

**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. 12734
ORDER NO. R-11775**

**APPLICATION OF RICHARDSON OPERATING COMPANY TO ESTABLISH A
SPECIAL INFILL WELL AREA WITHIN THE BASIN-FRUITLAND COAL (GAS)
POOL AS AN EXCEPTION FROM RULE 4 OF THE SPECIAL RULES FOR THIS
POOL, SAN JUAN COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on October 18, November 13, and November 14, 2001, at Santa Fe, New Mexico before Examiner Michael E. Stogner.

NOW, on this 6th day of June, 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 Basin-Fruitland Coal (Gas) Pool is an "unprorated gas pool" not subject to Part H of the Division's rules entitled "*Gas Proration and Allocation*" (Rules 601 through 605). However, the Basin-Fruitland Coal (Gas) Pool is subject to: (a) Division Rule 104.D (3), which restricts the number of producing wells within a single gas spacing unit within non-prorated gas pools to only one (see official notice to all operators issued by the Division Director on October 25, 1999), and allows producing wells within this pool to produce at capacity; and (b) the "*Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool*," established by Division Order No. R-8768, as amended by Orders No. R-8768-A and R-8768-B, which rules provide for:

- (i) 320-acre spacing units (Rule 4);
- (ii) wells to be located in the NE/4 or SW/4 of a single governmental section and no closer than 660 feet to the

outer boundary of the spacing unit nor closer than 10 feet to any interior quarter or quarter-quarter section line or subdivision inner boundary (Rule 7); and

(iii) infill wells only after notice and hearing (Rule 4).

(3) In accordance with Rule 4 of the special pool rules governing the Basin-Fruitland Coal (Gas) Pool, Richardson Operating Company ("Richardson") seeks the creation of a special infill well area comprising the following-described lands within the pool in San Juan County, New Mexico ("infill area") to be governed by special provisions allowing two producing coal gas wells per 320-acre spacing unit:

TOWNSHIP 29 NORTH, RANGE 14 WEST, NMPM

Sections 4 through 6: All

TOWNSHIP 29 NORTH, RANGE 15 WEST, NMPM

Section 1: All

TOWNSHIP 30 NORTH, RANGE 14 WEST, NMPM

Section 16: All

Sections 19 through 21: All

Sections 28 through 33: All

TOWNSHIP 30 NORTH, RANGE 15 WEST, NMPM

Section 36: All.

(4) Richardson is the current operator of wells in the Basin-Fruitland Coal (Gas) Pool and owns interests in both State and Federal oil and gas leases within the proposed infill area. Richardson's rights under its leases extend from the surface to at least the base of the Pictured Cliffs formation.

(5) San Juan Coal Company ("SJCC"), a subsidiary of BHP Billiton Limited, appeared in opposition to Richardson's application. SJCC owns a Federal coal lease (the "Deep Lease") covering the following lands:

TOWNSHIP 30 NORTH, RANGE 15 WEST, NMPM

Section 13: S/2

Section 14: S/2

Sections 23 through 26: All

Section 35: All.

A State coal lease covering the following lands will be developed in conjunction with the Deep Lease:

TOWNSFfJP 30 NORTH, RANGE 15 WEST, NMPM
Section 36: All.

SJCC also owns a second Federal coal lease (the "Deep Lease Extension") covering the following lands:

TOWNSFfJP 30 NORTH, RANGE 14 WEST, NMPM
Sections 17 through 20: All
Sections 29: All
Section 30: All
Section 31: All.

A State coal lease covering the following lands will be developed in conjunction with the Deep Lease Extension:

TOWNSFfJP 30 NORTH, RANGE 14 WEST, NMPM
Section 32: All.

(6) SJCC currently operates an open pit and pilot underground coal mine on the western side of its above-described coal leases; however, the closest mining operations are approximately one-half mile from the western edge of the proposed infill area.

(7) On August 31, 2001 SJCC filed an application with the United States Bureau of Land Management ("USBLM") for a coal exploration license covering the following lands:

TOWNSFfJP 30 NORTH, RANGE 14 WEST, NMPM
Sections 9 and 10: All
Section 15: All
Sections 21 and 22: All
Sections 27 and 28: All
Sections 33 and 34: All.

SJCC is also attempting to lease the following land from the State:

TOWNSFfJP 30 NORTH, RANGE 14 WEST, NMPM
Section 16: All.

This area is referred to herein as the "Twin Peaks Extension Area."

(8) The Basin-Fruitland Coal (Gas) Pool underlying the proposed infill area will be affected by SJCC's current mine plan and by SJCC's plan to mine the Twin Peaks Extension Area.

(9) The proposed infill area was defined by Richardson's oil and gas leases and is overlapped by SJCC's coal leases.

(10) The proposed infill area is underlain by several coal seams, including what are referred to as Coal Seam No. 8 and Coal Seam No. 9. Richardson intends to perforate and fracture stimulate only Coal Seam No. 8, which is the seam SJCC plans to mine in its underground operation.

(11) Richardson's application is an attempt to prevent the waste of hydrocarbon resources by accelerating the production of gas from the Fruitland coal interval prior SJCC mining operations.

(12) SJCC is currently in the process of converting from surface mining operations to an underground mine system (consisting of "mine districts") to mine the Coal Seam No. 8. SJCC's underground operations will utilize continuous miner units to establish a network of tunnels around coal blocks each approximately 10,000 feet long and 1,000 feet wide. These coal blocks are then mined by a "longwall" miner machine that runs parallel to the 1,000-foot face of the coal block. The mine plan is to mine each mine district through the system, expanding the mining in an easterly direction towards Richardson's existing coal gas wells and gathering system.

(13) The longwall miner process allows for the extraction of the coal but vents the coal gas and leaves behind a void. The roof then collapses into a rubble heap called the "gob," which contains a residue of debris including some gas.

(14) SJCC intends to mine the coal before the coal gas is produced by Richardson, which would require SJCC to vent to the atmosphere coal gas present in the coal seam, and contends that there will be gas remaining in the gob left after it has mined the coal.

(15) SJCC operates the San Juan Mine (the "Mine") to supply coal to the San Juan Generating Station, operated by Public Service Company of New Mexico. The Mine was originally a surface mine. The coal supplied by SJCC to the San Juan Generating Station has been supplemented by coal from the nearby La Plata Mine. In order to replace dwindling coal reserves at the surface operations of both mines, SJCC commenced a pilot underground mine in

early 1998 in order to demonstrate the viability of such an operation.

(16) At about the same time, SJCC began development of an underground mine permit application to be filed with the Mining and Minerals Division (“MMD”) of the New Mexico Energy, Minerals, and Natural Resources Department. In October, 1999 SJCC received authorization for development of the underground mine from the MMD.

(17) Effective March 2001, SJCC obtained the Deep Lease Extension, which lies on the eastern boundary of the Deep Lease. This lease will allow SJCC to meet its coal supply contract with Public Service Company of New Mexico that extends through 2017.

(18) Originally SJCC took the position that it was in the best interests of all parties, including SJCC, to have Richardson drill and produce coal gas with infill wells in order to accelerate withdrawal; however, in August, 2001, SJCC changed its position due to concerns raised about: (i) spontaneous combustion; (ii) the existence of well casings in the coal seam; (iii) the hydraulic fracturing of the Fruitland interval; and (iv) the de-watering of the coal.

(19) SJCC presented evidence showing that the development of coal bed methane gas in advance of underground mining could pose certain safety and operational risks that would be increased by Richardson’s proposed infill development.

(20) In accordance with Mine Safety and Health Administration (“MSHA”) regulations, wellbores not properly abandoned in advance of underground mining operations must be avoided. A 300-foot radius protection pillar is required around wellbores not properly abandoned. Proper abandonment involves milling out the casing and cementing the wellbore. To create a protection pillar SJCC would need to disassemble its longwall apparatus the required distance from such a wellbore and re-establish it within the mining district an equal distance past the wellbore; therefore, the volume of coal to be by-passed by SJCC will be at least 600 feet long by 1,000 feet wide and 13 feet high.

(21) SJCC is concerned about the time lost in moving its underground mining equipment and the volume of coal lost to create these pillars.

(22) Evidence was presented by SJCC concerning increased risk for spontaneous combustion within its Mine caused by: (i) prolonged periods of down time required in order to move the longwall apparatus; (ii) the fracturing of the coal seam by the oil and gas operations, which serves to hamper SJCC’s ability to manage its ventilation systems; and (iii) the de-watering of the coal seam, which dries the coal.

(23) Richardson's proposed infill area would allow the following:

(i) recompletion in the Basin-Fruitland Coal (Gas) Pool of 18 existing Pictured Cliffs formation wells and the downhole commingling of production from both zones; and

(ii) drilling of 7 new wells to be completed as downhole commingled wellbores in the Pictured Cliffs formation and the Basin Fruitland Coal Gas Pool.

(24) The geological and engineering evidence presented demonstrates that:

(i) the No. 8 coal seam is present throughout the proposed infill area and is thick enough to support coal gas production in commercial quantities;

(ii) the proposed infill area is within that portion of the Basin-Fruitland Coal (Gas) Pool that is under-pressured;

(iii) this coal seam appears to be methane-gas saturated;

(iv) it is necessary to de-water the coal in order to obtain gas production:

(v) the gas content yield in the No. 8 coal seam within the proposed infill area ranges from 178 to 281 standard cubic feet per ton of coal; and

(vi) based on an average thickness of 20 feet, the initial gas in place within this coal seam ranges from 2.06 BCF to 3.24 BCF per 320-acre unit.

(25) The engineering evidence presented by Richardson demonstrates that infill drilling on a single 320-acre unit within the proposed infill area will serve to: (i) de-water the coal seam more quickly and efficiently; and (ii) allow for additional hydrocarbon reserves to be recovered.

(26) The New Mexico Oil & Gas Act has specific statutory mandates concerning the prevention of the waste of potash in addition to prevention of the waste of oil and gas; however, no such specific mandates exists concerning waste of coal.

(27) Richardson's application will prevent waste of its hydrocarbon resources by

accelerating the production of gas from the Fruitland formation prior to SJCC mining the coal and venting the methane gas.

(28) SJCC presented testimony that some of the coal gas that would be vented by mining operations could be recovered at the surface, but did not establish the amount that could be so recovered or the economic feasibility of such recovery.

(29) SJCC's concerns about mine safety and fire prevention can be alleviated by:

- (i) leaving a 300-foot radius protection pillar around any current or future wellbore as required by MHSA Regulations; or in the alternative
- (ii) milling out the casing in any wellbore through the coal seam and properly plugging and abandoning the wellbore with cement, in which case a coal protection pillar would not be needed.

(30) Application of the latter method would also alleviate SJCC's concerns about reduction of recoverable coal reserves due to the necessity to leave coal in place around wellbores.

(31) In order to minimize waste of gas reserves and to protect the oil and gas mineral interests correlative rights, the Division should grant Richardson's request to establish a special infill area [as described in Finding Paragraph No. (3) above] that provides an opportunity to accelerate the production of gas from the Fruitland Coal formation prior to SJCC's mining operations.

IT IS THEREFORE ORDERED THAT :

(1) As an exception to (i) Rule 4 of the "*Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool*," established by Division Order No. R-8768, as amended by Orders No. R-8768-A and R-8768-B, and (ii) Division Rule 104.D(3), the applicant, Richardson Operating Company, is hereby authorized to drill, complete and produce an optional infill well within each 320-acre gas spacing unit within the following described Special "Infill Well" Area:

TOWNSHIP 29 NORTH, RANGE 14 WEST, NMPM
Sections 4 through 6: All

TOWNSHIP 29 NORTH, RANGE 15 WEST, NMPM

Section 1: All

TOWNSHIP 30 NORTH, RANGE 14 WEST, NMPM

Section 16: All

Sections 19 through 21: All

Sections 28 through 33: All

TOWNSHIP 30 NORTH, RANGE 15 WEST, NMPM

Section 36: All.

(2) The following conditions apply to the authority granted by this order:

- (A) THE INITIAL COAL GAS WELL located on a 320-acre spacing unit shall be located in compliance with the setback and quarter section placement requirements set forth in Rule 7 of the special pool rules.
- (B) THE INFILL COAL GAS WELL on an existing 320-acre unit shall be located in the quarter section of the unit not containing a Basin-Fruitland coal gas well, and shall be located in compliance with the setback requirements set forth in Rule 7 of the special pool rules.
- (C) THE PLAT (Form C-102) accompanying the Application for Permit to Drill (OCD Form C-101 or federal form) for the subsequent infill well on an existing unit shall have outlined thereon the boundaries of the unit and shall show the location of the existing Basin-Fruitland coal gas well plus the proposed new well.

(3) Jurisdiction of this case is 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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