(a) In support, Coleman presented testimony that the older wells were monitored during hydraulic fracturing of the new wells and did not show any pressure response.

(b) Coleman also presented quarterly shut-in pressure data obtained during the past two years when all four wells were allowed to simultaneously produce. Coleman's 48-hour shut-in pressure data was obtained while the wells were shut-in during regular pipeline downtime. Surface pressures and well fluid levels were measured during these shut-in periods and used to arrive at bottomhole pressures. Coleman did not say exactly

which depth datum was used. PRO NM did not challenge the presented pressure data or how it was gathered. The pressure decline in the upper Fruitland seems to track the pressure decline in the lower Fruitland but is consistently higher. Coleman did not offer any explanation why the reservoir pressure was higher in the older, shallower completions.

(c) Gas production rate versus time plots from the basal coal and the upper Fruitland are declining at different rates and show different characteristics and seem also to support the assertion that the two completions are not vertically connected.

(17) Coleman maintains that to plug the original wells and complete the upper coals in the replacement wells would cost approximately $60,000 dollars per well and would endanger remaining reserves in the upper Fruitland which are now producing without water and without problems.

(18) PRO NM does not dispute the costs, but showed evidence that these workovers are economically viable, and could actually result in better completions using the latest fracturing techniques, and the risk of a poor completion is exactly the same risk that offset operators face all the time in completing these low pressure upper intervals and commingling them with the water bearing lower coals.

(19) PRO NM further reminds the Division that completion of the replacement wells in the upper coals and plugging the original wells was promised by Coleman. The two year delay was allowed by the Division and offset operators solely to allow an evaluation of the upper Fruitland. Not completing this work as intended gives Coleman an unfair advantage and is a violation of the rules of the Basin Fruitland Coal Gas Pool.

(20) Coleman's Ricky No. 1 and 1R wells are better producers than the Ricky No. 2 and 2R wells. The Ricky Well No. 1R is located approximately 2905 feet from PRO NM's newly drilled but not completed Gracia Federal 18I Well No. 1S. PRO NM did not contend or present evidence that the Ricky Wells No. 1 and 1R, as producing simultaneously from standard well locations, are unfairly depleting reserves under its acreage. Dugan Production Corporation and Redwolf Production Company also both operate Fruitland wells offsetting the Ricky Well No. 1 to the north and to the west respectively.

(21) This portion of the Fruitland reservoir is shallow, low pressured, and very marginal. It is apparent that the Ricky Well No. 1 is in a more advantageous location than offsetting acreage or offsetting wells. It also seems that producing the dry upper coals and sands from one well and producing (pumping) the thicker, but wet, lower Fruitland coal in a separate well is a superior way to produce the most reserves from the entire Fruitland package.

(22) It does seem the reserves in the upper coals and sands vary greatly from well to well and wells in these zones may not always be worthwhile (economical) to complete and or drill as separate wells. From data presented in this case and from this two year pilot, it still seems most economical to drill one well and complete both intervals (if the upper interval is deemed worthwhile), de-water the lower coal as fast as possible with a pumping system, and

install as much wellbore compression as possible.

(23) The pressure and rate data gathered during this two year test coupled with volumetric data should be valuable in determining reserves of both the upper intervals and the lower coal and aid in decisions whether to complete the upper Fruitland and commingle with the lower.

(24) These replacement wells as drilled by Coleman are located very close to the original wells and the completions do not seem by the evidence presented to be vertically connected. Since these four wells and completions are available to produce the Fruitland in this manner and are located at orthodox locations in the spacing unit, it would be wasteful and risky to require a successful completion in the upper Fruitland to be abandoned and try to replace the same production in a commingled wellbore.

(25) The Ricky Well No. 2R has surface pipe at 134 feet and a cement top on the production casing at 1178 feet. The Ojo Alamo extends to 281 feet, is exposed to the upper Fruitland and is not covered with cement. A bradenhead survey should be run on the Ricky Well No. 2R after notifying the Aztec district office 48 hours in advance. If the well fails the survey according to the Aztec district inspector, then Coleman should perforate this well above the current cement top (approximately 1178 feet) and circulate cement to the surface, covering the upper Fruitland and the Ojo Alamo formations.

(26) Static bottomhole pressure readings should be taken yearly during periods of pipeline maintenance and until these four wells are abandoned, and reported to the Division on sundry reports.

(27) Coleman's application for a permanent exception to the well density rules of the Basin Fruitland Coal Gas Pool should be approved in order to prevent waste and protect correlative rights. This spacing unit with four wells should be regulated so as to restrict further completions in any well which would add more than two completions in any one coal or sand.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of Coleman Oil & Gas, Inc. ("Coleman") to simultaneously dedicate the following four Fruitland Coal Gas wells in the same Basin Fruitland Coal Gas Pool (71629) spacing unit, such unit consisting of 317.96 acres, more or less, defined as Lots 1, 2, 3, 4 and the E/2 W/2 (W/2) of Section 18, Township 26 North, Range 11 West, NMPM, San Juan County, New Mexico is hereby approved.

| Well Name & Number | API Number | Well Location |
|---|---|---|
| Ricky Well No. 1 | 30-045-25976 | 790' FNL & 875' FWL (Unit D) |
| Ricky Well No. 1R | 30-045-31165 | 765' FNL & 830' FWL (Unit D) |
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| Ricky Well No. 2R | 30-045-31166 | 1845' FSL & 745' FWL (Unit L) |

(2) Currently the Ricky Wells No. 1R and 2R are completed in only the basal coal.

Only one completion within the basal coal shall be allowed within each of the quarter sections in this spacing unit.

(3) Currently the Ricky Wells No. 1 and 2 are completed only in the sands and coals above the basal Fruitland coal. Only one completion within these upper intervals shall be allowed within each of the quarter sections in this spacing unit.

(4) A bradenhead survey shall be run on the Ricky Well No. 2R after notifying the Aztec district office 48 hours in advance. If the well fails the survey, then Coleman shall perforate this well above the current cement top (approximately 1178 feet) and circulate cement to the surface.

(5) At least 48 hour shut-in bottomhole pressures shall be taken yearly during periods of normal pipeline maintenance and until these four wells are abandoned and reported to the Division on sundry reports.

(6) 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

MARK E. FESMIRE P.E.
Director

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