STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

IN THE MATTER OF THE APPLICATION OF RICHARDSON OPERATING COMPANY TO ESTABLISH A SPECIAL "INFILL WELL" AREA WITHIN THE BASIN-FRUITLAND COAL GAS POOL AS PROVIDED BY RULE 4 OF THE SPECIAL RULES FOR THIS POOL, SAN JUAN COUNTY, NEW MEXICO	)	*De Novo* Review by the Secretary of OCC Case No. 12,734 (*De Novo*)

OFFICIAL EXHIBIT FILE

De Novo REVIEW BY THE SECRETARY

BEFORE: TOM MILLS, DEPUTY SECRETARY

February 10th, 2003
Santa Fe, New Mexico

This matter came on for hearing before TOM MILLS, Deputy Secretary, Energy, Minerals and Natural Resources Department of the State of New Mexico, on Monday, February 10th, 2003, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE APPLICATION OF
RICHARDSON OPERATING COMPANY TO
ESTABLISH A SPECIAL "INFILL WELL" AREA
WITHIN THE BASIN-FRUITLAND COAL GAS
POOL AS PROVIDED BY RULE 4
OF THE SPECIAL RULES FOR THIS POOL,
SAN JUAN COUNTY, NEW MEXICO. Case No. 12734 **(De Novo)**

San Juan Coal Company's Exhibits

For Hearing De Novo
Before The Oil Conservation Commission
(Hearing Dates: October 29 – 31, 2002)

AND

FOR DE NOVO REVIEW BY THE SECRETARY
(Hearing Dates: February 10 - 11, 2003)

SAN JUAN COAL COMPANY'S EXHIBITS CHECKLIST
HEARING DE NOVO
October 29 – 31, 2002

EXH. NO.	DESCRIPTION	WITNESS	SUBMITTED	
1	General Vicinity Map			
2	Deep Lease			
3	Deep Lease Extension			
4	NM State Lease MC-0087			
5	NM State Lease MC-0088			
6	Proposed Fruitland Coal "Infill Area"			
7	10/22/1999 letter from NMEMNRD issuing Permit 99-01 for Underground Mine			
8	Summary of potential public benefit arising from employment and payroll at San Juan Mine			
9	Estimated Coal Royalty Revenue			
10	San Juan Underground Mine Area, and Oil And Gas Lease Map			
11	Continuous Miner Diagram			
12	Longwall Face Cut-Away			
13	Estimates of Bypassed Coal			
14	CD Animation Of Longwall Layout			
15	Diagram of Longwall Layout			
16	Potential Hydrofrac Disturbance Area			
17	Roof Support photograph			
18	Poor Roof Conditions photograph			
19	Ventilation of Longwall Face			
20	Resume of Jacques F. Abrahamse			
21	Resume of John Mercier			
22	Resume of Paul C. Bertoglio			
23	Resume of John G. Hattner			
24	Resume of Dan Paul Smith			
25	IBLA Order and Stipulation			
26	Coalbed Gas Systems Article by W. Ayers			
27	Exhibit Number Reserved			
28	Exhibit Number Reserved			
29	Cumulative Core Thickness By Hole			
30	Comparative Coal Cross Section A			
31	Comparative Coal Cross Section C			

32	Composite Map of Fruitland Coal Thickness			
33	Map of the San Juan Basin			
34	Production Plat FC and PC			
35	Well Plat			
36	Qualitative Analysis PC Wells			
37	Richardson Shallow Wells			
38	Pictured Cliffs Isopach			
39	S8 Isopach			
40	S8 Structure Map			
41	S9 Isopach			
42	S9 Structure Map			
43	Well Logs			
44	Estimated Gas Resources			
45	Basic Evaluations Methodologies			
46	Desorption Gas Content Map			
47	Adsorption Isotherm			
48	Top of 8 Coal vs. Desorption Gas Content Graph			
49	Saturation vs. Depth Graph			
50	8 Coal Gas Content by Quarter Section Map			
51	8 Coal Pressure Map			
52	S8 Coal 160 Acre Original Gas In Place Map			
53	8 & 9 Coal Reserves by Quarter Section Map			
54	8 & 9 Coal Recovery Factor by Quarter Section Map			
55	Pictured Cliffs Volumetric Reserves			
56	8 & 9 Coal and PC Reserves by Quarter Section Map			
57	Deep Lease Gas and Water Production Graphs Map			
58	Deep Lease Extension Gas and Water Production Graphs Map			
59	Individual PDP Plots with Projections			
60	Conclusions			

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

OIL CONSERVATION DIV.
'97 OCT 11 PM 4:42

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

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

Case No. 12734 (*de novo*)
Case No. R-11775

PRE-HEARING STATEMENT

This pre-hearing statement is submitted by San Juan Coal Company, as required by the Oil Conservation Commission.

APPEARANCES

APPLICANT
Richardson Operating Company

APPLICANT'S ATTORNEY
W. Thomas Kellahin

OPPONENT
San Juan Coal Company
Suite 200
300 West Arrington
Farmington, New Mexico 87401

Attention: Charles E. Roybal
(505) 598-4358

OPPONENT'S ATTORNEYS
James Bruce
Larry P. Ausherman
Charles E. Roybal

STATEMENT OF THE CASE

APPLICANT
Richardson Operating Company ("Richardson") seeks approval of an infill well area in the Basin-Fruitland Coal Gas Pool covering: Sections 4-6, Township 29 North, Range 14 West, NMPM; Sections 16, 19-21, and 28-33, Township 30 North, Range 14 West, NMPM; Section 1, Township 29 North, Range 15 West, NMPM; and Section 36, Township 30 North, Range 15 West, NMPM.

OPPONENT
In the area covered by Richardson's application, San Juan Coal Company ("SJCC") owns state and federal coal leases covering: Sections 17-20 and 29-32, Township 30 North, Range 14 West, NMPM; and the S½ Section 13, S½ Section 14, Sections 23-26, and Sections

35 and 36, Township 30 North, Range 15 West, NMPM (located approximately 16 miles west of Farmington). SJCC also owns other coal leases in the Farmington area. SJCC operates surface coal mines which have been operating for decades, but is currently developing the San Juan underground mine for the above lands. The underground mine will replace the existing surface mines as the sole source of supply for the San Juan Generating Station ("SJGS"). SJCC will use primarily a longwall mining system to mine coal, and it is scheduled to become operational in October 2002. The longwall mining system is an enormous piece of equipment (1,000 feet long), which mines a "panel" of coal 1000 feet wide and almost two miles long.

The San Juan underground mine will be the sole coal supplier to SJGS, which is operated by Public Service Company of New Mexico. SJGS is the second largest power plant in New Mexico, and supplies much of the electricity distributed in New Mexico. SJCC and SJGS each generate substantial payrolls and taxes which benefit state and local governments.

The underground mine involves an initial capital investment of approximately $150 million, with additional investments planned over time. SJCC plans to employ over 300 people in the underground mine and associated operations (when in full production), with an annual payroll of about $33 million. SJCC plans to extract approximately 100 million tons or more of coal from the underground mine through the year 2017 under the current contract with SJGS, which will yield about $250 million in royalties from the federal leases (based on a royalty rate of 8%). One-half of the federal royalty is payable to the state under applicable federal leasing statutes. In addition, coal production from the two state coal leases is expected to generate an additional $25 million in royalty revenue to the State Land Office. There is also the possibility of coal mining beyond 2017, especially in the "Twin Peaks" area immediately east of the existing coal leases, which could result in a royalty stream beyond that date.

Generally, the underground mine is designed so that mining occurs in a sequence which begins in the west of the mine permit area, and proceeds east. The economic viability of the underground mine depends upon systematic, uninterrupted development of the coal reserve. Adherence to the mine plan is important because, if the longwall miner is required to stop production for prolonged periods (days), explosive gases can accumulate, and the risk of an underground explosion increases. Moreover, stopping and moving the longwall equipment around wellbores is cumbersome, time consuming, and costly.

SJCC has concerns about the compatibility of the development of coalbed methane by Richardson and development of the coal itself. SJCC initially thought that a good solution to the conflict between coal development and gas development was for gas development to

occur ahead of mining. Because mining proceeds slowly, it appeared that coal gas development could proceed in advance of coal mining. However, upon further study, SJCC concluded that additional wellbores and fracing in the coal in advance of mining raise serious safety concerns that Richardson's gas development could increase the risk of spontaneous combustion and aggravate existing roof instability problems. Hydraulic fracturing of the coal seam can create passageways for oxygen to mix with methane in the coal bed, which creates conditions conducive to spontaneous combustion and mine fires. This danger is particularly real at SJCC's mine due to the type of coal being mined. A second way that fracing can create dangerous conditions, particularly in and around "gate roads," is by creating cracks in the ceilings and elsewhere which make it difficult to create a good seal for purposes of controlling mine ventilation and providing a safe working environment. An important part of underground mine management is to seal off areas that have been mined to prevent dilution of the inert atmosphere injected into the "gob." Cracks in the gate roads create pores which cannot be readily sealed, thus allowing gases to migrate.

Also, fracing causes roof instability, increasing the potential for dangerous cave-ins, which adversely affects miner safety. These issues also affect the safety of the coal gas wells, in addition to miner safety, and the ability to fully develop the underground coal reserves.

Another problem for coal development caused by gas operations is the existence of well casings in the coal seam. If wells are not abandoned or milled out in advance of mining operations, the mine must avoid the wells, and large segments of coal around each well must be bypassed, to satisfy Mine Safety and Health Administration ("MSHA") regulations. Even if existing wells are re-entered and frac'd, as opposed to drilling new wells, fracing associated with coal gas development can require mining operations to bypass or take significant mitigation efforts to stabilize the fractured areas due to roof instability. The more wells that are drilled or recompleted, the greater the problems for the mine, especially if wells are located at certain areas in the mine plan.

The problems caused by fracing in the coal seam place large segments of the mine at risk. For example, if a single wellbore must be bypassed, the amount of coal left unmined is approximately 1000 feet long and 600 feet wide, which contains approximately 330,000 tons of coal. At a royalty rate of 8%, the royalty value alone is $800,000. If there are too many wellbores in a longwall panel, it could cause an entire coal panel (10,000' x 1000' x 13') to be bypassed, with an attendant royalty loss of over $13 million. This loss of royalty and coal is exacerbated by the economic loss caused by down-time of the longwall mining system while moving the system around a well or wells.

If these issues are not addressed, gas development could lead to significant waste of the coal resource, which has far greater value than the coalbed methane. Moreover, the potential exists for recovering significant amounts of methane vented from the mine operations.

In addition, the Oil and Gas Act (the "Act"), and the Division's regulations, preclude approval of Richardson's application. The Act states in part:

> The division may establish a proration unit for each pool, such being the area that can be efficiently and economically drained by one well, and in so doing the division shall consider the economic loss caused by the drilling of unnecessary wells, the protection of correlative rights, ... the prevention of waste, the avoidance of the augmentation of risks arising from the drilling of an excessive number of wells, and the prevention of reduced recovery which might result from the drilling of too few wells.

NMSA 1978 §70-2-17.B.

Richardson, in its case before the Division, asserted that it could recover 4-5 BCF of gas per section. This was based on unrealistic coal thickness and gas content estimates, and speculation that the coal in this area was saturated. Richardson's assumptions are false. Richardson posited a total coal thickness of over 40 feet, whereas over 450 core holes drilled by SJCC show that coal thickness is less than half that amount. Moreover, data obtained by SJCC shows that the gas content of the coal is approximately half of the 250 scf/ton used by Richardson. Finally, the coal is not saturated, but rather **under**saturated. Thus, gas per section is radically less than the amounts calculated by Richardson. Even then, due to the nearness to the outcrop and high operating expenses, most of the acreage in the mine area is uneconomic for coal gas development.

As a result of the foregoing, while coal gas wells in the mine area may drain less than 320 acres, they are, for the most part, uneconomic, and approving Richardson's application violates Section 70-2-17.B. The wells are (a) unnecessary, (b) augment the risks involved in coal development, and (c) will lead to economic loss and waste of the coal resource. Richardson's correlative rights are not violated because correlative rights simply means the right to produce oil or gas <u>without</u> <u>waste</u>. **NMSA 1978 §70-2-33.**

Finally, because Richardson's Pictured Cliffs wells produce from the coal seam, Richardson already has achieved the relief it seeks. This issue first arose in the Pendragon/Whiting Matter (**Case No. 11996 (*de novo*)**, **Order No. R-11133-A**). In the present case, Richardson has numerous existing wells in the application area which are allegedly "Pictured Cliffs" wells. The evidence will

show that the Pictured Cliffs wells are actually Fruitland Coal producers. Thus, in effect, Richardson has already obtained what it has requested. In addition, four Pictured Cliffs wells are currently allowed per section, although a pilot project is proposed which could allow an <u>additional</u> four Pictured Cliffs wells per section. If additional Fruitland Coal completions are allowed, there could be up to twelve coal gas wells per section.[1] Granting Richardson's application will only make matters worse.

To support its position, SJCC will present evidence on (a) mine safety requirements, including the prevention of fires, (b) the lack of an economic return and need for additional wellbores or recompletions, (c) economic loss and risk caused by drilling unnecessary wells, (d) the dangers of fracing in the coal seam, (e) economic and physical waste, (f) conservation of mineral resources, (g) protection of neighboring properties, and (h) the public interest.

PROPOSED EVIDENCE

<u>APPLICANT</u>

<u>WITNESSES</u>	<u>EST. TIME</u>	<u>EXHIBITS</u>

<u>OPPONENT</u>

<u>WITNESSES</u>	<u>EST. TIME</u>[2]	<u>EXHIBITS</u>
Lynn Wo[illegible]	45 minutes	approx. 10
Jacques [illegible]mse (mining engineer)	60 minutes	approx. 10
John Mer[illegible] (geologist)	25 minutes	approx. 5
Paul B[illegible] (engineer)	25 minutes	approx. 5
John G. [illegible] (geologist)	25 minutes	approx. 5
Dan Pa[illegible] (engineer)	60 minutes	approx. 10

---

[1] In addition, there are numerous "Fruitland Sand" wells in the area, leading to the [illegible]l of numerous additional Fruitland Coal wells.

[2] Direct examination only.

PROCEDURAL MATTERS

Richardson has filed a motion to dismiss SJCC's application for hearing *de novo*, to which SJCC has filed a response and supplemental response. The Commission has not yet ruled on the motion.

Respectfully submitted,

James Bruce
Post Office Box 1056
Santa Fe, New Mexico 87504
(505) 982-2043

Larry P. Ausherman
Modrall Sperling
Post Office Box 2168
Albuquerque, New Mexico 87103
(505) 848-1800

Charles E. Roybal
San Juan Coal Company
Suite 200
300 West Arrington
Farmington, New Mexico 87401
(505) 598-4358

Attorneys for San Juan Coal Company

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing pleading was served upon the following counsel this 11th day of October, 2002:

W. Thomas Kellahin
Kellahin & Kellahin
Post office Box 2265
Santa Fe, New Mexico 87504
Fax No. (505) 982-2047

Stephen C. Ross
Oil Conservation Commission
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Fax No. (505) 476-3462

James Bruce

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE APPLICATION OF RICHARDSON OPERATING COMPANY TO ESTABLISH A SPECIAL "INFILL WELL" AREA WITHIN THE BASIN-FRUITLAND COAL GAS POOL AS PROVIDED BY RULE 4 OF THE SPECIAL RULES FOR THIS POOL, SAN JUAN COUNTY, NEW MEXICO. Case No. 12734 **(De Novo)**

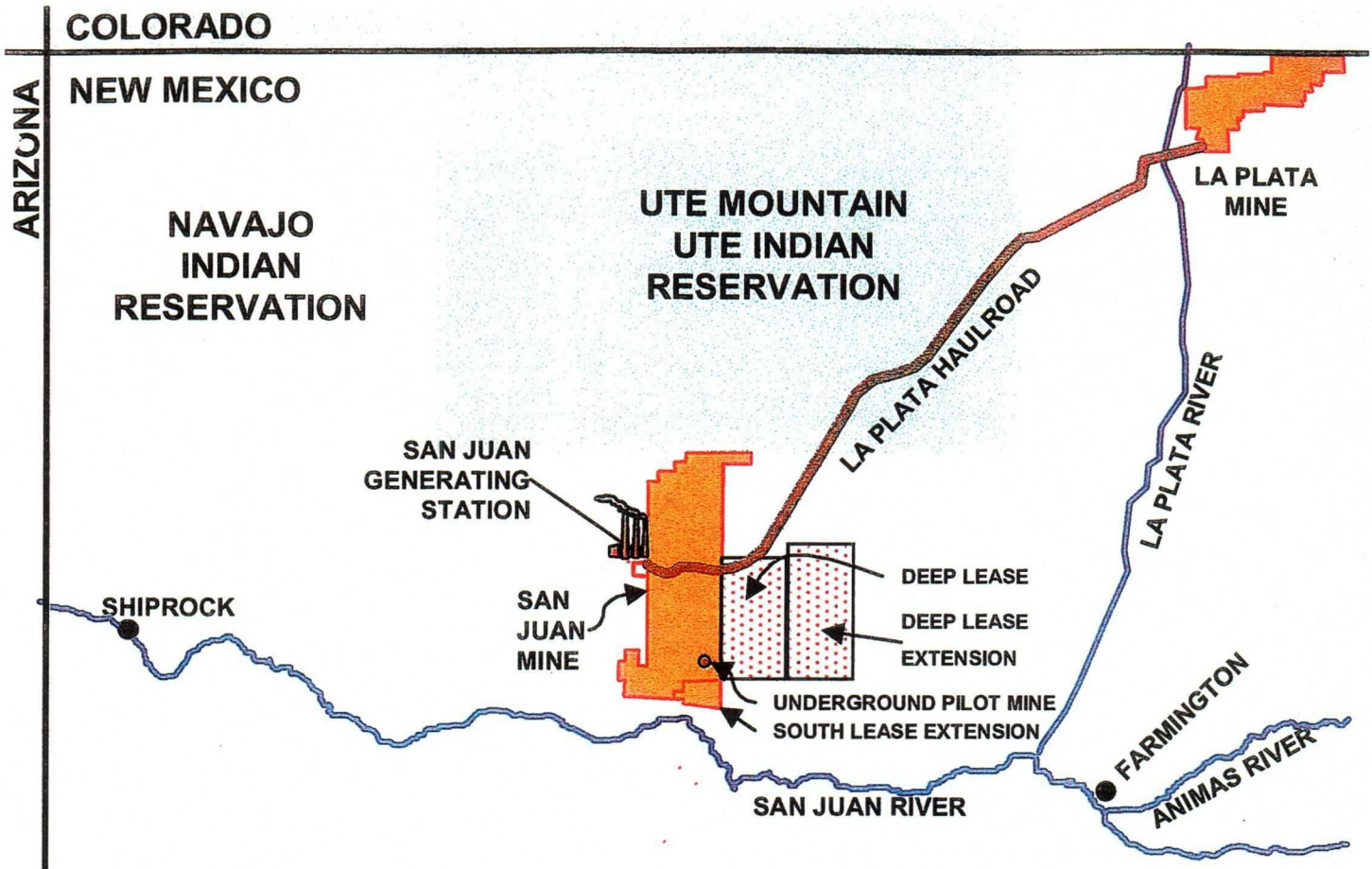
SAN JUAN COAL COMPANY'S LIST OF EXHIBITS FOR HEARING DE NOVO BEFORE THE OIL CONSERVATION COMMISSION
(Hearing Dates: October 29 – 31, 2002)

San Juan Coal Co.

Exhibit No.:	**Exhibit:**
1.	General Vicinity Map
2.	Deep Lease
3.	Deep Lease Extension
4.	NM State Lease MC-0087
5.	NM State Lease MC-0088
6.	Proposed Fruitland Coal "Infill Area"
7.	October 22, 1999 letter from NMEMNRD issuing Permit 99-01 for Underground Mine
8.	Summary of potential public benefit arising from employment and payroll at San Juan Mine
9.	Estimated Coal Royalty Revenue
10.	San Juan Underground Mine Area, and Oil And Gas Lease Map
11.	Continuous Miner Diagram
12.	Longwall Face Cut-Away

13.	Estimates of Bypassed Coal
14.	CD Animation Of Longwall Layout
15.	Diagram of Longwall Layout
16.	Potential Hydrofrac Disturbance Area
17.	Roof Support photograph
18.	Poor Roof Conditions photograph
19.	Ventilation of Longwall Face
20.	Resume of Jacques F. Abrahamse
21.	Resume of John Mercier
22.	Resume of Paul C. Bertoglio
23.	Resume of John G. Hattner
24.	Resume of Dan Paul Smith
25.	~~Exhibit Number Reserved~~ IBLA order + Stipulation
26.	~~Exhibit Number Reserved~~ Coalbed Gas Article
27.	Exhibit Number Reserved
28.	Exhibit Number Reserved
29.	Cumulative Core Thickness By Hole
30.	Comparative Coal Cross Section A
31.	Comparative Coal Cross Section C
32.	Composite Map of Fruitland Coal Thickness
33.	Map of the San Juan Basin
34.	Production Plat FC and PC
35.	Well Plat

wo257789



SAN JUAN MINE

GENERAL VICINITY

MAP

San Juan Coal Co. Exhibit No. 1
Before the Oil Conservation Commission
Hearing Dates: October 29-31, 2002

Approximate Scale

0 5 10 Miles